The Social Interface of Smart City Development

An empirical study in Magelang City, Indonesia

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Zusammensetzung der Prüfungskommission:

Prof. Dr. Conrad Schetter
(Vorsitzender)

Professor Dr. Christoph Antweiler
(Betreuer und Gutachter)

Prof. Dr. Kristina Großmann
(Gutachterin)

PD. Dr. Eva Youkhana
(weiteres prüfungsberechtigtes Mitglied)

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Abstract

What happens when a local government at the city level adopts the smart city concept as its urban development strategy? In this study, I pose an inquiry into how smart city policy is made and implemented in everyday urban life. I define smart city development as government interventions outlined in official policies to achieve excellent urban services and improved quality of life by optimizing cities' resources using innovative solutions. The research situates smart city development as a policy process. This allows investigating the interactions between smart city actors in (re)shaping smart city policy-making and implementation. Borrowing the concept of social interface framework and multiple governance approach, the present study considers the socio-political dimensions of smart cities. The empirical investigation lies at the intersection between actors' life worlds and social fields in which different interests, knowledge, and power interact. I focus my research on smart city development in Magelang City, Indonesia. This city has won the Indonesian Smart City Ranking in 2015, 2017, 2019, and 2021. It is also one of the smart city nominees in '100 smart cities movement', a national program launched by the Indonesian Ministry of Communication and Informatics (Kemenkominfo). This study is based on ten-month ethnographic fieldwork. During the fieldwork, I combined observation, semi-structured interviews, unstructured interviews, focus group discussions and documentations as data collection methods. Like other smart city initiatives in the Global South, Magelang Smart City is characterized by top-down and government-led technocratic design with lack of involvement from the city residents. The Magelang City government designed the city's future in the smart city masterplan, but the ideal implementation did not come into being. The social interface between actors (re)shaped the smart city development dynamics. The dynamics transpired in forms of contestation, resistance, negotiation, collaboration, and competition. These constitute the ways in which smart city development is executed. The projects also demonstrated policy paradoxes consisting of policy successes and unintended consequences. Although the Magelang Smart City contributed to improved urban services and urban quality of life, it also, to some degrees, implied actor latent pursuits such as city branding strategy, quest for prestige-symbolic politics, overclaiming successful projects, and the glorification of technologies.

Kurzfassung

Was passiert, wenn eine Kommunalverwaltung auf Stadtebene das Konzept einer "intelligenten Stadt" als Strategie für die Stadtentwicklung anwendet? In dieser Studie untersuche ich, wie politische Entscheidungen für die Entwicklung von "Smart Cities" gemacht und in der Praxis umgesetzt werden. Ich definiere die Smart-City-Entwicklung als staatliche Maßnahmen, die in der offiziellen Politik beschrieben werden, um eine hervorragende städtische Dienstleistung und eine verbesserte Lebensqualität durch Optimierung der städtischen Ressourcen mit innovativen Lösungen zu erreichen. Die Forschung betrachtet die Entwicklung intelligenter Städte als politischen Prozess, was die Analyse der Interaktionen zwischen den Akteuren bei der Konzeption und Umsetzung der Smart-City-Politik ermöglicht. Mit Hilfe des Konzepts der "sozialen Schnittstellen" und des "Multiple-Governance-Ansatzes" werden die sozio-politischen Dimensionen von Smart Cities in dieser Studie untersucht. Die empirische Untersuchung bezieht sich auf die Schnittstelle zwischen den Lebenswelten der Akteure und sozialen Feldern, in denen unterschiedliche Interessen, Wissen und Macht aufeinandertreffen. Ich konzentriere meine Forschung auf die Smart-City-Entwicklung in Magelang Stadt, Indonesien. Diese Stadt hat das indonesische Smart-City-Ranking in den Jahren 2015, 2017, 2019 und 2021 gewonnen. Sie ist auch eine der nominierten Smart Cities in der "100 Smart Cities Bewegung", einem nationalen Programm des indonesischen Ministeriums für Kommunikation und Informatik (Kemenkominfo). Diese Studie basiert auf einer zehnmonatigen ethnografischen Feldforschung, bei der ich verschiedene Methoden wie Beobachtungen, halbstrukturierte und unstrukturierte Interviews, Fokusgruppendiskussionen und Dokumentation kombiniert habe, um Daten zu sammeln. Wie andere Smart-City-Initiativen im Globalen Süden ist auch Magelang Stadt durch ein technokratisches Top-Down-Design unter der Leitung der Regierung und ohne Beteiligung der Stadtbewohner gekennzeichnet. Die Regierung der Magelang Stadt hat die Zukunft der Stadt im Smart City Masterplan entworfen, aber die ideale Umsetzung ist nicht zustande gekommen. Die soziale Schnittstelle zwischen den Akteuren (re)formte die Dynamik der Smart-City-Entwicklung. Die Dynamik zeigte sich in Formen der Anfechtung, des Widerstands, der Verhandlung, der Zusammenarbeit und des Wettbewerbs. Diese stellen die Art und Weise dar, wie die Entwicklung einer Smart-City durchgeführt wird. Die Projekte demonstrierten auch politische Paradoxien, die aus politischen Erfolgen und unbeabsichtigten Folgen bestehen. Obwohl die Magelang Stadt zu einer Verbesserung der städtischen Dienstleistungen und der Lebensqualität beigetragen hat, hat sie in gewissem Maße auch latente Bestrebungen von Akteuren impliziert, wie z. B. die Strategie des Stadtbrandings, das Streben nach Prestige und symbolischer Politik, die Überbewertung erfolgreicher Projekte und die Glorifizierung von Technologien.

Acknowledgement

Abbreviation and Acronym

English

ACF	The Advocacy Coalition Framework
ASCN	ASEAN Smart Cities Network
ASEAN	The Association of Southeast Asian Nations
CCSN	Citiasia Center for Smart Nation
CCTV	Closed-Circuit Television
EDC	Electronic Data Capture
e-money	Electronic Money
FGD	Focus Group Discussion
GSCM	Garuda Smart City Model
IAD	Institutional Analysis and Development
IT	Information Technology
IUWASH PLUS	Indonesia Urban Water, Sanitation and Hygiene Environmental Health for All
JSC	The Jakarta Smart City
MSF	Multiple Streams Framework
NGO	Non-Governmental Organizations
NPF	Narrative Policy Framework
NPM	New Public Management
ODF	Open Defecation Free
OSS	One Stop Service
SCM	Smart City Mission
SES	Social Ecological System
SOP	Standard Operating Procedure
SCCIC	Smart City and Community Innovation Center
TMC	Traffic Management Center
UN	United Nation
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene

Indonesian

Abbreviation	Full Name	Explanation
Balitbang	Badan Penelitian dan Pengembangan	Research and Development Agency
Bank Jateng	Bank Jawa Tengah	Central Java Bank
Bappeda	Badan Perencanaan Pembangunan Daerah	Development Planning Agency
Bappenas	Badan Perencanaan Pembangunan Nasional	National Development Planning Agency
BPK	Badan Pemeriksa Keuangan	Indonesian Audit Board
BPKAD	Badan Pengelola Pendapatan, Keuangan dan Aset Daerah	Office for Management of Revenue, Finance, and Assets
BPS	Badan Pusat Statistik	National Statistics Agency
DATAMASITA	Datang , Tanya, Amati, Promosi dan Catat	A campaign technique consisting of Come, Ask, Observe, Promote, and Record
Dinkes	Dinas Kesehatan	Office of Health
Diskominsta	Dinas Komunikasi, Informatika, dan Statistik	Office of Communication, Informatics, and Statistics
Disnakertrans	Dinas Tenaga Kerja dan Transmigrasi	Office of Man Power and Transmigration
Disperindag	Dinas Perindustrian dan Perdagangan	Office of Industry and Trade
Disperkim	Dinas Perumahan dan Pemukiman	Office of Housing and Settlement
Disperpa	Dinas Pertanian dan Pangan	Office of Agriculture and Food
DLH	Dinas Lingkungan Hidup	Office of Environmental Services
DPRD	Dewan Perwakilan Rakyat Daerah	City Legislative Council
e-retribusi	Retribusi Elektronik	Electronic Levies
IPAL	Instalasi Pengolahan Air Limbah Domestik	Wastewater Treatment Plant
ITB	Institut Teknologi Bandung	Bandung Institute of Technology
KemenPUPR	Kementerian Pekerjaan Umum dan Perumahan Rakyat	Ministry of Public Works and People Settlement
Kemenkominfo	Kementerian Komunikasi dan Informatika	Ministry of Communication and Informatics
KOTAKU	Kota Tanpa Kumuh	Cities Without Slums
LAKIP	Laporan Kinerja Instansi Pemerintah	Government Performance Accountability Report
Musrenbang	Musyawaran Perencanaan Pembangunan Nasional	Development planning forum
P2L	Pekarangan Pangan Lestari	Sustainable Food Garden Program
PDAM	Perusahaan Daerah Air Minum	Local Drinking Water Service

PKW	Pusat Kegiatan Wilayah	Regional Center of Economic Activities
PT PLN	Perseroan Terbatas Perusahaan Listrik Negara	National Electricity Company
PT Telkom	Perseroan Terbatas Telekomunikasi	Telekomunikasi Company
RKCI	Rating Kota Cerdas Indonesia	Indonesian Smart City Rating
RPJMD	Rencana Pembangunan Jangka Menengah Daerah	Regional Mid-term Development Planning
RPJMN	Rencana Pembangunan Jangka Panjang Menengah Nasional	Long Term National Development Planning
RT	Rukun Tetangga	Neighborhood
RW	Rukun Warga	Hamlet
SPAL-DT	Sistem Pengolahan Air Limbah Domestik Terpusat	Integrated Wastewater Management System
UGM	Universitas Gadjah Mada	Gadjah Mada University
UPTD	Unit Pelaksana Teknis Daerah	Technical Implementing Unit

Table of Contents

List of Tables

List of Figures

Chapter 1 Introducing Magelang Smart City

1.1 Introduction

At the end of 2017, I was driving along Magelang City Boulevard with my five-year-old son, who was just learning to read. He read almost anything written along the road during our journey. He then asked: *"What is the smart city?"* after he saw and read a billboard[1] mounted near the traffic light, which exhibits a photograph of the mayor of Magelang City holding a certificate of smart city award. At that time, I answered: *"A smart city is just like this (while showing my smartphone) through which we can order pizza or fried chickens from online apps and someone will deliver it to our house."* It is easier to discern between smartphones and basic mobile phones than to distinguish the smartness among cities. While driving, I realized that my answer did not explain what 'a smart city' actually meant. On the one hand, the smart city award billboard seems to publicly announce the existence of smart city development in Magelang City[2]. On the other hand, the above conversation tempted me to observe beyond the billboards and further ask how the Magelang Smart City is formulated and implemented in the real world.

As a growing and evolving urban development concept, the smart city conceives diverse definitions (Albino, Berardi, & Dangelico, 2015; Anthopoulos, 2017; Mora, Deakin, & Reid, 2019; Yigitcanlar et al., 2019), and opaque interpretations (Cocchia, 2014; Tan and Taeihagh, 2020). Considering the distinct socio-economic and political context, the Indonesian perspective on smart cities is a different route from those concepts that were mainly contextualized from the western perspectives. I built the working definition based

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[1] Billboard is one of the most effective outdoor advertising media in delivering messages, and it can typically be found in high-traffic and busy areas. In Indonesia, this kind of advertising has been widely used in the area of political campaigns (Leiliyanti, 2013; Rahmawati, Leiliyanti and Tajjudin, 2019), profit-oriented marketing (Wibowo and Ardhianto, 2020), and public service announcement (Nichter *et al.*, 2009).

[2] According to Law Number 23/2014 on local government, the term city (kota) refers to the autonomous administrative entity led by a mayor. It differs to regency (Kabupaten) that led by the Regent (Bupati). In the previous Law No.5/1974, the entity is called municipality [kotamadya]. Following the decentralization perspective, I follow the terminology of city rather than municipality (Turner *et al.*, 2020); thus I will use the term city instead of municipality in this study. Conceptually, Bappenas (2015) differentiated between city [kota] and rural [perdesaan] from administrative and functional perspectives. From the administrative point of view, a city is a legal jurisdiction managed by city government. While the functional approach defines a city as an area characterized by settlement, non-agricultural economic activities, and the center of both business and public services. As such a city is defined as the area with functional characteristics managed by the city government. According to National Urban Development Policy and Strategy 2015-2045, Magelang city is classified as medium city since it chartered its autonomous government with 100.000-500.000 inhabitants live in the area.

on how local scholars/academics and Indonesian government bodies define the smart city. This is due to the fact that local academics have been actively involved in smart cities; therefore, they influence how the idea of smart urbanism is translated into policy and practice (Tay *et al.*, 2018; Samosir *et al.*, 2020). The smart city is loosely translated into Indonesian as 'Kota Cerdas' or 'Kota Pintar'. The terminology emphasizes on how smart a city manage its resources and apply innovative solutions that underscore the importance of either digital or locally adapted technologies (Bappenas, 2015; Kemenkominfo, 2017; Mahesa, Yudoko and Anggoro, 2019; Prabowo, Supangkat and Mulyana, 2020; Supangkat *et al.*, 2020; Rachmawati *et al.*, 2021). In this study, I define smart city as an urban development concept that refers to a city that can optimize its resources using innovative solutions to solve urban problems, provide quality public services, and improve the quality of urban life.

Following the early development of Indonesian smart cities initiative (Supangkat in Pratama, 2021, p. 4), linking the notion of 'development' with 'smart city' is beneficial. In the context of development research, the terminology of development has been academically and practically debatable for decades[3]. Instead of entering the conceptual discourse, I find it more productive to employ the notion of development as a normative assumption that is simply understood as the effort to achieve a better society. This approach perceives development as continuity and change and process-based actions (Chambers, 2004). In an Indonesian context, the notion of development indicates and closely relates to planned interventions organized by the state (Fuady, 2012, p. 378). The state's domination in guiding socio-economic growth is referred to as a developmental state(Vu, 2007, p. 27). During Jokowi's administration, Indonesia underwent new developmentalism, marked by infrastructure and deregulation policies to spur industrialization (Warburton, 2016, p. 297). Despite the rise of democratization following the fall of New Order Era, the country continues to implement a democratic developmental state, transitioning from an authoritarian developmental state (Sato, 2019, p. 69). To that end, I define smart city development as government interventions outlined in official urban policies to achieve excellent urban services and improved quality of life by optimizing cities' resources using innovative solutions.

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[3] Indeed, the word 'development' is elusive, ambiguous, and contested. The meaning depends on the context and actors. The usage of development terminology implies Eurocentric and authoritarian tones. Thus, critical notes and reflections emerge. See for instance (Escobar, 1995; Higgot, 2005; Jarso, 2017; Ziai, 2011).

From the policy mobility point of view, the smart cities phenomenon has been a global discourse (Joss *et al.*, 2019, p. 24) and proliferate worldwide not only in the Global North but also in the Global South (Angelidou, 2015; Anand, 2021). Scholars from critical urban studies are cautious and criticize the smart city potentials such as 'Frankenstein urbanism' (Cugurullo, 2018, 2021), 'smart utopia' (Anthopoulos, 2017), and 'splintering urbanism' (Angelidou, 2017). Despite these pessimistic tones, governments in Asia are eager to integrate the smart notion into their urban development strategies. For example, Chiang Mai was launched as an innovation-driven smart city within the framework of Thailand 4.0 by Thailand's Ministry of Digital Economy and Society in 2017 (Poocharoen, Thiengburanathum and Lee, 2020). Vietnam has also inaugurated three pilot projects from 2016-2020 (Vu and Hartley, 2018, p. 849). At the regional level, the ASEAN Smart Cities Network (ASCN) was established in 2018 with Singapore as the leader that resulted in smart city action plans in 26 ASEAN cities involving 67 potential partnerships with technology-based vendors (Crumpton *et al.*, 2021). According to Tan et al (2021), the ASCN forum has facilitated transboundary learning among ASEAN country members in developing smart cities that contribute to developing smart cities in the region. Another ambitious smart city development project can be found in India. As an emerging economy, this country launched 100 Smart City Mission (SCM) in 2015 (Chatterji & Roy, 2020; Datta & Odendaal, 2019).

Similar to India's SCM, Indonesian central government has endorsed smart city movements since 2017 to address numerous infrastructural, social, and environmental problems due to significant growth of population and urbanization[4]. Spearheaded by the Ministry of Communication and Informatics (Kemenkominfo), the Ministry of Interior (Kemendagri), the Ministry of Administrative Reform (Kemenpan RB), the Ministry of Public Work and Housing (Kementerian PU), the National Development Planning Agency (Bappenas), and the Presidential Office, the '100 smart cities' movement or [Gerakan 100 Kota Cerdas] was launched in 2017 (Kemenkominfo, 2018). The national government has also facilitated Indonesian smart city development groundwork by issuing Smart City Master Plan Preparation Guidance (Mahesa, Yudoko and Anggoro, 2019, p. 1). Indonesia

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[4] Indonesia has a fast-growing population and high rates of urbanization. The recorded number of populations has reached more than 268 million, with an annual population growth rate of 1.31, of which 60% live in Java Island (Badan Pusat Statistik, 2020). The statistical service (Statistics Indonesia, 2018) projects the percentage of urbanization 53% (2015), 55% (2018), 66,6% (2035), 67% (2045), and 70% (2050) with average growth rate 2,3% per year.

targets 150 cities with indicative funding around IDR 18.5 billion /1.2 Million Euro in 2024 (Bappenas, 2020).

Both global and local narratives of smart cities are often exemplified by techno centrism, imaginary-conceptual perspectives, and entrepreneurial urbanism. Endorsed by Information Technology (IT) enterprises, city governments are the main target of the IT commercialization (Söderström, Paasche and Klauser, 2014; Kitchin, 2015; Grossi and Pianezzi, 2017). This leads to technical assessments of smart city development, highlighting the effects of advanced technologies used by cities. Recent smart city assessments and related studies are characterized by the use of metrics, indices, and ratings such as the Indonesian Smart City Ranking (Supangkat *et al.*, 2018), Dataset on Indonesian Smart Sustainable City (Mahesa, Yudoko and Anggoro, 2019), and Citiasia Center for Smart Nation (CCSN) (Kemenkominfo, 2017).

These kinds of studies emphasize ubiquitous applications of digital technologies and the high standard of 'smartified' urban features, often known as the ends-performance perspective (Albino, Berardi and Dangelico, 2015). Assessing Indonesian smart cities using these approaches is inadequate and may be biased due to the contextual factors hindering implementations (Tan and Taeihagh, 2020, p. 19). Institutional logic-based assessments through metrics and indices only capture the 'surface' of smart city development and fail to understand what really happen in the real-world policy. Additionally, it tends to neglect non-technical dimensions. In Indonesia, for instance, most cities focused on technology utilization while neglecting governance and human aspect (Supangkat *et al.*, 2020, p. 227). In practice, the smart city projects, and more generally, urban development programs, often improvise depending on the local circumstances (Offenhuber, 2019; Kumar, 2021).

This present study frames smart city as developmental processes rather than from a technical-product perspective. It addresses the transformative attributes in assessing smart city development projects involving the genealogy of policies, actor involvements, and the socio political dimensions (Fromhold-Eisebith and Eisebith, 2019, p. 4). In contrast to the technological determinism, I argue that developing smart cities is not simply technical; rather, socio-political dimensions are embodied in its processes. Drawing from the Magelang Smart City program, I situate smart city development as a policy process embedded at multiple governance levels. This allows investigating the

interactions between smart city actors in (re) shaping smart city policy-making and project implementation.

Borrowing the concept of social interface framework (Long, 2001, 2015) and multiple governance approach (Hill & Hupe, 2014; Hupe & Hill, 2006), the present study aims to better understand how smart city development policy is formulated and implemented in urban everyday life. I focus my analysis on the intersection between the life worlds of actors and the social fields in which different interests, knowledge, and power interact. Thus, the overarching research question is *How do the dynamics at the interface among actors (re)shape the smart city development in Magelang City?*

Referring the main research question and the conceptual framework, I formulate three sub-research questions. First, how does the social interface play role in smart city agenda setting and policy design at the city level? The sub-research question investigates the dynamics of policy-making process in the constitutive and directive governance. It highlights the political and administrative level involving mayor, politicians, and civil servants from the city bureaucracy. Second, how does the social interface shape the agenda setting and implementation at the project level? It examines the implementation dynamics of smart city projects and how policies are put into practice. Third, what are the outcomes and unintended consequences of the smart city projects in the research locus? This sub-research question examines the impact of these projects and the resulting policy outcomes. These three sub-research questions guide the empirical analysis of the thesis.

1.2 Setting the Scene: Magelang City and Its Smart Initiatives

This thesis illustrates the dynamics of smart city development in Magelang City experienced by the actors. Why Magelang City? First, it represents the small city that pursues smart city development. This shows that the smart city-as a concept-has been permeated not only in mega and primate cities, but also in small and medium cities. From the perspectives of scales and spaces, the notion of a smart city has also extended to towns, rural areas, and remote communities (Spicer, Goodman and Olmstead, 2021; Lakshmanan and Kalyanasundaram, 2022). With its total area less than 20 km^2, Magelang City provides the best representative in terms of context and setting. Second, Magelang City won the Indonesian Smart City Rating (Rating Kota Cerdas Indonesia/RKCI) four times for the small city category in 2015, 2017, 2019, and 2021. Also, Magelang City is

known for several government innovations, especially in digital governance categories. Third, the city has been designated one of the '100 smart cities' by the Indonesian central government. Last, the initial establishment of the smart city has been initiated since 2015, before the '100 smart cities' movement, thus providing room to assess the implementation of its smart projects.

Figure 1 Magelang City Map
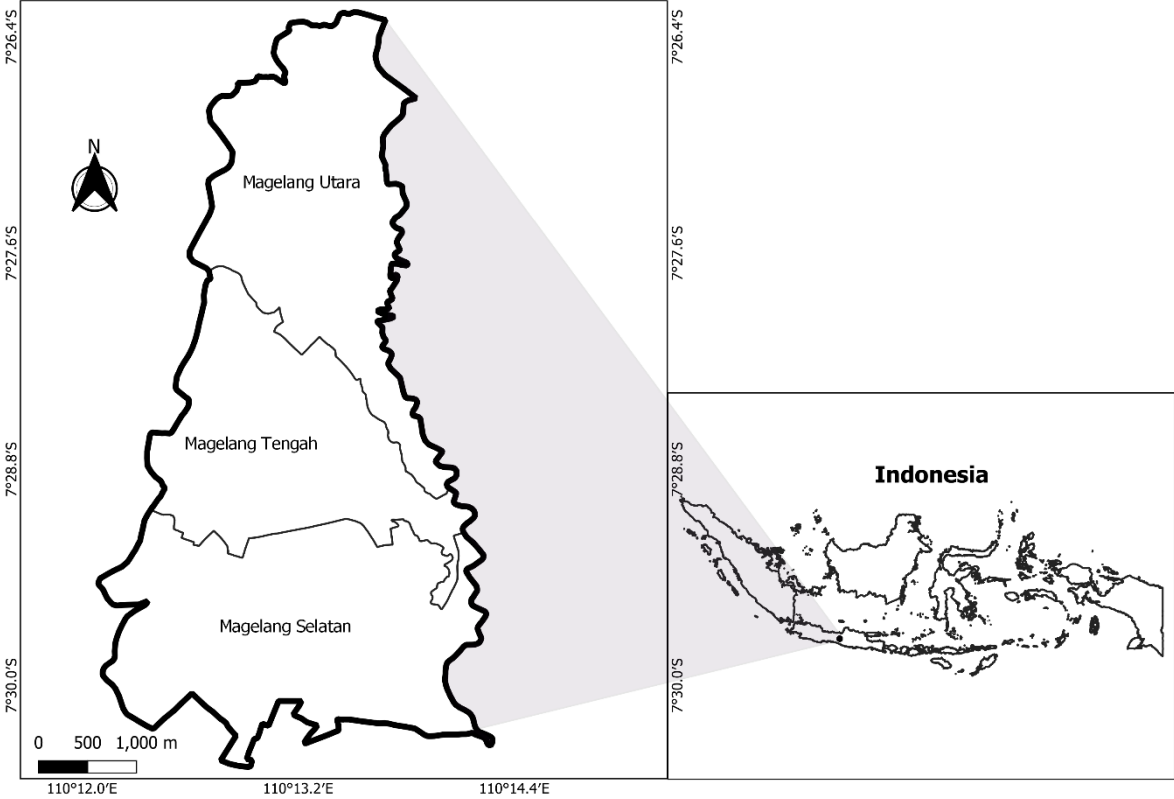
Source: The author obtained administrative boundary data from the database of Global Administrative Areas (GADM, version 4.1, accessed on 1st February 2023) (https://gadm. org/ maps/ KEN. html). Mapping was done using QGIS version 3.22.14.

The total area of Magelang city is 18.32 km². It consists of three subdistricts [kecamatan], namely Magelang Utara (6.29 km²), Magelang Tengah (5.12 km²) and Magelang Selatan (7.13 km²), 17 urban villages [kelurahan], 192 hamlets [Rukun Warga/RW], and 1031 neighborhoods [Rukun Tetangga/RT]. It is home to approximately 121,526 people. The population growth was 0.27 % with an average density reaching 6,555 people/ km². The highest population density is located in Magelang Tengah Sub

District about 8,638 people/ km^2 (BPS Kota Magelang, 2021). Geographically, Magelang city is located in the center of Java Island and shares its borders with the Magelang regency[5]. The spatial relationship of both cities resembles a beef-eyed egg in which Magelang city is in the middle surrounded by Magelang Regency. According to the field survey from satellite image recording by the city government, land use in Magelang City is dominated by settlement (728.43 hectares /39.30%), while 124.89 and 55.67 hectares are trade and service areas, as well as offices. The land for agriculture, especially rice fields, is approximately 169.25 hectares, or only 9.13% of the entire city (Diskominsta, 2019). As such, the agriculture sector is not considered the leading economic sector in the city.

Its strategic location serves as the crossroads of economic activity between Central Java and Yogyakarta Province. The Magelang city government facilitates the trade sector, including five traditional markets, 21 mini-markets, six supermarkets, and 18 wholesalers to support the trade and economic activities. According to Government Regulation No. 26/2008 on the National Spatial Plan and Central Java Provincial Regulation No. 6/2010 on the Central Java Spatial Plan 2009-2029, Magelang city has played essential roles as the center of financial services, health, education, transportation hubs, trades, logistics and supply chain of economic commodities, and other public services in the Central Java region.

The latest data from Magelang City Statistics (2021) have shown that the number of labor forces is recorded at 66,311 people, of which 60,612 were actively working and 5,699 people were unemployed (BPS Kota Magelang, 2021). As such, the unemployment rate reached 8.59%. Given the lack of potential in the agricultural sector, employment was absorbed the most in the trade sector, especially in the automotive industries by 16,749 workers (27.63%). The economic growth in Magelang city was mainly contributed by information and communication services (14.47%), electricity and gas procurement (13.0%), and logistics & transportation (12.65%) (BPS Kota Magelang, 2019). In fiscal year 2020, the city revenues reached IDR 946.1 billion which is equal to EUR 58.5 million (BPS Kota Magelang, 2021). With regard to human development, progress has been made

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[5] Despite having a similar name, Magelang City and Magelang Regency are different entities. According to local government law, both the city and the regency are at the same level as local government in the Indonesian multi-level government system; however, they share different characteristics in terms of administrative and economic attributes.

in the last decade. The Human Development Index (HDI) in Magelang City was categorized as high and has increased from 73.99 in 2010 to 78.99 in 2020. The 2020 index was higher than the national average (71.94) and the average HDI in Central Java Province (71.87).

Urban infrastructures are essential aspects of smart city projects. The Magelang city government maintains asphalt roads of 118.92 km to support urban mobility. Of the total lengths, 76.05 km were in good condition; 35.78 km were insufficient condition and 7.09 km were in bad condition or damaged (BPS Kota Magelang, 2021). In addition to roads, the total length of the sidewalk was approximately 237.830 meters (Diskominsta, 2019). For transportation, recorded public transports including bus, minibus [angkot] and taxi were 335. However, they have not been integrated into a smart/digitized mobility system where passengers can track their schedules. As one of the health service centers in the region, there were five general hospitals, a psychiatric hospital, two maternity hospitals, and 20 public health centers. Finally, the city government has installed a fiber optic network in 29 offices, 17 urban village offices, nine public health centers, seven public schools and seven public areas that provide high-speed internet access since 2018.

The Magelang City government has launched the Magelang Smart City initiative since 2016. Assisted by the Smart City and Community Innovation Center (SCCIC) of the Bandung Institute of Technology (ITB) from 2015, it preceded the national smart city movement, known as the 100 Smart Cities movement, which was inaugurated in 2017. Since then, the Magelang City Development Planning Agency (Bappeda) has integrated the Magelang Smart City Master Plan into the City's Medium-Term Development Planning (RPJMD). The smart city development initiative in Magelang City was mainly inspired by promises of smart urbanism to tackle various urban problems. The technology-institutional fusion as the crux of smart city is expected to boost urban services delivered by the city government to support its vision of becoming an excellence 'Service City' (Bappeda Kota Magelang, 2016).

To investigate how smart city policy is put into practice, it is necessary to assess the projects that have been executed within the scheme of Magelang Smart City. A survey of smart city services conducted by the Magelang City Research and Development Agency (Balitbang) reported 14 themes[6]. These include information technology infrastructures,

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[6] The list of on-going projects elaborated from various policy documents and report from The Office of Communication and Informatics (Diskominsta), Bappeda, and Balitbang can be depicted in the Appendix 1.

human resource and IT governance, smart economy, education, industry and tourism, labor and employment services, human security and disaster mitigation, public health, urban mobility and transportation, administrative services, social and community services, energy, spatial planning, and environmental services (Balitbang Kota Magelang, 2019, p. 2). In this study, I specifically focused my investigation on *e-retribusi* and *Kampung Teduh* as representatives of the quick-win projects[7] launched by the Magelang City Government (Diskominsta, 2019). Both projects also signify IT-based and non-IT-based projects that directly involve citizens during implementation. The justification for including these projects as ethnographic case is elaborated in Chapter 3 (Methodology).

E-retribusi is a smart-mediated technology that facilitates traditional market levy management systems to optimize locally generated revenue, improve efficiency, and reduce fraud in traditional market levy management. It allows small-scale merchants in the traditional market to pay their levy in a cashless manner using electronic money (e-money). Of the five traditional markets in Magelang city, two traditional markets named Cacaban and Kebonpolo have implemented the system. Another case study is the Kampung Teduh project. Kampung[8] is a particular area in the city, while teduh is an acronym for *Thematic, Integrated, and Green* [Tematik, Terpadu, Hijau]. The project aims to transform slum areas into a livable neighborhood. The smartness of this project lies in the innovative approach that integrates socioeconomic potential, governance capacity, collaborative actions between actors, and spatial considerations to solve slum problems in Magelang City.

1.3 Research Objectives and Contributions

This research is based upon previous studies which consider smart city development as a process rather than a product (Fromhold-Eisebith and Eisebith, 2019). This view suggests that smart cities in the developing world are best analyzed from the transformational and institutional changes. Not only can the researcher evade the 'black and white' assessment of a smart city, the process perspective brings the analysis into a more objective standpoint in which smart cities in Indonesia have their own constraints.

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[7] More detailed description of these projects can be found in Chapter 5 and Chapter 6.

[8] Kampung is the Indonesian term to describe a neighborhood in a rural or suburban area. In another context, kampung also refers to slums in the urban areas inhabited by rural peoples who have migrated in search of better employment.

In other words, it addresses bias assessment due to their different conditions and contextual factors that contribute to smart city achievements between the developed and developing worlds.

The research on Indonesian smart city projects by Mayangsari & Novani (2015) and Offenhuber (2019) also serves as related studies reporting the interactions of smart city actors in smart city planning and implementation. Complementing the mentioned studies, this present study aims to understand how smart city policy is made and implemented in everyday life. Given the nascent stage of Magelang smart city development, my investigation is focused on the dynamics of planning and implementation with particular attention to the social interface between smart city actors. Thus, I investigate how actors' life-worlds interact with social fields in which interests, knowledge, and power interplay during smart city development.

In reference to the overarching research question, I elaborate on two research objectives that guide the entire study. First, this study aims to develop a conceptual framework to analyze the dynamics of smart city development at multiple governance levels (Chapter 2). To do so, I integrate the concept of social interface (Long, 2001) and the multiple governance approach (Hill and Hupe, 2014). This perspective puts governance actors and their activities into two analytical levels, namely the political-administrative and managerial level. By focusing on both levels, I can investigate the interactions of smart city actors in (re)shaping smart city development to pursue its policy goals. The second objective was to empirically investigate the dynamics of smart city policy making and implementation at the political and administrative level (Chapter 4) and operational level (Chapter 5 and Chapter 6).

This study contributes to the discussion of smart city development based on empirical work. It analyzes smart city development beyond its technological features, highlighting political and social dimensions. The field-based investigation focusing on the dynamics process will provide empirical evidence on how the social interface (re) shapes smart city development from the emic perspective. It challenges positivistic views on smart city development based on metrics, indices, and other quantitative assessments, which often portray smart cities from 'façade' realities.

The result of this study offers an in-depth and interdisciplinary perspective to understand smart urbanism in everyday life. It integrates approaches from the sociology of development, public policy scholarships, and methods from anthropology. In other words, the interdisciplinary trialogue serves as windows to better understand the smart city development in the research sites-as a social phenomenon-and how it works in real world. From the geographical perspective, this study enriches the literature by reporting empirical cases of smart city development in a small city context from the Global South.

1.4 Structure of the Thesis

The monograph is divided into seven chapters. It consists of an introductory chapter, a chapter of the theoretical section, a methodological chapter, three chapters of empirical reports, and a conclusion. Chapter 1 introduces the study by presenting the research background and research objectives. In Chapter 2, I briefly review the literature on smart city research and propose a conceptual framework to investigate smart city development. Chapter 3 is a methodological section that reports research design, the description of research sites, research methods, fieldwork experiences, and data analysis.

Chapters 4, 5 and 6 are the empirical cores of my thesis. In Chapter 4, I address how the Magelang City government formulated and designed the strategic policy of smart city development. Chapters 5 and 6 are the ethnographic accounts of two smart city featured projects. Chapter 5 shows the dynamics of the e-retribusi project in Kebon Polo traditional market. The chapter discusses the complexity of a smart-mediated IT application facilitating traditional market levy collection in a cashless manner. The second empirical study will be reported in Chapter 6. The chapter discusses The Kampung Teduh Project, a slum upgrading initiative to alleviate slum area in certain kampung in Magelang City. The last part of my thesis is the concluding remarks, which will be presented in Chapter 7.

Chapter 2: A Conceptual Framework of Smart City Development

2. 1 Introduction

This chapter sets out to systematically build a conceptual framework as a lens of analysis to empirically investigate the dynamics of smart city development. In so doing, I begin by demystifying the notion of 'city' and 'urban' to grasp what these notions constitute in the discussion of urban development scholarships. The next part of this chapter presents a concise review of the literature on smart cities-related studies to position the present study in the literature. Having identified the research foci and lacunae, I then take the position to contextualize smart city development in Magelang City.

I conceive smart city development as a policy process. The policy process designates the activities to which policies are formulated, designed, and implemented as development projects. The policy process, thus, occurred at the multiple governance level. In this study, multiple governance perspective puts actors and their interactions into two analytical levels, namely constitutive-directive governance that operates in politico-administrative domain and operational governance that functions at the managerial level. Integrating the social interface framework (Long, 2001, 2015) and multiple governance approach (Hill & Hupe, 2014; Hupe & Hill, 2006), I develop a conceptual framework to better understand the dynamics of smart city development as the main output of this chapter.

2.2 Smart Urbanism: Understanding the Concept and Mapping the Themes
Cities as Multidimensional Entities

Before I delve into the concept of smart cities, it is important to clarify the notion of 'city' or 'urban' in the discussion of urban development. Etymologically, the word urban comes from the Latin *urbānus* or urb ("of the town or city, urbane"). The urb itself means a city, so that as for now, the word 'urban' can be defined as pertaining to a city as opposed to the countryside (Oxford English Dictionary, 2021). In everyday conversation by laypeople, the terms urban and city typically emphasize 'the area' or 'the region', associated with the built environment, infrastructures and other physical dimensions. However, in the academic spheres, the notion of the city or urban does not only represent as merely physical beings, but also non-physical attributes, especially the political, economic, cultural, social facets.

Perhaps early analysis and research on cities conceive political realms as the central focus of investigations. This can be traced back to the Greek philosophy of Plato and Aristotle. Plato suggested an ideal city as a city governed by political organizations that promote human virtues and manage its resources for the common good (Reeve, 2004). He further mentions the stability of city size indicated by the number of populations as the requirement of an ideal city (Charbit, 2002, p. 283). From the epistemological perspective, the demographic size deals with the political objectives that allow political organizations to govern the whole city effectively. The student of Plato, Aristotle, also discusses the political dimensions of cities through his manuscript titled Politics (Aristotle, 2000). He states human beings as *zoon politikon* or loosely translated as political animal.

As cities are inhabited by humans, which is instinctively political, thus, cities become political spheres. In this sense, Aristotle addresses several inquiries on how people can live together as communities (Aristotle, 2000). In Aristotle's perspective, a *polis* or (city) is constituted from the community starting from family as the joinder of individuals known as a household. Numerous households in certain areas form a village, and then a city emerges from the unification of villages. As the population increases, more complex problems arise as a result of the competition for resources among the inhabitants. Subsequently, political organization is needed to govern the complexity of the city. This organization, termed *politeia* by Aristotle, is known as the state or government. In this context, the government is a political entity since it deals with managing resources in the city to achieve public goods and the virtues of the community.

An insight from Islamic tradition resonates with Aristotle's political dimensions of cities. For instance, Ibn Khaldun observed the growth and development of cities in Arab and Northern Africa in the 14th century. His observations were documented in his book, titled *Mukaddimah*. According to Ibn Khaldun, a good city is a city governed by a good authority and leadership. In this context, he refers to a royal dynasty or *Khilafah* (Ibn Khaldun, 2001). Like Aristotle, Khaldun explicates the development of a city from the unification of households into villages characterized by agricultural activities (*al-darubah*). The agricultural village then evolves into more sophisticated livelihoods (*al-hajah*) characterized by various economic activities beyond agriculture. It then proceeds to the level of perfection (*al-kamalat*) and luxury (*al-taraf*) characterized by dense and

populous cities with all the associated problems. Khaldun believes that the rise and fall of cities depend on the people who live there. In this sense, good governance plays a vital role in sustaining the life of cities and hindering destructions caused mainly by their inhabitants (Zaid, Abdullah and Nobaya, 2016, p. 328).

Javanese philosophy shares a similar standpoint that politics is the primary backbone of cities. Javanese cosmology posits a king as the center of political power. In the era of Hinduism and Buddhism, circa the 7th-9th century, the city was a place where *Devaraja/Prabu*/God-king governed the kingdom in his *Kraton*/palace (Geertz, 1956, p. 80; McGee, 1967). As Islam came and was accepted by local rulers, the *Devaraja/Prabu* has changed its name into *Sultan* or *Sunan*. In this sense, not all previous Hindu-Buddhist and Islamic ideas were deserted; however, they blended as a mixture of cultures benefiting a king as the principal policymaker in city governance (Dradjat, 2008, p. 32).

Influenced by the Javanese cosmological and philosophical roots, the spatial areas of the kingdom in inland Java were divided into four categories[9]: *Kutagara/Kutanegara/Nagara, Nagaragung, Mancanegara, and Pesisiran* (Tjiptoatmodjo, 1980; Dradjat, 2008). From this typology, cities were mostly situated in *Kutagara/Kutanegara/Nagara* in which the centrality of resources, power, and politics transpires (Anderson, 1972, p. 28). In contemporary Indonesia, local governments often inherit the centrality of power and politics represented by the supremacy of the regent and mayor (Tidey, 2018, p. S123), localization of elite power (Hanif and Pratikno, 2017), and political dynasty (Facal, 2014; Aspinall and As'ad, 2016).

From the political-economy perspective, the discussion of power, resource distributions, competitions, and conflicts emerge. Cities are places to produce services and goods, which implies the dynamics of power distance, social cohesion, and social segregation. The economic dimension of the city can be assumed as a market that includes a consumer city, producer city, and merchant city (Meagher, 2008, p. 104). They all share

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[9] To analyze Javanese cities, McGee (1967, pp. 32–40) divides cities in Java into two categories: sacred cities, which are mainly located inland (known as inland cities), and market cities characterized by trades located in the coast of the island. The inland cities are basically the capital city as the center of administration, military, and culture supported by surrounding agricultural villages. The administrative system distinguished the spatial dimensions of inland cities *kutagara/kutanegara/nagara* as the first layer of cities where the king and his administration live. *Negara Agung* or *Negaragung* is an area surrounding the capital as the satellite cities, while *Mancanegara* is located outside *Negara Agung* area but it does not belong to the coastal area/pesisir.

both distinctive and similarities in supporting cities' economic activities involving the mobilization of resources. An illustration of a city as collective or mass consumption demonstrates how resources within a city entangle with political and economic actors, which sometimes generate conflicts and disputes among city populations (Castells, 1978). To deal with the potential dispute among city inhabitants, institutions-as the rule of the game-are needed. Here, the dimension of politics and policymaking in the urban setting has attracted political scientists and public policy scholars; therefore, the notion of urban politics and urban policy has emerged (Cochrane, 2017; Mitullah, 2018). The former deals with the decision-making process at the city level (Mossberger, Clarke and John, 2012), while the latter engages with the cluster of policies dedicated to governance and development in urban areas (Wang, 2018).

Another focus of urban-related studies is the social dimension of cities. The social aspects of the city had been systematically analyzed by Robert Park and his students in the 1920's drawn from the Chicago city as their research site. Their research, perhaps the pioneer of systematic investigation, specialized in urban issues from the sociological perspective. The main contribution of the Chicago school is the disorganization theory that explains social problems from the perspective of social and spatial dimensions. Another classical study was conducted by Lefèbvre (2003, 2004), who argues that urbanization can be approached from three interlinked dimensions, namely the build environment (perceived space), social definition (conceived space), and lived experiences of people in everyday life (lived space). Urbanization is a social product shaped by non-physical elements, especially social construction and structures that affect spatial practices and perceptions.

The characteristics of the urban community living in the city area are often associated with city-value known as *Gesellschaft* [in English: society; in Indonesian: patembayan] as opposed to rural-value or *Gemeinschaft* society [in English: community; in Indonesian paguyuban] in rural areas (Mellow, 2005, p. 51; Waters, 2016). In Indonesia, for instance, the dichotomy often pinpoints the *gesellschaft* and *gemeinschaft* within the context of urbanization (Yunus, 2008; Giyarsih and Marfai, 2017, p. 129). Individualistic and weak social bonds characterize the former, while the latter entitles more solidarity and socially solid community characteristics.

In the discipline of urban anthropology, Antweiler (2018, p. 1) defines "Cities are large human settlements characterized by a specific way of life called urbanism". This definition is analogous to what Gottdiener et al. (2015, p. 164) mean by urbanism as the culture of cities in which a culturally heterogeneous population inhabits. Socio-cultural embeddedness shapes the urban process by accommodating the diffusion of 'way of life' among cities' populations. In this sense, it resonates with cultural elements to exemplify the notion of cities. Furthermore, the interconnected physical, social, and cultural dimensions shape urban life in the public realms. The interconnections between spatial boundaries, which, in turn, are bound to particular physical morphologies and social systems, have been emphasized by geographers (Shin, 2018), as well as ecologists (Lynn and Strauss, 2018), and architects as well as urban designers (Iossifova, 2018). It means that the connections of cities' socio-spatial dimensions have led to urban growth and development, accentuating the dual interactions of cities' social and spatial dimensions.

Rather than viewing the city as merely a physical-infrastructural milieu, this study perceives 'the city' as an entanglement of multidimensional aspects: political, social, economic, and cultural processes involving various actors. Physical entities explicate the infrastructures and built environments in the city, in which people live together in certain socio-cultural settings. The settings shape the social and cultural practices in everyday life. At the same time, political processes highlight the ways social structures and interactions, economic activities and mobilization of resources, and cultural dimensionalities are governed through policies. As such, any interventions related to cities, including urban development policies and strategies with their various labels, are politically and socially driven.

Review of Literature on Smart Cities

A number of meta-studies taking stock of different research regarding smart city development have been conducted. They offer 'a helicopter view' that depicts the landscape of smart city research from various angles such as historical timelines, geographical perspectives, research trends, research subjects and themes, locus of smart city studies, and academic domains (Cocchia, 2014; Ingwersen and Serrano-López, 2018; Li, 2019; Zhao, Tang and Zou, 2019; Janik, Ryszko and Maerek, 2020; Zheng *et al.*, 2020). Despite different academic backgrounds and methods, the reviews share commonalities. They conclude that smart cities have been a fast-growing research subject in urban-

related studies for the past two decades. In general, literature from 'hard science' is upsurging those in the social and humanities (Li, 2019, p. 700). Additionally, Mora et al (2017, p. 20) argued that the dearth of intellectual exchange among disciplines exists; thus, there is a call for interdisciplinary approaches in studying smart cities.

Critical findings show that techno-centrism often characterizes smart cities and lacks socio-cultural and environmental countenances (Yigitcanlar *et al.*, 2019). The assumption that advanced technology is the primary driver of societal change has led to the so-called singularity and universalism of technologies in smart city development projects. Smart city adopters have often implemented the determinism on technological utilization to catch up with their counterparts or for the sake of prestige (Joo & Tan, 2020, p. 1). The logic is sometimes led by the promise of digital technologies in everyday urban life. As smart cities materialize concurrently with the progress of digital technologies, the smartness of cities is associated with the utilization of IT and data-driven government as iconic templates.

In practice, the logic of data-driven government aims to optimize the mechanics and functionalities of urban infrastructures such as transportations (Reyes-Rubiano *et al.*, 2021), public parking (Lam and Yang, 2019), waste management (Fatimah, Widianto and Hanafi, 2020), energy (Maestosi, 2021), and housing (Colistra, 2019) et cetera. Highlighting the singularity of technological advancement, smart city platforms promise interoperability and replicability (Jeong, Kim and Kim, 2020, p. 17) that leads to the pertinence of technological innovations. In this sense, technological solutions enhance the better quality of urban life, thus it seems to suffice to realize smart cities by harnessing advanced digital technologies. It also means that smart cities can come into being by deploying sets of technological apparatuses regardless of political, social, and geographical settings. Smart cities' technological grandiloquence and technocentric attributes tend to signify the universalism of smart cities and neglect the variabilities of space and time dimensions. As a result, smart city developments and related labels are attentively depoliticized (Shelton et al., 2015), and thus are also regarded as apolitical artifacts (Cugurullo, 2021, p. 46) and neglected vested interests (Salim and Hudalah, 2020, p. 175).

Another visible trend of smart city projects is corporatism and entrepreneurial urbanism. Endorsed by IT companies and businesses, smart cities involve multiple

vested-interest actors. This corporate story-telling utilizes the smartness lexicon as urban vernacular, infused into marketing and systemic campaigns for companies' profit-making (Söderström, Paasche and Klauser, 2014). In regards to smart city commercialization, two observations can be made. First, many smart city projects are corporate-led (Hollands, 2015; Kitchin, 2015; Grossi and Pianezzi, 2017), positioning IT firms and businesses at the forefront of smart city developments.

Consequently, it leads to the second observation that neoliberal economies ideologically drive the establishment of smart cities. Smart city developments often benefit business and political elites, leaving several question marks about urban equality and governmentality. For instance, Grossi & Pianezzi (2017) explain how smart initiatives in the city of Genoa deflect in addressing the real urban problems within the city and render the interests of IT industries and firms. Another example can be seen in the case of Singapore's Smart Nation project, which initiated smart consumption of household resources, and the smart eldercare program has shaped political legitimacy and supported the neoliberal-developmental logic of state authority (Ho, 2017, p. 3113).

Similar to global trends in smart city research, technological and neo-liberal discourses dominate the Indonesian research fora. Many researchers develop and propose technologically-based models to build Indonesian smart cities with few insights from practical experiences in the real world. A bibliometric analysis by Parlina et al (2019) reports that computer and engineering studies dominated Indonesian smart city publications indexed by Scopus. This dominance steers to the discourse that accentuates technical feasibilities and hi-tech aspects relying on sophisticated technologies, while diminishing the non-technical dimensions. Another study analyzing 518 scientific documents published from 2013 to 2020[10], by Purnomo et al (2021) amplifies the domination of researches that focus on technicalities in the area of Government, Living, Information management, Intelligent system, Mobility, and Environment (GLIIME). This condition resonates with what Mora et al (2017) mention that most smart city projects have been lack of social, cultural, and environmental attributes.

Other scientific publications develop smart city development models, conceptual frameworks, and measurement indices for smart city assessment tools. Perhaps the first

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[10] The dataset can be publicly accessed and available at:
https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/W4DDOJ (Purnomo, Madyatmadja, *et al.*, 2021)

model for Indonesian smart cities was the Garuda[11] Smart City Model (GSCM) developed by SCCIC ITB, led by Professor Supangkat (2015). The GSCM consists of three enablers that designate the core dimension of smart city development: people, governance, and technology embedded in three implementation domains in the economy, society, and environment. It was revised in 2018 to accentuate city resources, either tangible or intangible properties, as the baselines of urban development strategies and transform them into smart city enablers (Supangkat *et al.*, 2018; Tay *et al.*, 2018). Their model was built on the cities' maturity perspective through which cities can inspect the readiness level of implementation[12]. Other frameworks exist, such as Smart City Nusantara (Effendi, Subiyanto and Utdityasan, 2016) and a consultant-based model named CCSN (Kemenkominfo, 2017). The use of macro-urban development indicators in these models restricts researchers in assessing the real impact and disregarding micro-perspectives of implementation dynamics.

Figure 2 GSCM Framework

Source: (Supangkat *et al.*, 2018)

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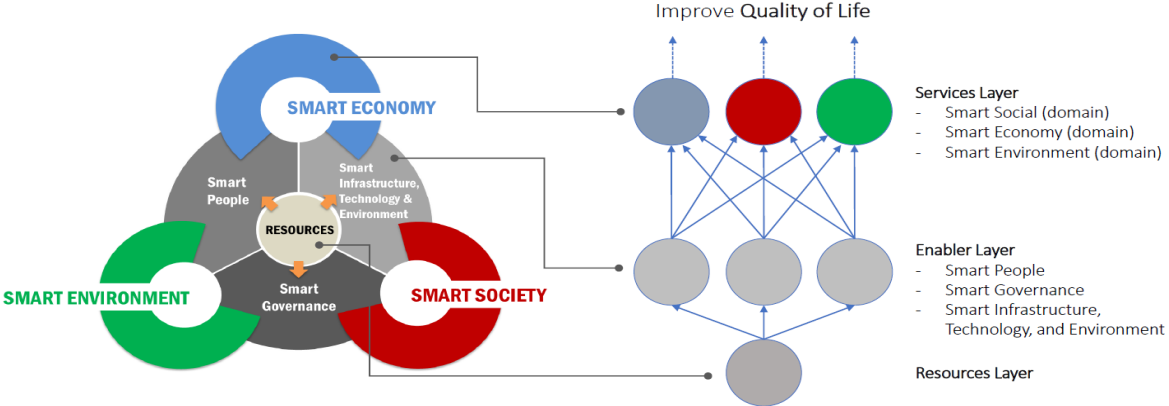
[11] Garuda is Indonesia's national emblem, or coat of arms originated from the mythological big bird 'Garuda' as the vehicle of Hindu's God Khrisna. Garuda symbolizes courage, knowledge, wisdom, power, and loyalty. The Garuda owns a shield in his chest containing the symbol of Pancasila, the five principles of national ideology. The national slogan of *Bhinneka Tunggal Ika*, loosely translated as 'Unity in Diversity' written in the scrolled ribbon, was gripped by the Garuda's claws. The name of Garuda indicates the idiosyncratic smart cities in Indonesia that distinguish from smart cities mainstream.

[12] Other researches on smart city readiness as the foreground conceptual framework to assess smart city development have burgeoned from city's level (Mahesa, Yudoko and Anggoro, 2019) to the city administration level (Pratama and Imawan, 2019, 2020).

Source: (Kemenkominfo, 2017, p. 11)

There were also studies on real-life experiences of Indonesian smart cities. This stream of researches delves into micro-analysis that emphasizes on actor interactions and social practices. During the decision-making phase, researchers argue that interaction between smart city actors matters in smart city planning, design, and implementation (Mayangsari and Novani, 2015; Offenhuber, 2019). A study conducted by Mayangsari & Novani (2015) reports a multistakeholder co-creation experience in Bandung smart city planning. From the service science perspective, they analyze how the interaction between actors shapes the process of urban planning in the context of smart city development.

Their analysis highlights a conceptual synthesis locating actors into their role and value proposition within smart city service provision (Mayangsari and Novani, 2015, p. 318). First, local political authorities, including the city mayor and the smart city committee, act as enabling actors dealing with political support and legitimacy. Second, the role of the provider is needed to create and distribute knowledge and innovation. Local government bureaucracy, universities, research institutes, and professionals may take part as the provider. Third, utilizers such as IT companies and business firms are those who create the product and services. Lastly, citizens can be categorized as users

who use the services and participate in the smart city experimentation. Their conclusion suggests that co-creation can be attained through interactive interactions among smart city actors.

The actor's interactions also shape the implementation of smart city projects. A recent study of the design in urban platforms in two Indonesian cities, Surabaya and Jakarta, by Offenhuber (2019) reveals that smart city services change considerably during their operationalization. What he means an urban platform is an information system that allows collecting, processing, storing, and distributing urban data and encompasses technical infrastructure, process, people, and government bureaucracy arrangements. Improvisation and informality have been a prominent feature for (smart) cities in the Global South. These are in parallel with their contextual setting of rapid urbanization, weaker institutions, a lack of resources, and poorer public services (Offenhuber, 2019, p. 1565). He also found that the smart city projects have been earmarked by 'bricolage' and improvisation as the interactions between platform administrators and citizens (re)shaped the social practices. According to his findings, the bricolage and improvisation in Jakarta and Surabaya Smart City entail conversations between actors and the material world. The infrastructure-oriented and citizen-oriented platforms have been adjusted and adapted through improvisational practices.

For instance, through Jakarta Smart City (JSC), Jakarta utilizes Qlue[13], as one of the best-known projects that facilitates citizen feedback and public complaint. Citizens can report inconveniences and other infrastructural failures from their smartphones by attaching photos or videos. Qlue is a mobile application system through which the Jakarta administration reaches out to its citizens and responds to their reports. Since the project's inception, the developer has constantly been testing, experimenting, monitoring, and evaluating user behavior; thus, Qlue changes from time to time, especially in terms of design and user interface. It adapts to the local conditions and meets citizens' needs. Another example of an urban improvisational platform can be found in mobile

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[13] Qlue app was developed by PT. Qlue Performa Indonesia, a private tech start-up companies who work with JSC since 2014. The company expands its businesses to smart enterprises and smart city services utilizing AI and IOT. In 2019, it cooperates with 40 provinces, cities, and regents In Indonesia (Qlue.id, 2022). During the Ahok's administration, Qlue apps serves as the tools to enhance both internal and external accountability by providing a quick response for public complains and facilitating performance measurement for bureaucracy through Key Performance Indicators (Offenhuber, 2019, p. 1575).

applications named Matakota[14] from the city of Surabaya. The Matakota facilitates Surabaya citizens to report public issues. The report can be categorized into crime, disaster, fire, traffic, child protection, and social issues in this mobile app. Similar to Qlue, Matakota has also changed and adapted to several adjustments, especially its design and web platform.

From both case studies, he argues that the technocratic design of the platform regime does not exist in reality; however, the roles of citizens and other beneficiaries are essential in designing urban platforms. The improvisation of the urban platform is contributed by interactions among individuals, in this case, various stakeholders, including city bureaucrats, mobile-app administrators, designers, and citizens as the users. Offenhuber's analysis (2019) implies that smart city development is actually the product of smart city actors' interactions. It signifies the importance of assemblage of the technical and non-technical dimension of smart cities in which actor interactions and negotiations shape the (re) make of urban platform as one of the smart city projects.

The above study details the argument on smart city applications as design practices. It highlights the improvisation and change process of technicalities in developing urban platforms. However, analysis related to the implementation dynamics and the functionality of the urban platform is lacking. In this sense, the multiple case studies narrowly capture the interplay between actors and design. The policy implications and consequences in implementing such urban platforms have not been addressed. To better understand whether the smart city initiatives meet policy goals and contribute to better urban life, researchers need to investigate smart city actors' experiences with smart city development projects, addressing the implementation dynamics in the broader socio-political dimensions.

2.3 Indonesian Smart City Programs and Assessments

In practice, implementing smart city initiatives in Indonesia is incorporated into the regional and local development planning agenda. According to the Indonesian local government system, local governments in Indonesia are given the authority by the central

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[14] Matakota was developed by Natek Studio. It is different with Qlue in term of the management of application since Matakota a community-based apps but collaborates with local government. (matakota.id)

government to plan their development strategies[15]. In order to be accommodated and funded as regional development projects, smart city initiatives should be officially legalized and governed by regional authorities[16]. The planning agenda known as RPJMD, a development planning platform that guides provincials, regencies, and cities to formulate development policies for the next five years of development. Smart city programs should be included in the policy agenda (kebijakan) regarding smart city initiatives in the local planning document.

Normatively, the initiation of smart city development involves various actors during the urban planning process. According to the new legislation on regional autonomy and fiscal decentralization, local governments should involve various development actors, including citizens, private sectors and industries, Non-Governmental Organizations (NGOs), community and professional organizations, and universities. This configuration consists of networks of actors, including the private sector, public sector, academia, civic society, and entrepreneurs who provide intellectual, economic, and social-democratic capital known as the Penta helix model (Calzada, 2018, p. 291).

The *Musyawarah Perencanaan Pembangunan* (*Musrenbang*), loosely translated as the development planning forum, is the mechanism through which actors deliberatively interact and decide development priorities in the multi-level governance system[17]. It can be regarded as a participatory process in the development mandated by Law No.25 Year 2004 as the foundation of Indonesia's development planning process. The forum is administered from the village (tier 1), sub-district (tier 2), regency or city (tier 3), province (tier 4), and national level (tier 5). In the case of smart city development, the decision-making process is held to the regency/city level (tier 3) through which the city governments administer bureaucratic mechanisms in the local executive-legislative forum. This involves the Regional House of Representatives or the City Legislative Council (DPRD). The phase serves as a political legitimation; thus, it is ready for legalization.

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[15] Since 1999, Indonesia has shifted its government system from centralization to decentralization (local autonomy). The Decentralization Law has been revised many times since then and now the local autonomy is regulated by Law number 9 Year 2015.

[16] The Indonesian local government system consists of the executive and legislative bodies. Governor leads the executive body at the provincial level and mayor or regents in regency/city level, while Regional House of Representatives or *Dewan Perwakilan Rakyat Daerah* (DPRD) in either provinces or regencies/cities act as legislative role. In day-to-day administration, both are the local authority in the Indonesian local government system.

[17] On the one hand, *Musrenbang* may facilitate the bottom-up process of development planning (Jayasinghe et al., 2020). One the other hand, some of the empirical studies convey Musrenbang's Achilles' heel such as administrative burden, unbalance power relations, unsupported infrastructure for knowledge exchange and learning processes (Akbar et al., 2020, pp. 250–253).

Once smart city initiatives have been legalized as local development programs, the strategic policy is cascaded into annual programs (*program pembangunan*) called Local Government Development Planning/*Rencana Pembangunan Pemerintah Daerah (RKPD)*. This document elaborates the policies into practical strategies and operationalizations of programs. These can be categorized as policy formulation and planning involving policymakers (Mayor and DPRD) facilitated technocratically by Bappeda. The operational planning of the programs is then elaborated in detail as development projects. At this point, smart city projects are executable. The figure below illustrates the smart city development planning architecture according to local autonomy regulations and the national development planning system (Law number 25 Year 2004 and its derivative regulations).

Figure 4 Indonesia's Smart City Development Planning Architecture
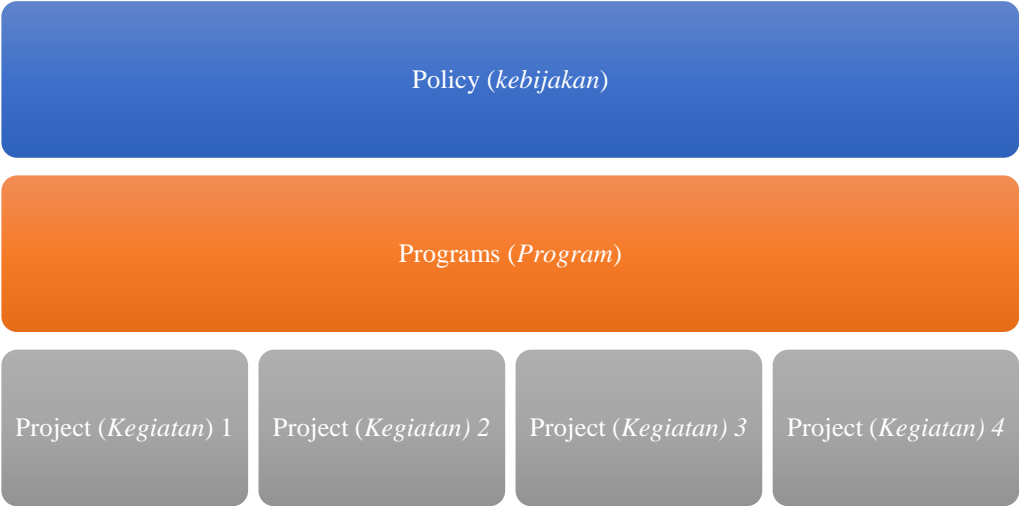
<div align="right">Source: Author</div>

As a manifestation of local government policy, the execution of smart city projects is worth scrutinizing. Assessment can be determined from both internal and external bureaucracy. Internally, within the framework of the performance management system, the Indonesian government stipulates that every government agency reports its performance through the Government Agency Performance Accountability Report (*Laporan Akuntabilitas Kinerja Instansi Pemerintah/LAKIP*). The Indonesian performance measurement system is based on the New Public Management (NPM) bureaucratic reform emphasizing managerialism. In practice, oversights on outputs, budget, and financial attributes are evident through the use of Key Performance Indicator (KPI) and cash-based reporting system, which, in turn, lead to administrative-based reports and formalizations (Harun *et al.*, 2019, p. 88).

To externally evaluate smart city performance, some assessment frameworks have been introduced, such as the smart city ranking, known as RKCI (Supangkat, 2015) and Dataset on Indonesian Smart Sustainable City (Mahesa, Yudoko and Anggoro, 2019). These assessments highlight the administrative data such as digital and public service infrastructures (availability of IT system, road access, and transport system), city supra-structure (e.g., regulations), and quality of human capital and government quality (e.g., level of education, human development index, etcetera) as their main indicators. Output-based assessments also do not take into account the perspectives of citizens on smart city development projects, as they neglect citizen experiences during the development of smart cities. In this case, the assessments are solely determined by the (technical) outputs, as well as macro indicators of urban developments. Whether such performances are the actual outcomes of smart cities' programs is worth questioning. For example, the quality of human capital (measured by the level of education and human development index) is possibly caused by other factors beyond smart city development projects.

Figure 5 Internal and external assessment
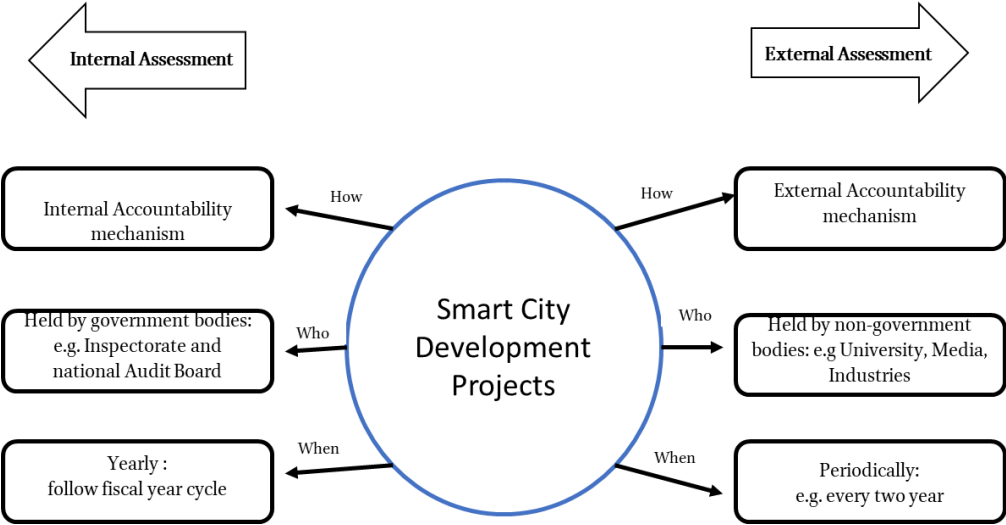
Source: Author

As such, recent smart city assessments are mostly undertaken from the rational-positivistic perspectives, relying on the linear progression of policy cycles and technocratic approaches. These may limit the assessment of its 'surface' achievement and fails to address the realities of smart city development on the ground. Following Hartley et al (2019), therefore, the rational-based-policy theories are not relevant for the analysis

of smart city developments as policy processes situated in a city context characterized by fuzziness and complexities.

In the context of developing country, Fromhold-Eisebith and Eisebith (2019) illuminated the development of smart cities as a continuous process rather than a finite product. It places emphasis on the transformative and institutional changes that are necessary for its progress. It undertakes a critical examination of the predicaments of implementation while acknowledging the positive changes that have been established. The findings of their fieldwork reveal a coexistence of positive evolutionary process characteristics and implementation deficiencies. This consideration has been instituted to rectify the unjust comparison between developed and developing economies, taking into account the varying conditions and contextual factors that contribute to the success of smart cities. This perspective helps avert researchers from having horse goggles on when observing smart city development. Instead of viewing 'black and white' or success-failure dichotomy, the process perspective helps conceptually specify the ambivalent qualities in smart city development.

Thus, I argue that it is insufficient to assess smart city policy development projects using output-based criteria entrenched in institutional logic. The cause-and-effect hypothesis of implementing government interventions leads to an oversimplification of complex policy realities. Indeed, something may happen in the transition from policy formation to project implementation (Mollinga and Bhat, 2010). Furthermore, the rational model tends to neglect the role of human agency in the development process. Smart city actors have their own agency to influence the ways in which policies are executed in the real world. This leads to the situation what Long (2001) calls as people-less in development since it concentrates to the driving force of policy success and ignores the human agency and social differences in the development projects. Thus, it fails to understand the dynamic nature of public policy manifested in government interventions and development practices.

2.4 A Conceptual Framework: Smart City Development as Multiple Social Interface

The conceptual framework not only helps to elaborate a set of concepts that need to be investigated in research, but it also provides initial analytical structures to phenomena being studied. Following Maxwell (2013) and Miles et al (2014), I specify a conceptual

framework as an underlying assumptions, ideas, theories, and expectations to understand social phenomena. The framework consists of interlinked concepts that help to better understand social reality through interpretative approaches (Jabareen, 2009, p. 51). Investigating smart city development projects as a manifestation of urban development policy requires an analytical and theoretical lens that addresses the complexity of development processes. A conceptual framework helps to analyze the dynamics of smart city development grounded on smart city actors' lived experiences.

In constructing the conceptual framework, I draw upon the development sociology theory of the social interface framework (Long, 2001, 2015) and the multiple governance approach (Hupe & Hill, 2006). Widely applied in rural development and policy making (Rogge, Dessein and Verhoeve, 2013), the social interface framework has its merit to be applied in smart city development research, as it entails policies and programs as modes of government interventions. The multiple governance approach provides a reference for analytical sites that evades simplifying the stages model in the policy process theory.

In the next section, I will evaluate policy process theories before elucidating the multiple governance approach and social interface framework as the building blocks of the framework. I then highlight the intellectual origins, theoretical dimensions, and their application in research. It is then followed by the construction of the framework that incorporates both concepts and synthesizes primary dimensions. Finally, I build the integrative framework explaining the dynamics of smart city development.

Smart City Development as Policy Process: A Multiple Governance Approach

Public policies are prerequisite in fostering smart cities (Meijer and Bolívar, 2016; Ruhlandt, 2018, p. 3). Building smart cities in Indonesia and elsewhere is based on political decisions, manifested in government policies and development programs. While technological innovation plays its role as a tool, policies on smart city initiatives hold political legitimacies by outlining the objectives, allocating resources, prioritizing areas and sector implementation, providing guidelines, and legalizing smart city development approaches. Therefore, developing smart cities is highly political and deeply rooted in a contextual administrative practice.

Karnoven et al (2019) and Nam & Pardo (2011) underscore the need for policy innovations to drive government initiatives toward smart cities. According to them, the main challenge is integrating policy ideas into practice, including the challenge of coordinating and bringing various stakeholders into a collective agreement. In addition,

Tomor et al (2019, p. 14) accentuate the vital role of public policy by arguing that the policy domain is one of the essential factors in governing a smart city, especially how it allows collaboration between citizens and government. Simply put, policymaking matters in integrating city actors in order to realize smart city development agenda. It leads to collective actions on how smart city actors plan, implement, and evaluate smart city initiatives.

Addressing the prominence of public policy in smart city development, I track the literature on policy process to better understand how the adoption and implementation of smart city policies can be analyzed by paying attention to the interaction of smart city actors. What I mean by policy process follows the logic of the process approach, addressing the activities to which policies are designed and implemented. It integrates politics, policy, and administration (Peters and Pierre, 2006, p. 6), rather than a process involving 'a time span of a decade or more' (Sabatier, 2007, p. 4) or 'overtime' perspective (Weible, 2017, p. 1). With this in mind, the policy process as a framework can be employed not only for the policies that have been implemented for decades, but also for policies at the nascent stage.

Classical policy process theory tends to break policy analysis into stages, the so-called stages model or policy cycle. The stages model includes policy formulation, implementation, evaluation, and termination. Harold Laswell's policy orientation initiated the instigation of the stages model in the 1950's, highlighting the chronological order of policymaking (Parsons, 1995, p. xvi). These five stages in the policy process, including agenda setting, formulation, decision making, implementation, and evaluation, are highly applied in the policy process literature (Howlett and Giest, 2015, p. 291) and, to some extent, remains a useful heuristic framework (Weible, 2017, p. 4).

The functionality of the stages model may ease policy analysis involving decisions that determine and predict actions. The rationale for dividing policymaking and program execution was rooted in Woodrow Wilson's politics-administration dichotomy (Overeem, 2017, p. 19). Here, the stage model can be regarded as the heuristic archetype rather than the model or conceptual framework, since it does not have any causal explanation power in understanding policy realities. However, it should be noted that the stages model can also mislead if researchers only concentrate on one stage (deLeon, 1999), thus ignoring other stages.

Figure 6 The Stages Model
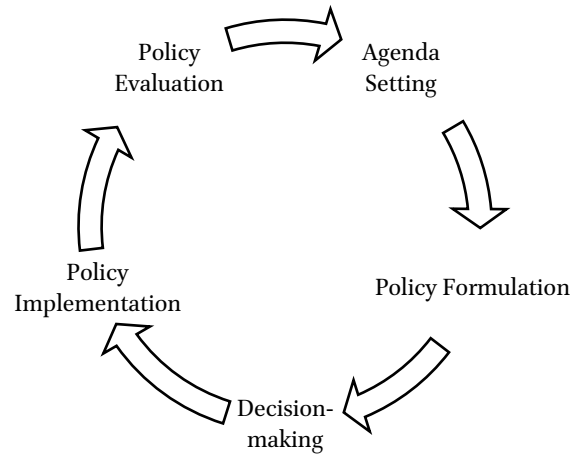
Source: Author adapted from Howlett & Giest, (2015, pp. 289–291)

Contrary to the separation of politics and administration, Waldo & Hugh (2017) argue that government activities could not be separated from the political dimensions. With this stance, there is a disagreement with the stages model for generalizing and simplifying real policy complexities and neglecting the dynamic interactions between politics and policy in real-world experiences (Cairney, 2012; John, 2012). The work of Lipsky (1980) that policy-making happens not only in the legislative process, but it can operate at the street-level bureaucracy, for instance, has falsified the view of a chronological and tidiness of the policy process. Other critics highlight the top-down and legalistic policy analysis approach, lack of empirical tools, and temporal unit restrictions on each cycle (Hjern & Hull, 1982; Sabatier & Jenkin-Smith, 1993). In an Indonesian context, for instance, the policy cycle model is not applicable in the real-world policy. Drawing from six vignettes of policy-making, each policy stage did not flow in a linear way, instead it overlaps and intertwines to each other (Blomkamp *et al.*, 2017).

These weaknesses have prompted policy researchers to formulate alternative models and theoretical frameworks to approach the realities of the policy process. New theoretical frameworks emerge in addressing the incompatibility of the stages model. Weible & Sabatier, (2018) compile the alternative approaches beyond the stages model consisting of Multiple Streams Framework (MSF) (Herweg, Zahariadis and Zohlnhöfer, 2017), Punctuated Equilibrium Theory (PET) (Baumgardner, Jones and Mortensen, 2017), Policy Feedback Theory (Mettler and SoRelle, 2017), The Advocacy Coalition Framework (ACF) (Jenkin-Smith *et al.*, 2017), The Narrative Policy Framework (NPF) (Shanahan *et al.*, 2017), The Institutional Analysis and Development (IAD) and Social Ecological System (SES)(Schlager and Cox, 2017), and Innovation and Diffusion in Policy

Research (Berry and Berry, 2017). These frameworks provide analytical vehicles for understanding the process of policies, and they have their own philosophical background and assumptions. For instance, the Multiple Streams is based on 'garbage can model' (Cohen et al., 1972), while, the IAD and SES framework is developed from the institutional logic that argues institutions influence the behavior of individuals in the policy process. These models, as analytical instruments, consist of a set of (rigid) interconnected and causal variables and hypotheses, thus, prone to predetermined conceptual consideration (Heikkila and Cairney, 2017, p. 309).

Applying these frameworks in analyzing policy process bring their own strengths and weaknesses. For instance, the ACF relatively gives attention to the broader social conditions, policy actor interests, conflicts, and learning processes. However, its assumption that policy actors are rational and motivated solely by their beliefs and values has been criticized. Despite addressing implementation complexity, however, their applications and methodological rationalities are more suitable for analyzing policy changes over relatively long periods (Weible et al., 2019). The idea of policy change and constraint from the punctuated equilibrium model is beneficial in explaining policy stability and changes, but, it has less methodological clarity.

Systematically, Schlager & Blomquist (1995) identified that model beyond stages model can be categorized into three approaches: institutional rational choice approach, structural approach, and advocacy coalition approach. Each of these approaches has not completely addressed the process of policy making and implementation. The institutional approach emphasizes problem definition, policy formulation, and evaluation. The structural approach accentuates on policy adoption, while advocacy coalition puts emphasis on problem definition, policy formulation, adoption, and evaluation (Schlager and Blomquist, 1995, p. 659).

Table 1 Non-Stages Policy Process Theories Comparison

	Institutional approach	**Structural approach**	**Actor/Coalition approach**
Cluster of theories	IAD, Innovation and Diffusion	MSF, PTE	ACF, NPF
Basic assumption	Rational Choice	Bounded rationality	Coalition and interests
The interlinked-causal relationship between concept variables	Yes	Yes	yes

Focus of Investigation	problem definition, policy formulation, and evaluation	policy adoption	problem definition, policy formulation, adoption, and evaluation
Time frame	Long and short term	Long term	Long term

Synthesized from (Schlager and Blomquist, 1995; Heikkila and Cairney, 2017; Weible, 2017).

To reconcile between the stages model and non-stages model, Hupe & Hill (2006) propose the notion of 'general map' as an alternative terminology to the definitional debate of theoretical framework and model. They acknowledge the expediency of the stages model and advocate its function as a 'heuristic' tool. However, at the same time, they alert the misconception of the stages model, in which policy analysts sometimes treat each process as a separate activity. Drawing from the IAD framework (Ostrom, 1999) and the rise of governance terminology (Pierre and Peters, 2000; Kooiman, 2003), they developed an alternative policy process heuristic, labeled as multiple governance approach. The approach puts governance perspective into the policy process to accommodate the key actors and their actions during policy-making and implementation. The idea of governance is the effort to induce and bring all actors beyond the state into the policy process. In this sense, the approach provides room for those acting as governing actors (whether public or private). Therefore, it focuses the analysis on governing as an action rather than government as an organization.

The multiple governance approach offers a contextual base in understanding the policy process from the actor's perspective. It consists a set of concepts: actors, activities, action situations, and administrative layers (Hupe & Hill, 2006, p. 21). The approach acknowledges actors and their activities situated in three action levels. Modifying Ostrom's IAD, (1999), they label action levels as *trias gubernandi* or 'trinity of governing' consisting of constitutive (structure-oriented activities), directive (content-oriented activities), and operational level (process-oriented activities)(Hill and Hupe, 2014, p. 126). These levels can be observed at any administrative layer (system, organization, and individual) in which one action level is not necessarily confined to a specific administrative layer. Thus, it gives more flexibility to analyze actors and their action situations empirically.

Constitutive governance can be regarded as the institutional design of policy; thus, it establishes the structure through which institutions, values, and governing bodies are arranged (Hupe & Edwards, 2012, p. 12). Other action levels give attention to the policy content that directs the decision-making process and details policy goals or outcomes. The level of this activity is called directive governance. The last action level is operational governance, which concerns the actual management of the activities to achieve policy objectives (Hupe & Edwards, 2012, p. 13). Unlike the institutional rational choice approach, structural approach, and advocacy coalition approach containing predetermined interconnected (causal) variables, the multiple governance approach provides flexibility to choose the guiding theoretical consideration and the unit of analysis. Therefore, this approach opposes the generalization of the theoretical framework in policy research and accommodates 'localized' theory formation (Hupe & Hill, 2006, p. 25).

I find it more apt to frame smart city development as policy process from the multiple governance perspective since it acknowledges policy actors (beyond government bodies) and their activities in a given politico-administrative context. At the same time, I avoid simplifying the sequential-stages model of the policy process. In addition, it serves as a level-based analysis in observing smart city development as constitutive governance, directive governance, and operational governance with the flexibility to integrate other theories within the approach. Instead of stages, multiple governance framework vanguards the level of analysis in which governance arrangements interact within the policy sectors.

Smart city development can be situated as constitutive governance when policy actors initiate the smart city approach and set the structural arrangement for the urban development policy. The directive governance can be manifested as smart city development programs through which administrative direction, goal setting endeavors and guidance for mobilization of resources. While operational governance relates to the process through which smart city actors interact in executing smart city projects. The multiple governance approach provides a scaffold basis of the analytical level and advice to link each stage of the policy process as overlapping and interconnecting policy activities.

Planned Intervention and the Social Interface

In many developments praxis, policy scholars tend to scrutinize how public policies, as government interventions, are operationalized in real life. Thus, they concentrate on scrutinizing how policy actors execute the collective decisions through which political authorities set the development agenda. In the discussion of social and cultural change, these phenomena can be regarded as planned interventions, defined as the executions of specific plans with the expected outcomes (Long, 2001, p. 25). In this sense, government interventions can be understood as evolving social practices and struggle in given time and space dimensions, thus characterized by dynamics and complexities (Long, 2001, p. 33). Most public policy implementation theories acknowledge that policy implementation may differ from the policy written in the paper (Hupe, 2011; Hupe & Hill, 2016). However, the explications addressing how implementations refract from the initial objectives sometimes remain unexplained due to its emphasis on either success or failure valuation.

For instance, the top-down policy implementation approach is strongly influenced by the legitimacy, hierarchical process, and policy-administration dichotomy (Bardach, 1977; Mazmanian and Sabatier, 1983). This approach uses deductive, linear-cyclical reasoning to evaluate development programs' implementation from the rational point of view. One of the most obvious examples in the area of smart city development policy is the use of surveys and quantitative indicators to assess the implementation of smart cities and rate them as awards. The generalization of finding across cities and projects and the assumption of direct causality of smart initiatives on urban quality of life correspond to the structural approach and institutional hegemony. The indices and rating-based evaluation, however, have some weaknesses e.g. context sensitivity, low feasibility, and uncertainty management criteria (Sharifi, 2019, p. 1269), ignoring local context, and disengaging stakeholders and the implementation process (Patrão, Moura and de Almeida, 2020, p. 1126).

Contrary to that, bottom-up implementation analysis has emerged criticizing the technocratic and dominant administrative process from the top-down approaches. Developed from the notion of street-level bureaucracy coined by Lipsky (1980), the implementation theorists challenge the normative views of policies in which street-level bureaucrats have a pivotal role in shaping public policies through autonomy and discretions. However, bottom-up implementation research has also been questioned

because it exaggerates the street-level autonomy of government officials (Schofield, 2001).

To balance both extremes, a hybrid model of policy implementation was proposed. One of the most influential frameworks so-called integrative implementation model reconciles the bottom-up and top-down perspectives in policy implementation (Winter, 2015, p. 1158) as a combination of top-down and bottom-up approaches that still inherit drawbacks from both. What makes different is that it attempts to reach more rigorous research methodologies and techniques such as longitudinal studies and multiple case studies (Nilsen *et al.*, 2013, p. 3). Other contemporary approaches, such as The Strategic Action Field Framework, give attention to the source of authority, social skills, and exogenous shock as the drivers of implementation dynamics (Moulton and Sandfort, 2017).

Despite accommodating both agency and structure of social system, however, it limits the attention toward policy fields, organization, and the frontlines as the scale of analysis. Also, it specifically addresses the program implementation from the public service intervention. In this regard, it seems that the major attention is given to the executors and the providers of public services (mainly public or private bodies in the form of organization, and the frontlines) and less consideration to the citizens as service users and beneficiaries.

Table 2 Policy Implementation Approaches and Their Strengths and Weaknesses

Approach	Strength	Weakness	Commonality
Top-down (Bardach, 1977; Mazmanian and Sabatier, 1983)	prioritize clear policy content and offer generalization of pattern (Matland, 1995, p. 147)	simplifying the course of politics and policy in the real-world phenomena (Cairney, 2012; John, 2012)	
bottom-up analysis (Lipsky, 1980, 2010)	acknowledging the discretion of street level bureaucrats	exaggerates street level autonomy of government officials (Schofield, 2001)	They often fail to appreciate human agency and tend to perceive citizen as a passive beneficiary of the policy implementation.
Hybrid/Integrated model (Winter, 2015)	offer varieties of methodological innovations (Nilsen *et al.*, 2013)	inherit both bottom-up and top-down weakness (Nilsen *et al.*, 2013, p. 3)	
Contemporary approach e.g. The	accommodating both agency and	Emphasis on public service intervention	

| Strategic Action Field Framework(Moulton and Sandfort, 2017) | structure of social system | and service providers |

Reviewing the mentioned implementation theories, one commonality appears that they often fail to appreciate human agency and tend to perceive citizens, communities, and target groups as passive beneficiaries in the implementation processes. In researching development projects, scholars from public policy disciplines call for new insights and alternative approaches to addressing some drawbacks of previous policy implementation theories (Schofield, 2001). Also, there is a need for interdisciplinary involvement from other bodies of knowledge to approach the real world of public policy (Nilsen *et al.*, 2013).

I find it useful to consider the concept of social interface proposed by Norman Long (2001). Long (2001, p. 10) opposes the linear logic of public policy that considers development projects as a mechanical procedure from policy to implementation to outcomes. Instead, he deconstructs the notion of intervention as an *'on-going, socially constructed, negotiated, experiential and meaning-creating process'* (Long, 2001, p. 25). Seeing development projects through such lenses can capture the development projects' implementation dynamics from the actors' perspective.

Drawing from the empirical experiences, Long defines social interface as *'a critical point of intersection between life worlds, social fields or levels of social organization where social discontinuities, based upon discrepancies in values, interest, knowledge and power are most likely to be located"* (Long, 2001, p. 243). This framework operates from the perspective of development actors. His empirical study on the dilemma of extensionists in Guadalajara, Mexico revealed social interface in agricultural extension work. The extensionists attempted to reconcile differing interests and cultural views between peasants. The government intervention faced conflicting social worlds in which different actors developed their own understanding in regards the agricultural program (Long, 2001, p. 83). Researchers investigate how social actors are interlocked into an 'arena' or 'field' where various interests, meanings, knowledge, legitimacies, and controls associated with different modes of human agency are intertwined. This also means that the development research should focus on the active roles of development actors in shaping social order (and change). By focusing on human agency and their interactions,

human well-being is positioned at the central tenet of development policies (Antweiler and Hornidge, 2012).

The root of the actor-oriented approach can be tracked from social constructivism theories, especially social constructions of reality (Berger & Luckmann, 1966), phenomenology (Schutz, 1967), and ethnomethodology (Garfinkel, 1967). The basic assumption of these theoretical traditions is that social reality is made from multiple constructed realities from social actors. Thus, the actor-oriented approach anchors the basic assumption of development processes on the idea that different social forms exist under the same or similar social circumstances (Long, 2015, p. 37). In regards to addressing the drawbacks of a simple cause-and-effect development project, the agency of people is considered. As Long (2015, p. 38) defines agency constructed on Giddens (1984) as "*…the knowledgeability, capability, and social embedded-ness associated with acts of doing…*". In the context of development, the target groups of the development project are acknowledged as active social actors who own the agency rather than passive beneficiaries. The same holds for other actors such as bureaucrats, private sectors, non-government organizations, universities, and industries. Thus, it rejects the linear assumption of development projects as planning-implementation outcomes *per se*.

Incorporating Social Interface and Multiple Governance Approach

Following Long (2001, p. 30), I view smart city development as a planned intervention, a multiple reality constituted by the discrepancy of interests and cultural perceptions followed by social and political struggles between smart city actors. As such, I conceptualize the framework as the multiple social interface of smart city development. In this framework, smart city development projects are conceptualized as social interfaces that operate in a multiple governance setting. The social interface perspective can address the limitations of rational-positivist policy approaches by acknowledging the active roles of citizens and their agency in smart city development.

The multiple governance approach scaffolds the level of analysis in which government interventions are implemented in the context of smart city development. Given Indonesia's policy-making practices and traditions, where bureaucrats influence decision-making process by drafting the laws, regulations, and guidelines (Blomkamp *et al.*, 2017, p. 19) beside actively managing the public budget and accounting (Datta et al., 2018, p. 19), the constitutive and directive governance becomes blurry. In this case, politicians and bureaucrats work together in the political and administrative realm to

formulate public policies. For this reason, I merge constitutive and directive governance, which represents the process of policy planning and formulation. To that end, I will focus on two levels of analysis named constitutive-directive governance and operational governance level.

Figure 7 A Conceptual Framework: Multiple Social Interface in Smart City Development
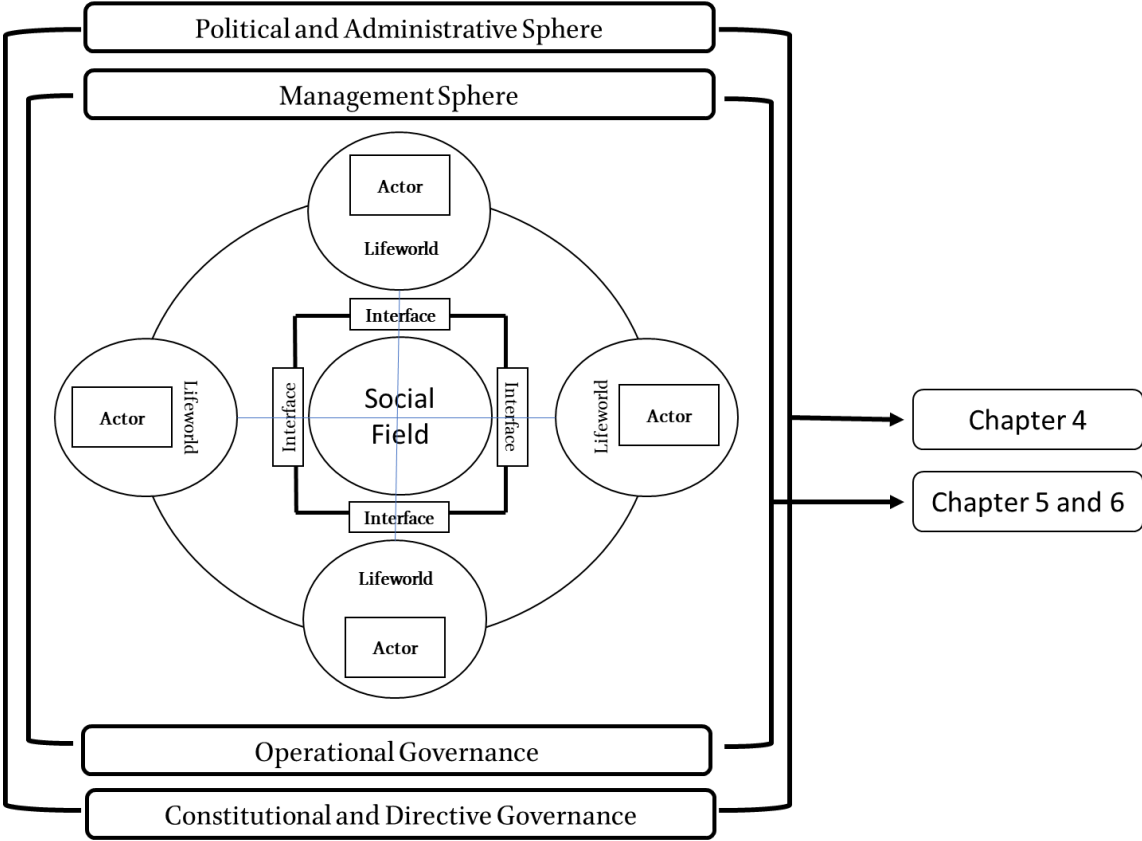
Source: Author

inspired by Hill & Hupe (2014; 2006) and Long (2001, 2015)

The framework employs primary concepts that help in analyzing the smart city development project in the research loci. These concepts include social actors, agency, multiple social interfaces, actor's life-worlds, and social fields.

Actors and Agency

To realize smart city actors, I adopt Long's (2001, p. 241) definition, which articulates social actors as social entities who own agency and may represent individuals, organizations, groups of individuals, and macro actors such as government or international organizations. This demarcation signifies the emergence of development

actors' coalitions and networks. It opposes the simple assumption that a group of actors has the same perception about a development project, and so do various groups. Thus, He advises looking closer at the coalition of actors who share a similar position in the development projects. Another important concept is agency which can be understood as '*knowledgeability, capability and social embeddedness associated with acts of doing (and reflecting).*'(Long, 2001, p. 240)*.* The agency that actors own, shapes the ways in which they act and interpret in the social interactions.

In the context of smart city development, there are various actors involved in the projects. Lisdorf (2020, pp. 8–13), for instance, categorizes smart city actors and identifies their interests and logic. The first group is individuals, defined as the people who engage with city life whether they live, work, or stay periodically in the cities. The individual actors can be residents whose primary interest is the performance of public services, the visitors who mainly expect the facility of urban mobility and infrastructure and civic activists who actively participate in the city development. The second actor is business communities who drive the wheel of the economy as well as contribute to city development through taxes. The third actor is vendors who supply smart city solutions. They include hardware vendors, software vendors, and system integrators. The next group deals with knowledge creation and research, including universities and research institutes. In the globalizing world, the organizations from supranational, national, non-government organizations, and philanthropies have also taken part in smart city development project. The last group, yet important, is government whether it is local, regional, or national. Governments are the actors who authorize urban development policies and thus own smart city development's political and administrative legitimacies.

Among the mentioned actors, smart cities in Asia are mostly characterized by government-led smart cities (Joo & Tan, 2020, p. 2). Either local or national government initiates smart city-based urban development. As the main initiator of Indonesian smart city initiatives, the mayor and his administrative apparatuses have significant authority in governing smart city projects (Pratama and Imawan, 2020). Given the lack of digital technology infrastructures and expertise, local governments need technologists and technology-based companies to design and execute smart city projects. In this sense, technology experts also play an essential role in project implementation. Many development case studies from developing countries have reported that despite the technology application, street-level bureaucrats who directly deal with citizens as the

primary beneficiaries are still involved in delivering services. Thus, development brokers and translators who connect policymakers and beneficiaries may emerge during the project executions (Lewis and Mosse, 2006; Berenschot, Hanani and Sambodho, 2018; Hönke and Müller, 2018).

To understand the dynamics of smart city development, it is helpful to conceptualize the actors and their relationships. In the context of Indonesia, government bureaucracy plays an important role as an implementing agency of development projects. Previous studies have revealed path dependency bequeathed by colonialism and Soeharto's authoritarian regime, which still influences everyday bureaucracy. The legacy of the previous era is the adherence to Indonesian bureaucracy characterized by a patrimonial system, gigantic organizations with rigid structures, slow in motion, rampant corruption, and inefficient attributes (Dwiyanto, 2017; Paskarina, 2017; van Klinken, 2018). To improve bureaucratic performance, national administrative reform has been introduced since 2000's (Wihantoro *et al.*, 2015). However, the intended impact is difficult to achieve.

According to Harun, Mir, Carter, & An (2019), this is due to the legacy of an authoritarian regime and the cultural ecology of Indonesian bureaucracy. Drawing from fieldwork in central and local governments, they found that the legacy of the previous regime contributes to the unintended outcomes of reform programs. Similarly, Turner, Prasojo, & Sumarwono (2019) analyze Indonesian bureaucracy from an ideal model of public administration perspective. They predict that Indonesia will not achieve "world class" public service by 2025 due to the administrative reform resistance resulting from patronages (Crouch, 1979; Aspinall, 2013) and old public administration types of bureaucracy embedded in the government system. These types are characterized by patron-client relations apparent in both central and local government (Blunt, Turner and Lindroth, 2012) and rule-based as well as hierarchical managerial systems of public service deliveries.

In empirical evidence, a study by Berenschot (2018) validates the patronage phenomena where civil servant-politician relations are set in a way that policy and administration are fluid in practice. This also elucidates the relationship between bureaucracy and elected politicians, which sometimes benefit both sides. Drawing from ethnographic fieldwork in Sumatra, he also reveals that bureaucrat's discretion on state resources hinders the bureaucratic reform from achieving merit-based bureaucracy, albeit in some cases, discretionary decision making from street level bureaucrats may

enhance efficiency (Kubo, 2010). To that end, patronage and Weberian public administration are the major characteristics of Indonesian bureaucracy. This typical characteristic has also shaped how smart city actors interact in network creations and how they shape coalitions.

Multiple Social Interface: The Intersection of Lifeworld and Social Fields

In understanding how the social interface works, I refer to the six key elements of the social interface framework (Long, 2015, pp. 41–43). Firstly, an interface can be regarded as the entity of relationships and intentionality that knit in the development projects. What Long (2015) emphasizes in this regard is the formation between actors or a coalition of actors. In the context of my research, the focus would be on the conditions by which smart city actors develop their continued interactions and networks over time; thus, the interface will be interlocking relationships and intentionality shaped by smart city development actors.

The second important point of the social interface is the possible condition of conflicts and negotiations. In this sense, the interface considers the differing values, interests, knowledge, and power relations that may drive different directions of social practices toward policy goals. Further, the development brokers or mediators emerge during the negotiation processes. In my research, the differing actors' perceptions may bring the pre-judgments of non-linear social realities, thus there is a possibility of conflicts and the opportunity for negotiations among actors. If this happens, certain social actors will act as negotiators.

The third point of the social interface deals with the contradictions of cultural paradigms, often so-called worldviews. The role of worldviews has been acknowledged in the policy process and implementation (Hillgren, Light and Strange, 2020). Regarding development projects, Long (2015, p. 42) suggests the investigation of the intertwined of different worldviews among actors and ideological oppositions to map the transformation of the interface in the development projects. How people see the world is sometimes shaped by the ways men live and encounter the surroundings. Thus, the interlinked between lifeworld and worldview is a complement in everyday lives (Allen, 2008, p. 9). *Lifeworlds are 'live in' and largely 'taken for granted' social world cent(e)ring on particular individual* (Long, 2001, p. 241).

As such, life worlds encompass actions, shape social interactions, and create meanings. This operates within certain spatial and through life histories. The

environment in which people live influences how they act. Thus, lifeworld results from individual interactions and experiences with any given space and time. In my research, the investigation of actors' lifeworld and how it shapes the way actors see the world may reveal the cultural repertoires. Thus, it is possible to identify the conditions under which meaning and worldviews are advocated during the smart city development projects.

The next element is the centrality of the knowledge process. It highlights the engagement of actors in the social world cognitively, emotionally, and organizationally. Since there are various definitions of knowledge depending on certain disciplinary and academic background, I refer knowledge as '*a cognitive and social construction that results from and is constantly shaped by the experiences encounters and discontinuities that emerge at the points of intersection between different actors' lifeworld* (Long, 2001, pp. 70–71)*. Knowledge is cognitively and socially constructed by actors' lived experiences, thus it is generated and constructed in relation to day-to-day social practices. Following Long (2001, p. 242), knowledge processes are based on the interaction of own or others' experiences and understanding, which constitutes a new base of understanding or knowledge construction. Furthermore, he argues that knowledge construction can be either constructive if it is the accumulative product of previous ideas, beliefs, and values or destructive if it is disassembling the existing frame of understanding (p.242).

Knowledge debates are not about the benefits in the development process, but rather address the types of knowledge and how development actors activate the knowledge process and the purpose to do so (Hornidge, 2012). The knowledge process implies the role of knowledge in shaping actors' perceptions toward development projects and how their everyday lives are affected by the projects. In many cases, the interplay of expert knowledge and everyday form of knowledge, so-called local knowledge, often surface. Local knowledge is a socio-cultural product gained from long-term social practices that are not isolated from everyday life; instead, they have both practical and social dimensions (Antweiler, 2012, p. 55). In my research, the interplay of expert knowledge from city bureaucrats, IT experts, urban planners, and smart city consultants versus local knowledge from citizens or target groups accounts for the narratives of the knowledge process as a product of dialogues, interactions, negotiations, and transformations of meaning.

Still related to knowledge, the fifth element of the social interface is acknowledging and giving attention to the discussion of power. From the perspective of the social

interface, it is known as power configuration. Long (2001 p. 242) explicates power configuration as the interlocking actors' involving the battle of value and meaning, thus, it deals with authorities and controls, dominations and sub-ordinations, competition, and distribution of resources. In many development projects, conflict between development actors often arises due to actors' struggle to accommodate their interests and acquire legitimacy to control development resources. Here, power not only means the ways in which certain parties control authority and resources but also involves the complex practices of social struggles and negotiations between development actors. Therefore, the power relation deals with what Long (2015, p. 43) calls as actor maneuvers.

The last key issue is that multiple discourses shape the interface. In the context of development practices, discourse is defined as '*the set of meaning, metaphors, representations, images, narratives and statements that advance a particular version of 'the truth' about specific objects, persons and events.'*(Long, 2001, p. 242)*.* Instead of the methodological sense, I posit discourse as how reality is constructed through language. Development projects involve dominant discourse, which promotes political standpoints and legitimacies. In my research, discourse helps in analyzing how actors make sense, mobilize, and struggle to fulfill their interests in the development project fields.

To better understand the entanglement of varied social forms and practices conceptualized by different actors, a notion of the social interface is beneficial to investigate the differing perspectives among actors in development projects based on the notion of lifeworld, interest, knowledge, and power (Long, 2001, 2015). Given the different social forms and statuses various actors take, there is a possibility of different preconceptions about smart city projects. The intersection of their life-words and social fields including actors' interests, knowledge and power relations will likely influence the ways in which smart city policies and programs are executed. What I mean by social fields is basically the arena of the development project in which actors interact, compete, and negotiate, and compromise as Long (2001, p. 241) states that social fields

> *"constitute 'open spaces' composed of distributions of heterogeneous elements (material resources, information, technologies, institutional components, discourses and sets of social relationships of various kinds) wherein no single ordering principle prevails. While the pattern of social relationships and the availability and distribution of resources allow for organisational possibilities, any order that does emerge within a social field is the result of the struggles, negotiations and accommodations that have taken place between the competing parties. In certain instances, especially in socio-*

ecological scenarios, the competing parties must also, of course, include animal and plant populations."

The elaboration of social interface may uncover the 'black box' of policy process by understanding actors' perceptions on smart city development projects, their organizing practices, and actors' maneuvers during projects implementations. In this sense, I can understand the implementation dynamics in shaping and reshaping meanings, social relationships, and dialogues among development actors. The interface perspective may also capture the discontinuities, conflicts, negotiations, and actors' struggles in attempts to accommodate their interests in smart city development projects.

The conceptual framework utilizes the social interface perspective to unravel the smart city policy-making and implementation dynamics in everyday life. When the development projects are introduced, the external conceptualization from the media, policy-makers, city government bureaucrats, technology experts, IT industries, academia, and other private sectors interact with the existing life worlds of target groups and social actors affected by the projects. The social interface is then formed as an intersection of lifeworld which allows the interplay of interest, knowledge and power transforming into a negotiated socio-political space.

I adopt some assumptions based on the cornerstones of the actor-oriented approach (Long, 2001, p. 240). Firstly, the investigation of development projects may better start from actor-defined issues, in this case, how actors interpret smart city development projects in their everyday lives. This is followed by acknowledging the social heterogeneity and multiple realities perceived by social actors. Secondly, it is also beneficial to identify the network of actors formed by social relationships involved in smart city development projects. This will help the researcher identify the actors' configuration within development projects as social fields or an arena where the interplay of life-worlds, interests, knowledge, and power occurs. Thirdly, I identify the specific actions and contestations especially how actors strategize the organizing process that include spectrum of cooperation and competition.

2.5 Chapter Summary

This chapter begins by arguing that a city not only constitutes a physical entity, but political, social, economic, and cultural dimensions are embedded in shaping urban life. This assumption precedes further supposition that any urban interventions entail

multidimensional aspects, including smart city initiatives. In this context, I highlight smart cities' social and political dimensions. Thus, I challenge the smart cities' apolitical and technological determinism as most technologists, IT companies, and technological-based researchers promote. Instead, I argue that smart cities are not politically vacuum nor socially isolated.

Techno-centrism often exemplifies the global narratives of smart cities, emphasizing technicalities as the core element of smart city development. This condition leads to depoliticized smart cities that rely on universal applications of technological advancement to realize the development of smart cities. Addressing this point of view, critics emerge questioning the pervasiveness of 'one-fit for all' promise and technological solutions in resolving urban challenges. In addition, smart cities seem to follow neo-liberal ideologies benefiting business and political elites. Akin to the global research trends, technological discourses dominate the Indonesian research fora with few insights from real-world experiences. Recent smart city policy-related researches and assessments are primarily undertaken from a rational-positivistic policy analysis via macro-quantitative indices, neglecting the microanalysis of implementation dynamics. This study fills this research gap by scrutinizing the dynamics of smart city project implementation grounded on the lived experiences of smart city actors.

I situate smart city development as policy process. It allows the investigation of smart city actors lived-experiences in smart city development. While rational policy theories fail to explain the 'black box' of implementation and neglect human agency in the development process, the concept of social interface and multiple governance approach illuminate the dynamics of smart city development. The framework provides an analytical vehicle that emphasizes the actors' agency and social interactions. It accentuates the interplay of actors' lifeworld and their social fields in which interest, knowledge, and power intertwine. To that end, I conceptualize smart city development as multiple social interface, as my guiding analytical agenda.

Chapter 3 Methodology

3.1 Philosophical Perspective

The philosophy of science shapes the research approach and guides the methodological directions the researcher takes. It also determines the scientific paradigm (Kuhn, 2012) and the epistemological framework that researchers employ to study social phenomena. The scientific paradigm includes basic assumptions, key issues, and research methods. This study follows the interpretive social science approach. The approach develops an understanding of social life derived from observations of people and interactions in everyday life settings. In defining interpretive social science, Neuman (2006, p. 104) underscores the importance of the systematic analysis of human interactions in their natural setting to understand how people (re)create their social world. Following this heuristic, my research was embedded in the genuine contextual setting in which social interactions take place.

Unlike positivists who perceive that the social world consists of a measurable reality, the present study adopted a constructivist perspective to understand social realities. It views the world as the existence of social facts created by the people. In other words, the reality is socially constructed in which it lies in the people's subjectivity and meaning-making through everyday interactions and experiences. This logic is in the same vein as the social constructivism theories (Berger & Luckmann, 1966; Garfinkel, 1967; Schutz, 1967). According to this theoretical tradition, people experience the world differently. Different social groups may experience the same or similar social event, but they often perceive different meanings and interpretations. In my study, different actors construct smart city development as different social realities and various experiences and meanings transpire. Researching the actors and their interactions may inform what really happens in smart city development from the perspective of people involved.

This study also acknowledges the human agency in shaping social reality. With this in mind, people use their free will and conscious decisions to address the circumstances in their daily routines. Their subjective assessment and their structural embedding co-constitute and influence how human being makes sense of their social reality and acts upon it (Neuman, 2006, p. 106). Another key issue relates to the role of common sense in the process of knowledge creation. For an interpretive study, people's everyday routine is useful as the crucial source of information enabling the understanding of social

phenomena. Following Schutz (1967), I assume that people use common sense as their practical actions to face day-to-day social interactions, known as natural attitude. This also means that common sense guides people in their daily lives, which matters to inform social phenomena. The above assumptions and key issues guide the technical aspects, including the selection of field sites, research design, data collection methods, and analysis.

3.2 Field Sites

To understand how smart city policy is put into practice, it is necessary to assess representative projects that have been executed within the Magelang smart city initiative. Perceiving smart city development as a multiple governance layer, this study focuses on strategic policy formulation and two featured smart city projects as ethnographic cases. In the discussion of the constitutive-directive governance, I investigate the emergence and the decision-making process leading to smart city policies and programs. For the operational governance level, I followed an idiographic theory-guided case selection. This approach allows me to reflect on the conceptual framework in selecting the event and social phenomena being researched.

As Levy (2008, p. 5) suggests, theory-guided case selection provides a better explanation since it enables a dialogue between the theory and evidence. The objective of idiographic theory-guided selection is to find the cases worth-studying that represent the social phenomena. In so doing, I oscillated the concept of the social interface as the primary theoretical consideration, and the characteristics of on-going smart city projects from 2015-2021 as the case (s) representing the smart city development in the real-world phenomena.

I organized a systematic case selection consisting of three chronological steps. Firstly, I identified the central concepts of the social interface that provide the criteria for case selection. As the concept of the social interface was drawn from the actor-oriented approach, it relates to various social actors' role and agency in shaping development projects. The concepts of lifeworld, social interest, knowledge process, and power configuration also define the multiple characteristics of social actors and their social settings. To that end, I argue that the apt cases require the involvement of various social actors that interact in the smart city projects. Referring to smart city actors (Lisdorf, 2020, pp. 8–13) and the vital role of development brokers in developing countries (Berenschot et al., 2018), the selected cases needed to involve various smart city actors. Smart city

actors include policy makers, city government officials, private sector representatives, street-level bureaucrats as development brokers, and citizens as beneficiaries of the projects. Additional actors include research institutes and supra-national organizations.

Secondly, I identified and mapped the ongoing smart city projects from 2015 to 2021. The Magelang City Balitbang reported 14 service themes derived from smart city projects spanning from 2015 to 2019. These include information technology infrastructure, human resource and IT governance, smart economy, education, industry and tourism, labor, security and disaster mitigation, health, transportation, administrative services, social and community, energy, spatial planning, and environment (Balitbang Kota Magelang, 2019). According to Magelang's Smart City Grand Design (Bappeda Kota Magelang, 2016; Diskominsta, 2019), the city government aims to strengthen the smart city infrastructure, especially using digital technologies.

The city of Magelang has implemented some smart programs such as a Traffic Management Center (TMC) and Auto E-City (Automatic Emergency Car Priority) based on Intelligent Transportation System (ITS) for traffic management, DATAGO for government data management system, and other digitized city services, including the Magelang smart mobile app, and smart health services for public hospital services. For instance, TMC provides audio information, which improves road users' compliance with traffic regulations, especially at traffic lights. This technology is integrated with the traffic management system as a sub-system of smart mobility. In 2021, there were 24 ongoing projects as derivatives of the smart city program in the City of Magelang (see Appendix 1).

In this study, I relate to the Indonesian perspective of smart city development that accentuates the notion of innovative solutions rather than high-technology applications *per se*. This conceptualization also applies in the city of Magelang, where smart city projects apply both IT-based and non-IT-based solutions. To that end, I could differentiate smart city projects according to the degree of involvement of IT and non-IT technologies. By involving these two types of projects, I may capture the smart city conceptualization perceived by the Magelang City government that comprehends smart city does not necessarily occupy advanced IT technologies.

The two steps above establish information that flows into the case selection process. I employed two criteria, drawing as the basis of case selection. Referring to the first and second steps, the case candidates can be modeled in a Cartesian diagram. The diagram

consists of the vertical axis considering the involvement of various actors and the horizontal axis considering the involvement of IT and non-IT technologies. Given both contexts and criteria, I develop a diagram to map and situate the most suitable project(s) as my ethnographic sites.

Figure 8 The City of Magelang Smart Initiative Mapping

Visualized by Author 2022
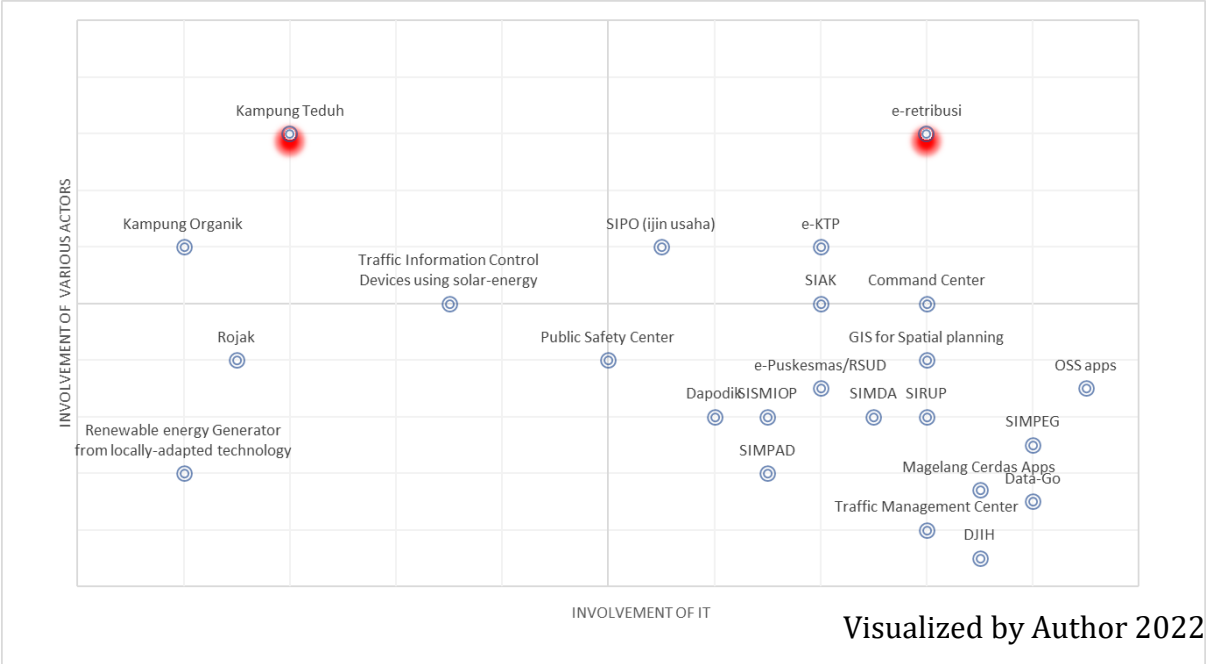
From the Magelang Smart City Project Map, the e-retribusi and *Kampung Teduh* projects are the most suitable compared to 22 other projects initiated by the Magelang City government. More detailed information on e-retribusi and Kampung Teduh can be found in Chapters 5 and 6. The decision to investigate these projects was not intended to do a comparative study, but rather both cases offer detailed and empirically rich examples for smart city project implementation dynamics. The decision to include both cases led to the multi-sited ethnography, which implies the effort to portrait a more holistic description of smart city projects executed by the Magelang City government. In addition, the multi-sited fieldwork also reflects the theoretical-based strategy (Nadai and Maeder, 2009, p. 245) to better understand the empirically grounded phenomena being studied.

The first ethnographic case is e-retribusi, a digital technology that facilitates the payment of traditional market levy. It aims to optimize city income, improve efficiency, and reduce fraud. The Office for Management of Revenue, Finance, and Assets (BPKAD) has initiated the project in 2019. In collaboration with a provincial government-owned bank named Central Java Bank [*Bank Jateng*], it allows small-scale merchants in the traditional market to pay their levy in a cashless manner using e-money. The system is

developed by an IT company named CV. Ekamatra Poligon. In practice, the Office of Industry and Trade (Disperindag) and its Technical Implementing Unit (UPTD) implement the project. In this sense, the *e-retribusi* project involves various actors, including government officers, business people, and citizens. Detailed information on the e-retribusi will be presented in Chapter 5. I conducted my fieldwork in Kebonpolo traditional market under the management of the UPTD Kebon Polo from 8 September 2020 to 30 January 2021[18].

The second case is the Kampung Teduh Project. The project refers to slum upgrading initiated by the Magelang City government which aims to transform slums into more livable neighborhoods. Most activities rely on locally-adapted technologies that can be applied in urban areas, such as urban agriculture, gardening, sanitation, and the improvement of health infrastructure. Various development actors participated in the project, including government agencies, NGOs, construction companies and extensionists such as sanitarian, agricultural extensionists, and fisheries extensionists. I conducted my fieldwork in Kampung Bogeman Wetan, the Urban Village of Panjang, the City of Magelang, from 1 February to 23 June 2021.

3.3 Research Design

I adopted an interpretive-qualitative approach grounded in observation and analysis of actors' interactions in everyday life. Therefore, I applied an ethnographic research strategy that relied on qualitative methodologies, primarily first-hand, field-based observations to understand smart city development as social phenomena. The justification for applying ethnography is twofold. First, in reference to the research inquiry that centers its discussion on the implementation dynamics, ethnography offers 'native's point of view and experiences of actors involved in smart city development in the research loci. By investigating the implementation dynamics from the actors' perspective, the 'black box' of the policy process could be unpacked. Second, the social interface framework, as the theoretical consideration, advises using ethnographic methods to systematically study development projects (Long, 2001, p. 14). An ethnographic strategy

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[18] The pilot project of *e-retribusi* was implemented in Cacaban market in the end of 2019. I then focused my study on Kebonpolo market since the inception of *e-retribusi* was just inaugurated by Mayor of Magelang City in Kebonpolo traditional market during my fieldwork.

is especially beneficial when the researcher investigates lifeworld, social actor interests, cultural values, knowledge processes, and power relations.

Investigating smart cities from an emic perspective provides alternative insights on how smart city actors engage with everyday life during the implementation of smart projects (Edge *et al.*, 2020). Despite its potential, the ethnographic study on smart cities has not been widely applied (see, for instance, Coletta, Heaphy, & Kitchin, 2019; Dameri & Ricciardi, 2015; Wang, 2017). As a typical activity of ethnography, the field-based investigations offer a clearer picture of smart city development by capturing the reality within its natural settings. Also, it enriches the understanding of smart city development from the city residents' experiences since it also captures how they make sense of the projects in their everyday life. I followed the ethnographic principles during my fieldwork which required research in a natural setting (in situ), the researcher directly involving the research object, and the development of an understanding of the social world of participants (Dewalt and Dewalt, 2002; Neuman, 2006; Madden, 2012).

As I decided to include multiple ethnographic cases, I conducted a multi-sited ethnography for about ten months, from 8 September 2020 to 23 June 2021. In this, I followed Marcus (1995, p. 97), who argues that understanding phenomena cannot only be conducted by relying on a single site. His argument has caused ethnographers to change their approaches and employ multiple cases of observations in their fieldwork (Falzon, 2009, p. 2; Coleman and von Hellermann, 2012, p. 4). However, by doing multi-sited ethnography, ethnographers have less time and resources for the fieldwork in each site. Therefore, doing multi-sited ethnographic studies indeed faces challenges, especially the risk of shallowness in understanding the different research sites. During my fieldwork, I experienced a lack of time and logistics to achieve data saturation. As such, there was a tendency to back and forth between sites to optimize my fieldwork period and harness available research resources.

To address this challenge, I avoided constantly shifting between the different sites, but instead conducted fieldwork over long uninterrupted periods at each site. This means that I conducted my first fieldwork in Kebonpolo traditional market from 8 September 2020 to 30 January 2021 and continued the second fieldwork in Kampung Bogeman Wetan from 1 February to 23 June 2021. With this strategy, I was able to give full attention

to the daily interaction and smart city actors' everyday life in both cases, without a doubt of being "sitting between two chairs."

Researcher as Observant Participator

I positioned myself as an 'observant participator' during my multi-sited ethnographic fieldwork. Here, I differentiated the notions of observant participator with participant-observer, referring to the extent to which ethnographers' involvement with the ethnographic objects (Seim, 2021, p. 1). Observant participator[19] is the label for a researcher as a participant who conducts observation during fieldwork. Thus, the activity is labeled as observant participation (Wilkinson, 2017) or 'embodied ethnography'(Hancock, 2018). In comparison, participant-observers are researchers who act as observers and conduct observation in their ethnographic work.

Both observant participator and participant-observer reflect the researcher's involvement to take part in people's everyday lives (Adler and Adler, 1987, p. 50). What makes a difference is the active participation and the researcher's status as a community member being studied. The former requires active engagements and membership status, whether official or unofficial, within the community, while the latter engage the world of research object, less involvement as community member but accentuate the role as observer.

Pragmatic considerations justified the position I took during my fieldwork. I did an internship in the UPTD at the Kebonpolo traditional market for about 4.5 months to observe the implementation of the *e-retribusi*. I was fortunate to have approval and authorization for an internship from the Magelang City government's Head of Disperindag. As an intern, I found some benefits that eased my investigation, especially more personal and intimate exposure to everyday activities. Since the project was aimed at optimizing city income and reducing fraud, the project execution is a relatively secretive and sensitive issue. To capture hidden activities and informal practices, it was beneficial and effective to enter the fieldwork as an intern in the e-retribusi project. At the beginning of my internship, I introduce myself as a researcher conducting a study in Kebon Polo traditional market. At first, the people at the field site seem awkward knowing

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[19] Observant participation should be distinguished from autoethnography in terms of researcher's focus on the self. While autoethnography focuses the study on the researcher's own life and personal experiences (Hancock, 2018, p. 156), observant participation tries to understand the 'outside' social phenomena by integrating the researcher's self as an insider or member of the community being studied.

my status as a researcher. After a few days, their awkwardness gradually disappeared, since I was able to explain my objectives while doing my internship. My residency status as a Magelang City resident has also smoothed my integration process within the community I studied.

The fieldwork in the Kampung Teduh project in Kampung Bogeman Wetan can also be considered as observant participation. I was in close contact with the Office of Housing and Settlement (Disperkim), the project's main implementing agency. The office then provided a reference to the Head of the urban village of Panjang and Head of Kampung Bogeman Wetan. Both are the community leaders at the research site. The former is the civil servant appointed by Magelang City mayor in the urban village office while the latter is the non-civil servant appointment and elected leader in the neighborhood level. As a result, I was accepted to Kampung Bogeman Wetan as a researcher. On some occasions, I was required to advise Kampung's head regarding the kampung development[20]. I sometimes acted as an unofficial consultant since it was requisite to be well-received in the research site.

Ideally, I aimed to stay in Kampung Bogeman Wetan during my fieldwork; however, due to practicalities, I lived in my own house which is located about four kilometers from the research location. To maintain the relationship and follow the activities in Kampung Bogeman Wetan, I visited the Kampung almost every day and actively participated in kampung social events. On some occasions, I stayed one- or two nights in the kampung resident house. By doing so, I could build an intimate relationship with the locals and we gained mutual trust in the first month of interaction.

During my fieldwork, I experienced two ethnographic aspects in both smart city projects. These aspects were field positioning and data assembly (Seim, 2021, p. 11). Firstly, my status as an intern at the Kebonpolo traditional market has required me to be in a more 'fixed' position, meaning that I could not freely move while carrying out my task and responsibilities, especially during the levy collection processes. As an intern who helped levy collectors implement the cashless levy payment, I started to work at the UPTD Kebonpolo traditional market from Monday-Friday at 07.30-16.00. The levy collection

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[20] I was invited to the hamlet meetings that were not limited to the Kampung Teduh project but other issues such as hamlet development planning and poverty alleviation programs. Reflecting on the role that I took during my fieldwork, I was considered a member of the Kampung, albeit I was not the resident administratively.

usually takes place between 09.00-12.00. Therefore, I relatively felt like an insider who had responsibilities and fixed schedules. Unlike fixed-term employment requiring electronic-based attendance, I was exempted from recording my attendance on the city government's electronic attendance monitoring system. I also came to the traditional market on the weekend since the levy collectors work seven days a week.

My experience in Kampung Bogeman Wetan seemed more flexible than the one in the Kebonpolo traditional market. This is due to my informal involvement and the role I took in the fieldwork. I was free to decide my field work activities in terms of research participants, localities, and events. This allowed me to follow the process of Kampung Teduh's development flexibly. For instance, I could freely participate in social activities such as a household or urban village meetings without compromising my role and schedule.

Secondly, the role of observant participator shaped how I took fieldnotes. During my fieldwork, it was possible for me to jot down my fieldnotes while I observed critical events and to review my interpretation in my home after I finished the observation. In this way, I jotted my field notes and fieldwork diary, before interpreting them in my consolidated notes. By doing so, I combine data assembly through both incarnation (experiencing) and inscription (scripting) through which I participate and live through the social events and write my participation and reflections.

Data Collection Methods

My fieldwork aimed to conduct ethnographic data collection with observation as the main method. To complement the data collection, I followed Falzon (2009, p. 1), who advises to combine complementary field techniques including interviews, group discussions, and conversations. Data were obtained based on intimate relationships and trust between the researcher and the community at the field sites. I chose participants[21] purposively based on their role in smart city development projects. Besides purposive sampling, I also used snowball sampling when participants referred other participants to be included in the study.

Overall, I conducted two expert interviews, 28 semi-structured interviews, 128 unstructured-informal interviews (conversation), two Focus Group Discussions (FGDs),

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[21] As ethnographic fieldwork, the participants refer to smart city actors involved in the study. This also includes expert interviews, semi-structured interviews, and unstructured-informal interviews.

two official meetings, and participated in eight community meetings. Regarding observant participation, I documented 97 consolidated field notes extracted from the observations in the research sites. Conversations through unstructured-informal interviews during observant participation have allowed me to reflect, clarify, triangulate, and elicit some quotes regarding my interpretation of a particular observation. This also means that conversations with participants helped the researcher in validating and triangulating data obtained from the observation. All interactions with the participants were conducted in Indonesian, Javanese, and mixed Indonesian-Javanese languages.

To complement the analysis, I also included secondary sources, including six policy papers, two city government regulations, and several photos and videos related to smart city development projects in the city of Magelang. These documents provided additional evidence that helps interpretations during data analysis. For example, two Magelang Smart City Master Plans have informed the content of smart city policy, which shows the result of decision-making dynamics and compromise between actors (Chapter 4). In Chapter 6, photos of slum characteristics according to the kampung residents described the local perception of the slum more vividly through visualization. The overview of data collection methods can be seen in Table 3.

Themes	Methods	Remarks	Information
The emergence and development of smart city policies, programs, and projects in the city of Magelang (Constitutive-directive governance level)	• 2 Expert interviews • 7 Semi-structured interviews • Documentations (6 Policy papers and 2 city regulations)	• The expert interviews were conducted in 4/9/20 and 14/9/20 • Semi-structured interviews were conducted (online-offline) with mayor, city council members, high level echelons civil servants, and IT consultants	• Comprehensive information about the emergence and development of smart city policy in the research locus including: timeline and trajectory, traveling idea and role models, motivations, institutional set up, and negotiations and conflicts during these processes.
The dynamics of 'e-retribusi' implementation (Operational governance level)	• 6 Semi-structured interviews • 2 FGDs • Video-Photo Documentation • 71 Unstructured-informal interviews and conversation • 52 Consolidated Notes -> observation • 2 Official Meeting participation	• Semi-structured interviews were conducted October-November with civil servant from BPKAD, Disperindag, and IT consultant. • FGD's were conducted in 25/11/20 and 10/02/21 • Unstructured-informal interviews were conducted with small-scale traders and street level bureaucrats • Observation was held between October 2020-Januari 2021 • I participated in 3 official meetings	• Comprehensive information on project planning and policy design of the project. • Actors and stakeholders' analysis involved in the project. • Actors' different life worlds and multiple realities of traditional market • Actors' knowledge regarding development project • Actors' interest and power relations • Policy goals and its unintended consequences • Coalition buildings, negotiations, and conflicts during project implementation • Lived-experiences and maneuver of actors
The dynamics of 'Kampung Teduh' projects implementation (Operational governance level)	• 15 Semi-structured interviews • Video-Photo Documentation • 57 Unstructured-informal interviews and conversation • 8 Community Meeting • 45 Consolidated Notes -> observation	• Semi-structured interviews were conducted February-March 2021 • Unstructured-informal interviews and conversation were conducted with kampung inhabitants and street level bureaucrats as intermediaries for the development project • I participated in 8 community meetings • Observation was held between February-June 2021	• Comprehensive information of the Kampung Teduh Project planning and policy design of the project • Contextual attributes of research locus (Geo-spatial, social-economic and cultural dimension) • Actors' knowledge regarding development project • Actors' interest and power relations • Policy goals and its unintended consequences • Coalition buildings, negotiations, and conflicts during project implementation

Table 3 Overview of Data Collection Methods

I classified the presentation of data collection according to the themes and level of analysis following the conceptual framework. The details can be depicted in Appendix 2.

Data Processing and Analysis

Forming and refining abstract concepts grounded on empirical data are integral parts of data analysis. Therefore, it is essential to make sense of the data collected from the field systematically. I managed to obtain the data formats, including fieldnotes, recording, and transcription after fieldwork. To analyze these data, I adopted successive approximation as the analytical strategy through which I cyclically reviewed between empirical data and conceptual framework. This means that I adjusted the theoretical consideration and refined the data over time during data collection and analysis. In simple words, the approach allows data iteration to achieve comprehension (Neuman, 2006, p. 469).

To do so, I used a coding procedure that mainly comprised data management and analytical labeling (coding) aided by a qualitative data analysis software, NVivo 10. Data management consisted of organizing the data I collected from fieldwork into a data inventory and a data collection log. The data inventory records the data collection sheet which comprises data code, date, description of data, format, and index. In the data collection log, I summarized my activities during data collection, information about date and place, activities, output of field activities, output format, and data source. These data management techniques helped document the whole fieldwork to easily manage the data during coding processes.

Figure 9 Data Collection, Management, and Analysis

Data Collections | **Data Management** | **Data Analysis**

Expert interview, Semi structured interview, Unstructured informal interview, FGD, Observation → recording → Transcription

Observation → Jotted Notes → Consolidated notes

Photo and Video, Policy paper, regulations, news

N-Vivo 10 → Coding
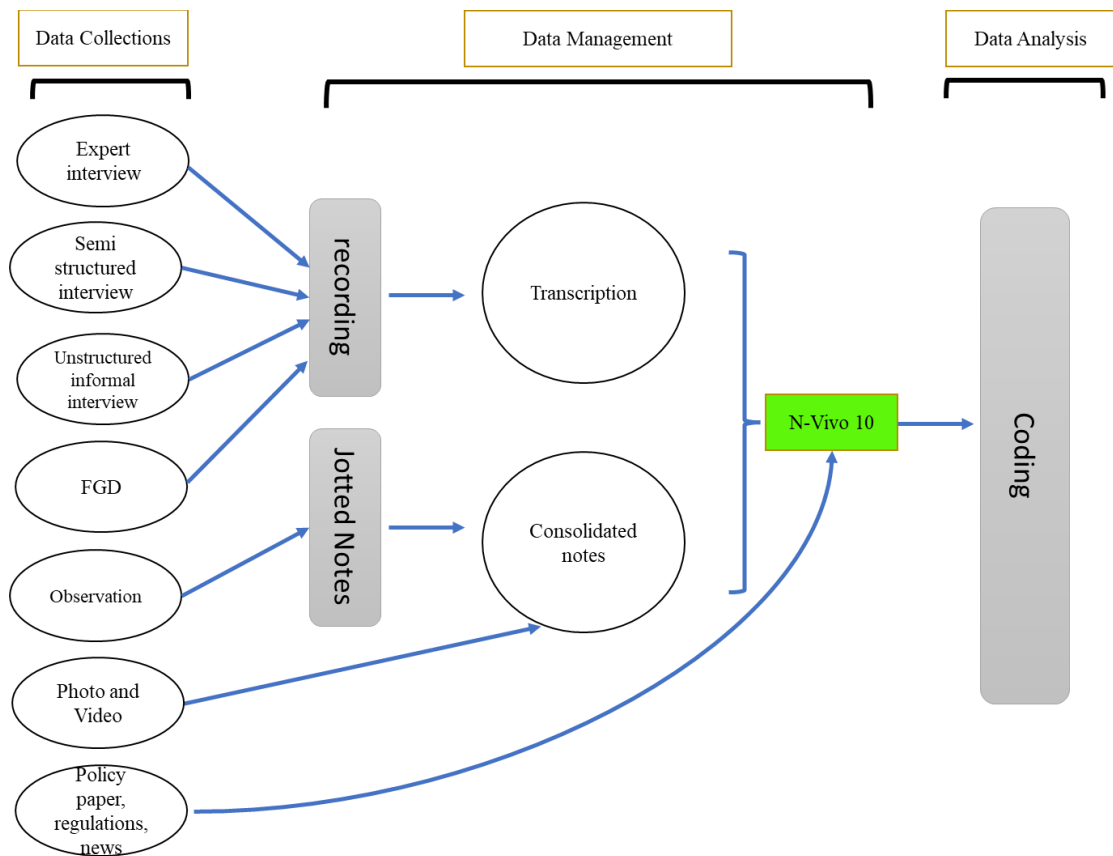
Source: Author

Having documented the whole data in an orderly and systematic manner, I then performed analytical labeling, simply known as coding. Following Miles & Huberman (1994, p. 56), the codes are labels that assign meaning; thus, they are crucial as the inferential vehicle in understanding the phenomena under study. I identified critical events and key actors that conceive important themes and concepts and then labeled them. By doing so, I dug out the underlying themes and brought them into the second step, in which I connected the labels and analyzed their coherence. In the last part of the coding procedure, I triangulate the preliminary findings to achieve data analysis saturation.

For example, I put the label "actor interest" for open coding to code the interview data that showed the interests that actors have in the smart city project and "actor maneuver" for strategies to achieve actors' interest. I then connected the "actor interest" and "actor maneuver" labels to further analyze the link between the labels to explain the implementation dynamics during the smart city project through memos provided by the software. The linkage between concept, level of analysis, methods, and data analysis can be depicted in Appendix 3.

3.4 Positionality, Reflexivity, and Ethical Considerations

I acknowledge that my social position, identity, and knowledge shaped my research journey. Therefore, I need to reflect my positionality and reflexivity. Positionality refers to the researcher's socio-cultural and historical background that influences the ways in which he or she makes sense of the social world (Bourke, 2014, p. 2). While positionality designates from which (position and situation) I - as a researcher - see the world, reflexivity is about my reflections and internal dialogues addressing the given positionality. With this in mind, I advocated the claim that social science cannot be purely objective and value-free, but knowing and reflecting researchers' positionality helps reduce subjectivity (Dubois, 2015; Kassan *et al.*, 2020, p. 2).

I began to identify my positionality during research proposal writing and fieldwork preparation. In so doing, I adapted the social identity map (Jacobson and Mustafa, 2019) to facilitate my understanding of my own position and, in comparison with my research participants during the course of the study. I identified myself on the basis of age, religion, social status (including educational background and socio-economic), ethnic group, native language, gender, and residency[22]. I might describe myself as a young Muslim Javanese man working as a civil servant-lecturer at a new public university in Magelang City[23]. In addition, I lived in the neighborhood from both field sites, about two kilometers from the Kebonpolo traditional market (research site 1) and four kilometers from Kampung Bogeman Wetan (research site 2), thus, classified as a resident of Magelang City. In terms of communication, I can speak Javanese as my native language[24].

Given this identity, on the one hand, I found it relatively straightforward and uncomplicated to get access into the field sites and 'live-along' within participants during my fieldwork. The commonality in ethnicity and language I speak with participants, for instance, has expedited the social bond and eased my *rapport* process. This also affected how I built relationships with participants in the field sites. On the bright side, I felt their

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[22] The consideration of social identification mapping was adjusted in reference to research localities. To that end, it was slightly different from the western context that sometimes include political ideology and preference, immigration status, ability, sexual orientation, citizenship, class, and skin color. See for instance Berger (2015), Holmes (2020) and Jacobson & Mustafa (2019).

[23] I previously worked as a civil servant at the central government in Jakarta and transferred to Magelang city in 2017. I moved to Magelang city in July 2018 before I moved to Bonn, Germany, to start my doctoral degree in July 2019. Thus, practically, I have lived in the city for one year and familiarized myself with the surroundings and the city lifestyle.

[24] I speak fluent Javanese as it is my mother tongue. Also, I can speak a polite form of Javanese known as *Krama Inggil*, which is often used to communicate with the elders.

willingness to participate in my research due to relatively similar identities. On the other hand, I also found a barrier when interacting with participants whose education background was lower than mine. To deal with this issue, I discussed it in groups by inviting other participants. This means that positionality brings power relations between the researcher and the researched (Kassan *et al.*, 2020, p. 1). The identified position helps to better understand my position as part of the social world where I am doing my research and how participants see me as the researcher.

My positionality was also influenced by the role I took during fieldwork. As an observant participator, I experienced deeper involvements (compared to participant-observer) with the community being studied, since I was regarded as a member, and even a colleague, in their social world. During the fieldwork, the close relationships between participants and the researcher may produce psychological, emotional, and sensitive feelings. This can manifest in empathy, prejudice, solidarity, and camaraderie, which, in turn, influence how I make sense of social phenomena. Simply put, these may lead to blurring boundaries (Berger, 2015, p. 225) and additional biases during research activities, especially in the effort to collect and interpret data from participants (Bourke, 2014, p. 1).

In reference to my identity and role in the fieldwork, it requires continuous reflective practice during the entire research process. Given the familiarity of research objects and settings, on the one hand, I could relate to and obtain a better understanding of participants' circumstances. For instance, when I interviewed civil servants in the city government office or did my internship in the UPTD at Kebon Polo traditional market, I could easily relate and understand the civil service terminologies that the participants shared. The bureaucratic jargon such as echelon, *DIPA* (Budget Form Implementation), *Renja* (project planning), *Juklak* and *Juknis* or Standard Operating Procedure (SOP), LAKIP (performance assessment) etcetera were also familiar for me. A similar case also occurred in the Kampung Teduh, where I became acquainted with the local dialect and tradition in the surroundings. As a Magelang resident, I was also familiar with the notion such as *kumpulan*, which means community meeting, *sambatan,* which means devotional work, and *sripahan, which* denotes solidarity in the case a community-members has passed away.

However, on the other hand, I had to remind myself not to use my own experiences and prior knowledge to make sense of participants' lived experiences. In other words, I have to balance between researcher and participant perspectives (Berger, 2015, p. 231). To do so, I wrote my daily research diaries and administered my data inventory file and data collection log during the data collection processes. From the participants' side, I conducted repeated reviews to recall participants' intentions, feelings, and perceptions from the previous conversation or interview. By doing so, it gave the opportunity to review the consolidated notes and triangulate the data accordingly.

The ethical clearance procedure is an integral part of this research to maintain the research integrity and avoid harm for both researcher and the researched. Following RatSWD [Council for Social and Economic Data] (2017, p. 6), my ethical clearance was submitted and reviewed by the Research Ethics Committee representative of the Center for Development Research (ZEF), University Bonn on 16 June 2020. The ethical clearance was granted on 31 August 2020. The ethical consideration covered by the ethical form involves the overview of research objectives, the identification of research object or participants, and the consent form for research participants. The latter asks participants to give their informed consent, confirming that they understood the objectives of the research and the possible implications of their participation and that they knew that they could withdraw their consent at any time of the research process. I obtained two types of participants' consent during the data collection process, including written and oral consent. Written consent was required via printed forms during formal data collection (semi-structured interviews and FGDs). While oral consents were informally attained during observation.

Chapter 4 Magelang Smart City Imagined: Actors, Decision-Making Processes and The Urban Diagram

4. 1 Introduction

One of the main loci in smart city scholarships is the process through which smart city policies are made (Dowling *et al.*, 2021, p. 3300). It deals with the inquiry on how cities initiate smart city programs and integrate smart urbanism as the main urban development approach. In democratic systems, the authority is dispersed, thus the decision-making process involves various political actors. Each actor may have certain ideological and pragmatic interests that shape the political and decision-making dynamics. This chapter discusses the emergence and dynamics of smart city policy-making and how institutions and values were discoursed to articulate policy goals. It describes the political and administrative processes in which the strategic policy dynamics of urban planning took place.

Aside of emergence, further in-depth analysis needs to address how smart city adoption evolves over time. Taking the Magelang Smart City policy making as the case, I delve into detailed descriptions to reveal the dynamics of the decision-making journey from the initial idea to the promulgation of an official policy. Here, I not only describe the chronological order regarding the birth of Magelang Smart City initiative, but also systematically analyze the actors' interactions and their social interface that shaped smart city strategic policy. Dynamic policy-making processes entail various actor interests(Lisdorf, 2020), power relations (Datta & Odendaal, 2019), and knowledge interface (Hoefsloot *et al.*, 2020) that shape decision-making processes.

As the outcome of the policy-making dynamics, I illustrate Magelang's smart city diagram as a heuristic archetype that explains Magelang city's urban imagination in realizing urban development. What I mean by the urban diagram is not literally represented in a map, figure, graph, visualization, or scheme; instead, I follow Osborne & Rose (1999) and Yang (2020), who illustrate the urban diagram as an abstract schema of urban imagination that leads the government's pursuit to realize the ideal of urban development.

This chapter will be structured as follows. In the next section, I will give a brief historical account of Magelang smart city initiation to provide a chronological and contextual depiction from the time and space perspectives. I then analyze the traveling

ideas, the actors, and the motivations that led to the adoption of the smart city model. Next, I will provide an analysis of actors and their coalition building before I empirically investigate the dynamics decision-making process. As such, I expand the elucidation of smart city adoption from the sequential to discursive interpretation. It reveals how a city translates the smart city ideas into urban development policy. The last part of this chapter presents the urban diagram as an upshot of smart city actors' interactions and their dynamics at the social interface in formulating the image of Magelang Smart City.

4.2 The Background: How does Magelang Smart City Evolve?

A Historical Sketch

The historical sketch of Magelang Smart City demonstrates the chronological processes by which the Magelang City government adopted the smart city concept. It outlines how the idea of the smart city was introduced to the broader city actors. In addition, it depicts how the smart notion entered policy agenda-setting, was developed into a concrete smart city model, and was integrated into urban development policy, programs, and projects. The ways in which the city government translated smart city ideas into policy did not materialize instantly in a linear modus operandi. Instead, subsequent processes occurred, characterized by bureaucratic procedures and political artifices. The institutionalization of the smart city agenda in Magelang City involved various actors and mechanisms.

The initiative to develop Magelang as a smart city was first brought up in the internal forums[25] on urban development hosted by Bappeda at the end of 2013. The internal forums involved the mayor, deputy mayor, and high-level civil servants who discussed the progress of urban development performance in the city of Magelang. During the discussions, other city stakeholders, including the city government bureaucracy, the city legislative council, academics, and community leaders were invited. The meetings enabled city stakeholders to exchange knowledge and ideas regarding the urban development topics and issues. By that time, the trends towards digital public services and smart government had gained the attention of Magelang

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[25] It was also known as public hearing where various city actors discuss urban issues in a special meeting. The meeting usually takes place every three months to monitor the urban development progress.

city actors. Bappeda initially echoed and promoted these themes, and on many occasions, the mayor of Magelang City declared the intention of Magelang City to adopt digital technology and integrate the concept of smart city into urban development strategies.

The momentum came after ITB's SCCIC, a pioneering initiator of Indonesian smart city initiatives, introduced a smart city ranking in which many Indonesian cities were assessed. They competed to be the winners of this award to obtain recognition as smart cities. During this period, the discourse on smart cities in Indonesia gained traction (Supangkat in Pratama, 2021, p. 3). The dominant narratives revolved around city modernizations and the use of IT as an enabling factor in governing Indonesian cities and advancing urban development.

Two years later, exactly in February 2015, the Mayor of Magelang City sent the head of Bappeda and his staff to a smart cities workshop held by SCCIC ITB in Bandung. Here, the representative of the Magelang City government learned about the smart city concept developed by ITB. Inviting Professor Suhono Supangkat, the head of SCCIC, as an academic consultant, the City of Magelang integrated smart city development into its medium-term development planning agenda for the RPJMD year 2015-2020. Consequently, the notion of 'smart city' was explicitly written as the city's vision in that period. The Magelang city government published a Smart City Master Plan 2016-2021 based on the smart city model developed by ITB.

Some Indonesian local governments, including Magelang City, preempted the central government's initiative for the smart city movement in Indonesia. The central government policy for the smart city movement just started in 2017. The national policy was manifested in the launch of the 100 Smart Cities movement initiative promoted by Kemenkominfo (Davy, 2019). The central government's intervention in smart urbanism has also influenced local urban planning. In the case of Magelang Smart City, its previous smart city master plan for the 2016-2021 period was terminated in January 2019. Following the 100 Smart Cities movement, a new master plan for Magelang Smart City sponsored by the national government was published as the guide for the 2019-2024 smart city projects.

Figure 10 Smart City Timeline and Trajectory 2013-2021

end of 2013: Internal discourse

| Internal meeting in the City Development Planning Agency | evaluation on regional development performance |

2015: Knowledge exchange, comparative study, academic references and consultation

| Workshop in ITB | Comparative studies in Bandung, Kota Semarang, Kota Makassar | Won national smart city awards (small city category) |

2016: Master plan I led by the City Development Planning Agency

| The operational and managerial guidance elaborated from RPJMD 2015-2020 | Based on GSCM in collaboration with UGM and ITB | Dimension: economy, society, environment, IT/technology, governance, people |

2017: 100 smart cities movement

| Initiated by Kemenkominfo | 50 cities in 2018, 50 cities in 2019 | Magelang City Won national smart city awards (small city category) |

early 2019: Transition phase:

| Previous Master plan (2016) was terminated | City government drafted a new master plan in accordance to 100 smart cities movement |

Mid 2019: New master plan was issued following 100 smart cities movement

| master plan II was led by Diskominsta | Different dimensions from GSCM: governance, branding, economy, living, society, environment. | Magelang city won national smart city awards (small city category) |

2020/2021: the initiative regarding Magelang smart city were integrated in annual city development planning

Visualized by Author

The Ideas of Smart Urbanism

I traced the origin of smart city ideas and how they traveled and influenced the Magelang city government to adopt the smart city concept in its urban development agenda. From the chronological account, it can be construed that smart city ideas were firstly pioneered by the city's internal bureaucracy, especially Bappeda. As the local government planning body, the agency conducted some studies related to urban governance and development to learn from the management of other Indonesian cities. A semi-structured interview with the head of Bappeda revealed that other Indonesian cities inspired the Magelang smart city initiative. Cities such as Bandung, Bekasi, Surabaya, Semarang, and Makassar were the role models for the Magelang smart city development.

"We were extremely tempted by the futuristic design of the Bandung's Command Center during the leadership of Pak Ridwan Kamil[26]. However, we cannot make an apple-to-apple comparison between Magelang City and Bandung City. Thus, we observed other examples, such as Bogor with its smart green city concept…We also surveyed Makassar in South Sulawesi as a reference during the leadership of Pak Danny [Mohammad Ramdan Pomanto] by studying Lorong Garden [Longgar]. It was an innovative project that built garden alleys for urban gardening to make the city greener and produce economic value-added. That also inspired us to develop such projects" (Online interview via Zoom with the Head of Bappeda, 5 October 2020).

Learning from other cities' experiences entailed knowledge exchange and the adoption of traveling ideas. Here, the travelling idea refers to "how concepts, ideas, models of urban development are translated from one location to another"(Tait and Jensen, 2007, p. 108).

In the case of Magelang Smart City, there were two types of traveling ideas. The first was direct knowledge exchange, which occurs when the city government interacts directly and actively with other cities and smart city experts and consultants. Direct knowledge exchange was made possible through site visits and studies in cities that had claimed to be smart cities, smart city workshops, and university/expert consultations. The Magelang City Bappeda drew lessons from smart cities by conducting comparative field studies in Bandung, Bogor, and Makassar. By visiting these cities, Bappeda's staff gained first-hand knowledge about how their smart city projects were implemented. Other direct knowledge exchanges were sought at smart city workshops and conferences organized by universities and research institutes such as the ASEAN Smart City Network, Indonesian Smart City Ranking, ITB, and Gadjah Mada University (UGM). After these workshops and conferences, Magelang City officials often contracted consulting services that involved smart city academics and experts.

The second mechanism of smart city knowledge transfer was indirect. The city government indirectly learned and conducted one-way interactions with other cities or smart city experts. The one-way interactions manifested itself through research reports and articles published in the academic and gray literature. Supported by the

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[26] Ridwan Kamil, known as Kang Emil is an architect and politician and now serves as the Governor of West Java Province. From 2013-2018 he was the Mayor of Bandung city. During his leadership in Bandung city, he initiated many projects related to smart city initiative such as Bandung Command Center, open government project, smart health care services, Bandung creative and smart Hub, Bandung urban gardening and Bandung Teknopolis (Kamil, 2015).

Magelang City Government's Balitbang, reviews of smart cities and urban innovation approaches have been conducted to understand smart city development more comprehensively. Conversations with civil servants from Bappeda and Balitbang informed about how they monitored the news regarding smart cities from various sources such as social media and conventional media, including newspapers, magazines, and documentaries that expose city features and profiles.

Table 4 Direct and Indirect Smart City's Knowledge Exchange

Direct	Comparative field study	Study visit to Bandung, Semarang Municipality, and Makassar
	Smart City Workshops	Workshop held by ITB, UGM, Indonesia Smart City Forum, RKCI
	University and Expert Consultations	Consultation with experts from UGM and ITB
In-direct	Academic and popular literature	Studies and Researches by Research and Development Agency
	Social Media	Instagram, Twitter, Facebook
	News	Local and National Newspapers
	Documentaries	City Features and profiles

compiled by Author

To gain public attention and set policy agenda for broader policy actors, Magelang City Bappeda amplified a discourse on the concept of the smart city by propagating the theme in the internal meetings within the city bureaucracy and in discussions involving broader urban actors. During internal meetings, Magelang City Mayor became interested in including smart city development into Magelang's urban development priorities. He believed that technologies could enhance public service quality for citizens. In one of the official speeches, the mayor of Magelang City emphasized the importance of technology to support the realization of the smart city. He said: *"We should follow the progress of technologies, so that we are not left behind. Albeit its small size, we have a dream to be the Singapore of Central Java"* (Mayor Speech on 26 October 2020). His statement indicates the intention to follow successful cities, such as Singapore, that utilize technological advancement in urban development.

The smart city ideas also proliferated in the DPRD as the city's legislative council,[27] which has the authority, together with the mayor, to formulate city regulations, authorize the local budget, and perform control functions. The council plays an important role in the smart city development since it represents city residents and holds political legitimacy. A member of the city legislative council was very passionate about the notion of smart cities and highlighted the urgency of using digital technologies to deliver public services. He made an analogy of the digital world as a part of our daily life. He argued that *"…even children now cannot live without a smartphone. If you asked them something, they would search for the answer through google; when you asked them about their dream job, many of them would answer to be a Youtuber"* (interview with a Magelang City DPRD member, 6 November 2020). This indicates that he believes that the city should take advantage of global trends to maximize digital technologies in urban governance and development as it is already a universal development.

As the discourse on smart urbanism captured the attention of the political elites within the city, it gained prominence and passed a window of opportunity in the city's political arena, especially in the context of urban development policy formulation. The agenda-setting prioritized smart city initiatives as the central theme of urban development. The underlying narrative of the smart city discourse can be found in the regional development planning document, RPJMD 2016-2021[28], in which the vision is to make the city of Magelang a smart city that provides modern public service. It also states that Magelang City pursued modernity by exploiting technological advancement as a means to achieve the welfare and prosperity for citizens.

The Drivers: Visions, Problems, Opportunities, and Political-Bureaucracy Interests

In the following, I will discuss the rationales that led to the translation of the initial smart city ideas into a smart city policy that provides the legal basis for the design of actual smart city programs (*program pembangunan*) and projects (*kegiatan*). The driver of smart city adoption was not only motivated by public goods

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[27] According to the law number 17 Year 2014, the city legislative council is part of local governance as the legislative body in the Indonesian local government system. The members come from political parties who are elected in the general election.

[28] The complete elaboration of vision, mission, and development strategy can be further observed at the Regional Regulation Number 1/2016: Magelang City's Regional Medium Terms Development Plan 2016-2021.

considerations; but was also driven by political and bureaucratic interests. These factors explain why the Magelang City government adopts the smart city approach in its urban development agenda. The motives behind smart city adoption can be reflected from four main aspects: the city's government visions, typical problems that the city faces, opportunities and the general development trajectory, and vested interest that politicians and bureaucrats bring to the urban planning decision-making processes.

Firstly, the city government aspires to achieve formal objectives from the adoption of smart city policy. In general, the program aims to solve urban problems using innovative ways. One of the most emerging objectives is modernizing the city's bureaucratic process and civil service system. An interview with a mid-level civil servant showed that the Magelang City government strives to use digital technologies in local government.

> "Public services should be digitalized; thus, we aim to get there [digital government] soon. In the future there will be no paperwork or face-to-face interaction anymore [to support smart cities]. With these kinds of business processes, we want to shift from governed by *sinten*[29] to governed by system" (Interview with civil servant from Diskominsta, 30.09.2020).

Regarding the smart city program, the city government developed e-government applications, such as civil registration system, business licensing system, one-data platform, smart Magelang apps, and some local financial systems: e-planning, e-budgeting, and e-monitoring.

Civil service modernization enables the government bureaucracy to improve public service provisions. In order to provide excellent services, the city administration, as part of the smart government programs, developed One Stop Services (OSS) in certain city offices. The OSS for investors and to obtain business licenses are examples of implementing one-stop services in Magelang city. The ease of doing business is also a way to upgrade a city's competitiveness, which, in turn, contributes to economic development. The more business is located in Magelang city, the more economic activities emerge. This will move the wheel of the Magelang's economy and increase the city's internal revenue by expanding local taxes and levies.

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[29] *Sinten* is a Javanese word for who. In this context, the speaker refers to the personal or civil servant who a handle the administrative and paper work, while system refers to the digital system embedded in the smart city applications and services.

Another ultimate objective is to attain a livable city for its inhabitants. The themes of innovative, digital, green, and sustainable cities have been at the forefront of the policymaking process of the Magelang smart city initiative. The city intended to exploit sensor-based technologies to govern city infrastructure and structure. For instance, the city has the objective to maintain 30% of its surface as public green space. This is supposed to be attained through a digitized monitoring and the information system. Some efforts have been implemented to decrease air and water pollution, by installing a control room that monitors the pollution levels. Other projects, such as a Geographic Information System (GIS)-based technology to support building licenses, and to promote additional alternative energy generation are meant to support the realization of a livable city (Bappeda Kota Magelang, 2016).

Secondly, like other cities in Indonesia, Magelang City faces typical problems such as low public service quality, traffic congestion, lack of housing infrastructure, waste management issues, and inefficient energy consumption. For instance, the latest data from Magelang City Office of Environmental Services (DLH) (2022), shows the increasing volume of household waste and a declining waste collection capacity. In 2019, the total household waste was 320.24 m3/day, with 294.29 m3/day of waste collection capacity. This means that not all household waste could be collected, since the capacity to collect waste from citizens to the waste collection station reached only 91.9 %. However, in 2020 the total household waste was 328.32 m3/day, and the waste collection capacity was 287.7 m3/day (87.63 %). These numbers indicate that the waste management issue is one of the urban problems faced by the city government. To address this issue, the city government needs to find an innovative solution. The initiative of waste banks and a smart waste management system have been proposed to solve the problems (Fatimah, Murniningsih and Setiawan, 2021).

In addition, Magelang City needs to generate internal resources by exploiting exceptional urban services. The city is the third smallest city in Indonesia, with lack of natural resources. Its land use is dominated by settlement. The latest data showed limited exploration and exploitation of natural resources in the city area. There are no companies or even planned investments in the mining and energy sectors (BPS Kota Magelang, 2021). While many surrounding cities and regencies generate funds from agriculture and eco-tourism, Magelang city thrives as the hub for its hinterland. The city government promotes it as the 'Service City' to strengthen its position as a service

provider in Central Java Province. The natural resources deficiency has pushed the city government to provide excellent public services to its residents and surrounding cities' inhabitants.

The next factors relate to the opportunistic attributes that the city has to improve its competitive advantages such as strategic location, regional economic hub, and city branding. Albeit its small size and geographical characteristics, the city is located on the border of the Yogyakarta and Central Java provincial government. Its strategic location serves a hub for business, tourism, and transport for the two provinces. For instance, according to Presidential Regulation No.58 (2014) and No. 3 (2016), the city of Magelang City was set for the Strategic National Project for Borobudur Temple[30] as an international tourism destination. Thus, the city's strategic location can be regarded as the third contextual factor that encourages the adoption of the smart city concept to exploit the commercial hub potential and boost the economic activities within the city.

The Central Java Provincial Government has also promoted Magelang city as a Regional Center (*Pusat Kegiatan Wilayah/PKW*)[31]. Being a PKW allows the specific city to function as a center of economic development, including export-import activities, manufacturing, transportation, and industrial production. In practice, Magelang city already supports the regional economy of surrounding regencies known as 'Purwomanggung', the abbreviation of Purworejo, Wonosobo, Temanggung, and the regency of Magelang by providing urban infrastructures and services such as health and education facilities. In relation to PKW, the city government provides various public services, including financial, transportation, trade, and other governmental services. To support the PKW, the Magelang City government has improved its city infrastructures. For example, 80 % of government offices have applied e-government in day-to-day operations (Bappeda Kota Magelang, 2016).

The next opportunity relates to the branding strategy of the city. Given the intensified urban competition, many cities, including Magelang city, put smart city

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[30] Borobudur Temple is the world's largest Buddhist monument, a historic landmark commonly regarded as one of the seven wonders of the world. In 2020, the national government develops this site one of the national strategic projects (Bappenas, 2020)

[31] The Magelang City government integrate the status of regional center of activities into its city spatial planning policy. According to regulation number 2 Year 2020 which regulates Magelang city spatial planning 2011-2031.

initiatives as one of components of the city branding strategies. Rooted in marketing studies (Kavaratzis, 2018), city branding aims to promote the city's positive image (Govers, 2012) and local competitive advantages (Boyle, 1997). The recognition and smart city awards were intended to boost the image of Magelang as a modern, safe, and livable city. From a more pragmatic point of view, integrating smart city policy as part of city branding was an entry point to attract business investment and tourism. An interview with a representative of Diskominsta revealed that smart government and smart economy dimension supported by digital technologies would build a good image of the city and attract investment. He states *"...the recognition of smart cities enhanced citizen' trust and made Magelang visible as an investor-friendly city. This city has efficient bureaucracies and does not hinder investment"* (Interview, 5 October 2020). This finding is similar to previous literature that city branding aims to attract the economy and tourism (Hanna and Rowley, 2011). Therefore, smart city initiatives and city branding matter as they become part of urban politics (Anttiroiko, 2014), urban policy (Lucarelli, 2018), and urban planning strategy (Bonakdar and Audirac, 2020).

Apart from above motives, the Magelang Smart City initiative has also been motivated by implicit interests including electoral politics, politician's prestige, and bureaucratic interest. The endorsement to adopt smart city as the tagline for Magelang City's urban development is to fulfill the Magelang City mayor's political promise. Adopting the promises of the smart city was one of the incumbent mayor's political campaigns in the 2016 mayoral election. An interview with a participant from Bappeda revealed that the incumbent mayor discussed with the agency regarding his second term's vision for mayoral candidacy in 2016.

> "Before the 2016 mayoral election, Pak Wali [Mayor] came to me and requested suggestions for his vision and mission for the election. I proposed the smart city theme as one of the visions, and thanks to God, he won, and the vision of Magelang city 2016-2021 was Magelang city as a modern and smart service city based on a prosperous and religious society". (Interview with the Head of Bappeda, 5 October 2020).

Consequently, Magelang City's RPJMD 2016-2021 incorporates the smart city notion as an urban development priority. The smart city theme was explicitly stated as the city's vision that guides the city development strategies during the five years of mayor's administration. The realization of smart city projects signifies that his elected mayor has kept the political promises. In this sense, the adoption of the smart city

approach was also politically-driven since it fell in line with the political agenda set by the incumbent mayor for his second tenure. Digitalization, modernization of civil services, and the city within the framework of smart city development have become important parts of the rhetoric that supports the political legitimacy of the mayor.

Additionally, the smart city adoption was motivated by recognition and prestige. Smart city projects often produce city infrastructures that may lead to and mark personal recognition of the incumbent, especially during the leadership period in which the smart projects were developed. In this way, urban development prioritizes physical outputs rather than non-physical outcomes. Similar to the '*statuemania*'(Cohen, 1989), where political leaders marked their power through monuments or statues, mayors place their legacy and political footprint in the form of awards as well as urban infrastructures in the smart city era. In the case of Magelang smart city, the mayor has been awarded the national smart city award for four consecutive years 2015, 2017, 2019, and 2021. These swayed the mayor's reputation and boosted his reputation since these awards get enormous media coverage.

This effect was enhanced by billboards put up in strategic places around the city by the city administration showing the mayor receiving the awards. In addition, many enhancements to the city infrastructure such as the traffic management system, the command center, the Magelang DATAGO, and the Magelang Cerdas Apps are the part of the mayor's legacy for which he will be remembered.

Table 5 Awards regarding smart city projects 2016-2021

Award	Aspect	Years	Awarding Body
Indonesian smart city award category: small city	Smart cities	2015, 2017, 2019, 2021	Indonesian Smart City Rating led by ITB
Innovative Government Award	Smart governance	2017, 2018, 2019, 2020	Indonesian Ministry of Home Affairs
Smart society award	Smart Society	2021	Indonesian Ministry of Communication and Informatics
Nirwasita Tantra and Green Leadership for Green Environment	Smart environment	2020	Indonesian Ministry for

			Environment and Forestry
Bike to Work Award	Smart Mobility	2021	Indonesian Ministry of Home Affairs

Compiled by author from various sources

Finally, the smart city adoption also benefited the city government bureaucracies. The benefits relate to the budget-maximizing model (Niskanen, 1994), in which government bureaucracies seek to maximize their budget, resources, and autonomies for their interests, including personal utilities, power, and status. The city government units competed for budget shares, personnel allocation, and local development projects. For instance, the city government offices strived to gain project priorities in the RPJMD formulation that indicates resource allocation and budget envelopes within the next five years. In that case, the office that proposed the smart projects will probably get more resources than others. To this end, city bureaucracies may propose and execute as budget-realization vehicles. In a broader context, the development project intends to contribute economic growth and increase public expenditure by spending the government budget (Bach, 2021, p. 6).

4.3 The Actors: Bureaucracy-Consultant Domination and Citizens Marginalization

Actors' Configuration and Network

In the following, I map the policy actors and their network structures to better understand the actors' configuration and their interaction within the Magelang Smart City policy-making environment. The Magelang Smart City decision-making process involved various actors. Adapting Lisdorf's category of smart city actors (2020, p. 8), I analyze the actors in the Magelang smart city policy process according to their characteristics, roles, and interests within the smart city policy network. Thus, I classify the actors into six clusters: government bureaucrats, politicians, business people, academicians, non-government organizations, and citizen.

The first cluster is government bureaucracy including local and national level. In Magelang City, the city government acts as the prime movers in developing smart city initiatives. Of the total of 43 identified policy actors, 16 local government bureaucracies were involved. Of the 16 offices, Bappeda and Diskominsta were in the forefront. Both

offices play an important role as the main technocratic designer of the smart city initiative in Magelang City. In 2016, Magelang City Bappeda formulated the Magelang Smart City Master Plan 2016-2021. The master plan is a strategic planning document that guides the smart city development in the city of Magelang within a 5-year framework.

In 2017, the central government through Kemenkominfo launched a national program to promote the smart city concept to be applied in Indonesian cities known as the '100 smart cities movement'. The Ministry facilitates the nominated cities with technical assistance that includes expert assistance, training, and consultation to formulate strategies promoting smart cities. The Magelang city was chosen as one of cities benefitting from the program. Through the 100 smart cities movement, the central government became part of the Magelang Smart City actor configuration. It influenced the institutional arrangement that had been set up in the Magelang smart city's new master plan. One of the obvious indications was the termination of the Magelang Smart City Master Plan 2016-2021 replaced by the Magelang Smart City Master Plan 2019-2024.

The second cluster was the political actors. They are elected officials who hold the legal and political authority in the city of Magelang and the actors involved in the smart city policy making within the local public finance system and were responsible for the budget of the smart city development. This cluster consists of mayor and deputy mayor as the individual politician who act as the government executive body, and the city legislative council as the legislative-parliamentary body. Despite difference function in the city governance, they share a similar characteristic as the member of political parties who represent the Magelang City residents through the general election. In reference to the latent motive for smart city adoption, political actors seemed gaining political benefits from smart city adoption. As the means of political marketing and reputation building, the mayor, deputy mayor, and DPRD members were enthusiastic about the smart city adoption in Magelang City.

The city bureaucracy and local political actors are at the crux of decision-making processes. Both operate at the politico-administrative sphere inside the local government entity. The institutional set up for urban planning including smart city initiative in Magelang city follows the national public administration system (See

Chapter 2.3). Basically, the joint decision between executive and legislative bodies authorizes the smart city policy. The executive body consists of the mayor and his administration carrying different functions in smart city development. The mayor established a smart city council as the steering committee in directing the smart city development. The committee works closely with Bappeda and Diskominsta in designing the smart city initiative. The offices under the Magelang city government with project implementation teams act as executing agency in the project operation. Besides, the institutional set controls and anticipate the risks through the involvement of the Indonesian Audit Board (BPK) as the national audit body and the city inspectorate. On the legislative side, the DPRD as the city legislative body approves the annual (smart city) program proposed by the executive bodies.

Figure 11 Magelang Smart City Institutional Arrangement
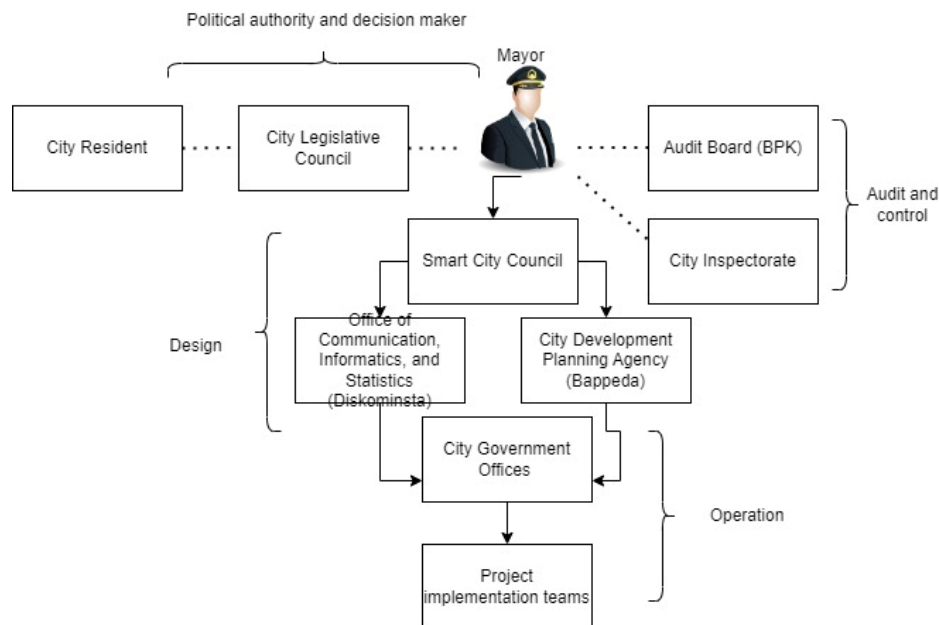
Visualized by Author from interviews and Magelang Smart City Master Plan

The next smart city policy actors were business people who involved during the agenda setting and decision-making process. As the smart city actors third cluster, they play an important role in the Magelang city as they provide job opportunities for city residents, accelerate economic development, and pay taxes to the city government. In the context of Magelang smart city development projects, the private sectors refer to vendors who develop, build, and maintain smart city projects. The vendors involved in the projects as hardware, software, and system integrators.

In Magelang Smart City development, the business people were represented by state-owned enterprises and IT companies. State-owned enterprises include local branches of PT Bank Jateng[32], PT Telkom[33], and PT. PLN[34] . All are government-owned companies working in different sectors. Bank Jateng is a regional bank owned by the Central Java Provincial Government. PT Telkom Indonesia represents the telecommunication sector, while PT. PLN operates its business in providing electricity. Both enterprises are owned by the central government and cover services from the national to local level. The Magelang Smart City initiatives rely on the electrical energy and telecommunication services, especially in the area of smart and digital government projects. Thus, the city government involves them as active actors in developing the Magelang Smart City. State-owned enterprises support the projects by providing the resources needed through their services.

Beside the state-owned enterprises, the private-owned companies have also taken part in the smart city policy adoption. The IT companies and consultants were keen on grabbing the opportunities from the Indonesian smart city hype. PT Gama Techno is one of the companies that works as a consulting firm for smart city development in Magelang City. Gama Techno is a company under UGM. Established in 2005, it previously worked on higher education digital solutions, but has expanded its business by providing 'smart city solutions' since 2014. The higher education-based enterprise and consultancy firm has recently expanded and started various branch companies such as PT Aino Indonesia (Est. 2012) for business payment solution, PT Solusi Kampus Indonesia (Est. 2019), which provides higher education system solution services, and PT Global Data Inspirasi, which operates in big data consulting and services. During the adoption processes, the company provided ideas and technical knowledge before being appointed as a consultant to design a smart city master plan document.

Researchers from universities and other research institutes have also provided technical assistance in formulating smart city policy. Individual researchers from higher education institutions especially ITB, Universitas Muhammadiyah Magelang, Universitas Tidar, and Bina Patria School of Management Informatics and Computer, have given

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[32] Jateng is the acronym of Jawa Tengah Province [the Central Java Province].
[33] Telkom is the acronym for Telekomunikasi [telecommunication].
[34] PLN is the abbreviation of Perusahaan Listrik Negara [State Electricity Company].

advice during the agenda setting and decision-making process of Magelang Smart City initiatives. They helped the city government preparing the medium and long-term plan for smart city development.

Among well-known researchers who helped Magelang city government was Prof. Suhono Supangkat from ITB as one of the pioneers of Indonesia's smart cities program. He leads the SCCIC, which facilitates cities' implementations of smart solutions to urban problems. He advises and assists many government agencies and industries, especially on information technology regulations and governance. He has also developed the RKCI which aims to survey and map Indonesian smart city development; it has been published every two years since 2015. I classified the researchers as the fourth cluster of smart city actors in the Magelang smart city decision making process.

The fifth cluster were NGOs [35]. Unlike other Indonesian smart cities where multi-national organizations engaged in smart city development, Magelang Smart City initiatives involved only one local organization called Komunitas Kampung IT. The Kampung IT, also known as *Kampung Blogger,* is a community organization that empowers urban youths through the utilization of the internet for local development. Like other grassroot initiatives, *Kampung Blogger* has contributed to local economic development through the ICT for development (ICT4D) approach (Tremblay, 2019, p. 143). The activities include but are not limited to teaching and learning of online techniques such as blogging, content writing, and online trading. Pioneered by Sumbodo Malik, a young computer enthusiast who lives in the urban village of Kedung Sari, Magelang Utara, the community organization has empowered hundreds of members and developed the kampung as an online business village (*Kampung bisnis online*) (Radar Jogja, 2017).

The community organization became a member of the smart city council. The absence of non-government organization from national, supra national, and charities/foundation is obvious. Nationally, there has been some engagement of supra national organizations such as ASCN, United Cities and Local Governments (UCLG), and The United States Agency for International Development (USAID). For instance, in 2018,

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[35] Some literatures call the NGO as not for profit organization since its main goal is not related with profit seeking instead empowering community development.

USAID provided research grant of 3-million-dollars (IDR 45 billion) (West Java Provincial Government, 2018).

Finally, the important smart city actor are citizens who reside, live, work, and stay in Magelang city. Magelang city residents are those who live in the city of Magelang and hold permanent residence and civil administration document as resident of Magelang. Politically, they have the right to vote for the mayor and his representatives in the DPRD. In relation to smart city, their interest is a well-functioning city manifested by high quality of public services. The citizen can also be tourists, visitors, or commuters who are not residents of Magelang City.

These actors had a relatively low involvement in the smart city policy decision-making process due to the top-down and technocratic approach implemented by the city bureaucracies. One of the mechanisms they involved is through the city legislative council as their representatives in the local government entities. Although the democratic system has made the participative procedure available, citizen aspiration regarding the smart city initiatives was lacking. An interview with one of the DPRD members amplifies this fact.

> "I regularly meet my constituents in my electoral district. I rarely inquire or discuss about Magelang Smart City. This terminology is unreachable for them as ordinary citizens. They may not aware of using the smart city facilities in their everyday life. For instance, they will check the city center conditions or traffic jam via the Magelang Cerdas apps in their mobile phone without knowing that the apps is one product of smart city project. Most government projects (not only the smart city project) come from the top (government offices), and citizens will follow. Citizens then will come to us, if they find difficulties and problems. (9 November 2020).

Besides, citizens may convey and deliver their views and opinion in the survey and opinion poll on smart city services in Magelang City. The survey was administered once in 2019 to collect the Magelang city residents' perception about smart city services (Balitbang Kota Magelang, 2019). In this case, the survey was rather post hoc to capture their opinion after the projects were implemented. The participative urban planning mechanism was lacking in the beginning of the program and project design. These circumstances contributed to the lack of citizen participation in formulating and designing smart city development planning.

Figure 12 The Magelang Smart City Policy Actors and Their Network
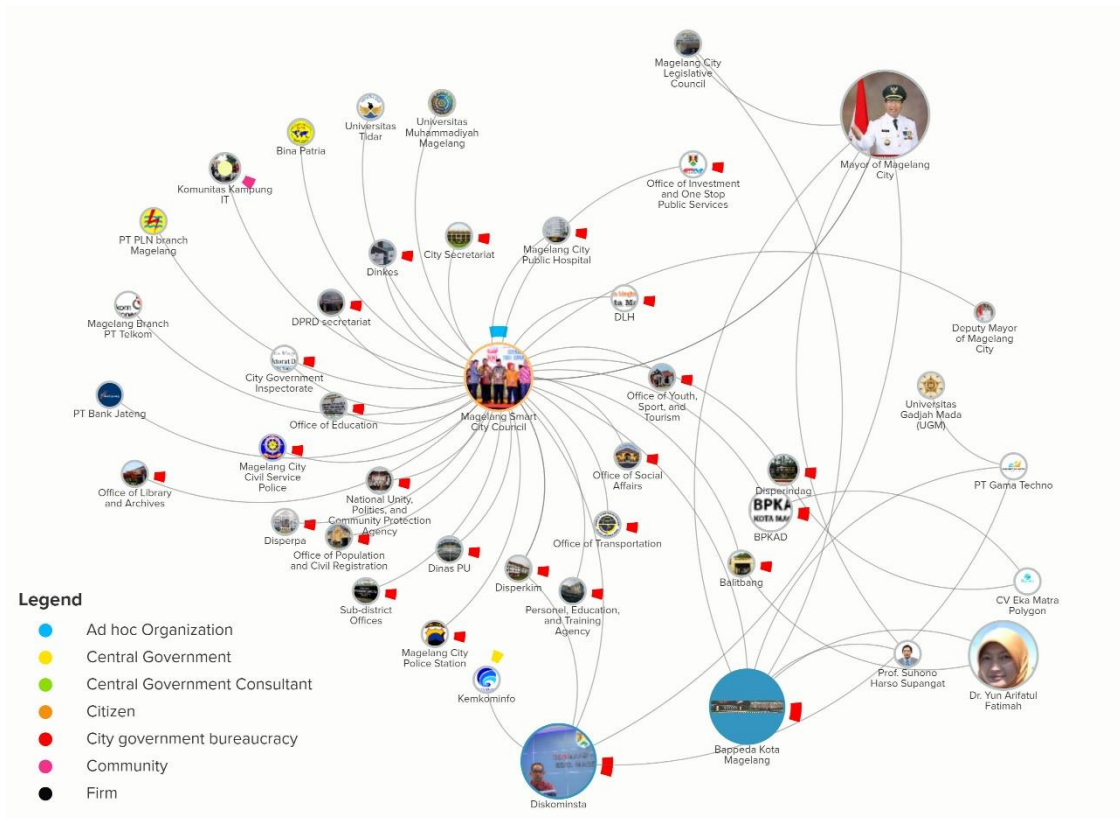
De Jure and de Facto Coalition

Following Long (2015), I avoid the simple assumption that actors within the same social group hold the same perception about a development project. Thus, I delve into actors' networks and investigate how smart city actors allied to build their coalition in the decision-making process. Understanding the actor networks and coalitions may predict the position and attitude of smart city actors toward development projects. It opens the windows allowing the analysis that reveal actors' interests, interactions, cooperation, and contestations during the policymaking process.

The smart city actors' coalition-building in Magelang City was ensembled from various actors and, in practice, materialized into both formal and informal coalitions. The formal coalition refers to the structured governance bodies instituted by the Magelang city's mayor decree. This coalition was a legal-formal or *de jure* organizational assembly governing Magelang's smart city development. It may also entitle to 'the actors at the paper'. Referring to the Magelang smart city master plan documents (2016-2021

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[36] The visualization can also be found online in https://kumu.io/apratama/test#untitled-map

and 2019-2024), the steering and organizing committee organize the strategic policy arrangement. Both entities hold legal legitimacy in the Magelang smart city development.

The steering committee is an ad hoc organization that integrates all smart city actors in the city of Magelang. Concretely, the Magelang City mayor established Magelang Smart City Council in 2019 through Mayor decree Number 050/153/112. The council is responsible for formulating strategic policy directions and providing advice on smart city development in Magelang City. In addition, the council is liable for the intersectoral coordination and collaboration among smart city actors. The council consists of 42 members representing governments, businesses/private sectors, universities, and civil societies/community organizations. This configuration is akin to the quadruple helix model incorporating government, private sectors, academicians, and non-profit organizations (Crumpton *et al.*, 2021, p. 7).

The organizing committee refers to the implementing organization that executes the policy directions directed by the smart city council. The executing body is designated as *Tim Pelaksana Gerakan 100 Smart City,* consisting of all offices in the city government and sub-district offices in three sub-district areas (Diskominsta, 2019). The offices are responsible for managing Magelang's smart city development projects. Due to technical constraints, the city government offices cooperate with smart city consultants. The public procurement system often organized the appointment of consultants and vendors.

In practice, the ideal formal coalition was not always materialized. The case of Magelang city points out that, most likely, the informal coalition was evident in reshaping the smart city adoption and decision making. While a formal coalition can only be regarded as the network of actors on paper (*de jure*), an informal coalition is the real players in the policy-making realities (*de facto*). The informal coalition is formed on the basis of interests, knowledge, and power relations. The informal coalition in Magelang smart city adoption was dominated by the city government bureaucrats and consultants. This led to the adoption process driven by the city bureaucracy and consultant coalition, the so-called bureaucrat- consultant-led smart city initiative.

The informal coalition has turned the actor configuration from a steering-executing relationship into the overlapping-domination relationship. The overlapping

relationship implies the blurred function between the steering activities and the execution of the programs. One of the triggers was its ad hoc structure with no fixed structures within the local government system. This also led to the suboptimal function of the smart city council. An interview with one of the members of executing committee has revealed that the establishment of a smart city council was meant to (only formally) satisfy the involvement of all city stakeholders. However, the committee has not really directed the strategic policies as city bureaucrats, and consultants consisting of smart city experts and IT companies have taken the role.

> "We do have a smart city council, but, in reality, we (Diskominsta and Bappeda) were somersaulting to formulate and design smart city policy. Most (smart city council) members are high-level civil servants, who might have less time to deal with [smart city issues]". (Interview with one of executing committee members, 5 October 2020).

This finding was also supported by the fact that the council had no regular meetings to assume its steering functions. Members who come from outside city bureaucracy are also less involved in strategic smart city policy decisions. Instead, they mostly participated in non-strategic meetings and incidental events such as public disseminations or FGDs held by Bappeda.

The informal coalition is characterized by top-down and hegemonic decision-making. The bureaucrat-consultant coalition dominated other actors in agenda setting and policy formulation. The mapping of smart city policy actors and their networks in Figure 12 shows that Bappeda was a dominant actor in promoting Magelang's smart city policy. The office played a role as the hub that controls information flows by connecting almost all actors within the network. Due to its function as the city's urban planning authority, Bappeda led the smart city planning institutional mechanism. The agency brought in academics and researchers as smart city consultants to support the scientific argument. The involvement of ITB indicated the close relationship between bureaucracy and consultants in smart city adoption. Besides Bappeda, Diskominsta has also been at the forefront since its task relates to technologies as the mainstream theme of smart cities.

Their technocratic power and authority in urban development policy induce economic interest from private companies. Within government-business relationships, both parties share mutual interactions. Since the introduction of smart cities in Indonesia circa 2014, many IT companies and consultants have changed their business

focus to provide urban solutions and services as smart city providers; thus, smart city consultants and vendors have emerged significantly. The IT markets have been widely opened due to the emergence of Indonesian smart city initiatives, generating high competition among IT companies in Indonesia. An in-depth interview with one of the smart city providers based in Yogyakarta revealed that many IT companies and new start-up companies specializing in smart city solutions have mushroomed to catch the market opportunities in providing the smart application for Indonesian cities.

> "From the corporate perspective, you may already notice that our company's tag line relates to the smart city solution. We also expanded our division for smart city segmentation: government, transportation, lifestyle, and education... Since there are more competitors (in smart city projects) nowadays, we maintain our network, especially in higher education solutions, besides participating in government e-procurement. From there, we learned how to win and handle projects... In many cases, companies operate based on their capacity, meaning that major companies (multinational and international companies) compete for metropolitan and megacities, while start-up and middle companies contest for small-middle cities' projects". (Interview with smart city consultant 29.01.2021)

On the surface, it seems that smart city consultant firms and vendors were not obviously involved during policy formulation and agenda-setting. They actively compete during smart city project implementation through an e-procurement system. Due to the current public procurement system[37], business people and companies have been officially blocked from interacting with government agencies directly during the public procurement process; however, they often influence the policy under the desks. The Magelang smart city policy decision-making process involved one of the smart city vendors as a consultant during grand design and master plan preparation. This happened when the city government signed a Memorandum of Understanding (MoU) with the appointed consultant to collaborate in designing the smart city master plan in 2016.

> "... They came to our office and consulted on a master plan to develop the Magelang Smart City. We (together with some other consultants and academics) helped them formulate five years master plan that guides strategies and priorities to achieve Magelang as a smart city. After the master plan, we worked on more projects, such as IT governance strategy that produced a data dictionary for e-

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[37] Since 2007, the Government of Indonesia has reformed public procurement to achieve more transparent and accountable public procurement. One of the strategies is the implementation of e-procurement. It allows corporations and enterprises to compete and win government tender electronically. It aims to minimize corruption within the procurement process. The system is led by the National Public Procurement Agency (https://lkpp.go.id and https://inaproc.id/).

government implementation in the city of Magelang. The data dictionary guides the development of digital applications for the next five years in any urban service and sector: health, internal city bureaucracy, public services, mobility, and transportation." (Interview with a representative from an IT company, 29 January 2021)

The statement shows that smart city consulting firms and vendors engage in the smart city decision-making process by exploiting their expert knowledge, especially in the area of information technology and urban planning. They have a strong bargaining power as they provide scientific and technical legitimacy in smart city adoption. Their involvement in the strategic policy making, such as the master plan, led to derivative projects in the future that involve consultant expertise and capacity. For smart city vendors, their involvement in the policy making process is sensible as it allows them to include policies and directions, which later enables them to obtain contracts. In this case, the IT company plays a double role as both a consultant and a vendor. An observation in the Magelang Smart City Master Plan 2019-2024 has revealed that some of the vendors have been explicitly stated in the action plan as collaborators with the Magelang City government offices. For instance, BPKAD appointed CV. Geodewa Innovation Sky from Yogyakarta in developing the Fiscal Cadaster Project (Diskominsta, 2019, p. Book 2, 33).

4.4 The Interface: The Bargaining Interests Inside the City Hall

This sub-chapter explains the smart city adoption and decision-making process by focusing on the social interface at the urban politico-administrative sphere. Departing from the smart city actors' coalition building, I analyze the social interface that (re) shapes the making of smart city policy. It elucidates the interactions between actors characterized by compromise and bargaining inside the city government bureaucracy. The dynamics at the interface occurs in designing policy content, particularly specific themes such as cyber city versus innovative city, and the evolving smart city model driven by the Indonesian central government. These exemplified the dynamics of smart city policy-making in which knowledgeable and powerful actors coopted and dominated others.

The observable fact illustrates the politics of 'middle way', meaning that the leader of the city maintains balance of power among actors in order to achieve a political stability. Here, the mayor of Magelang City promoted compromise actions in urban micro-

politics and policy-making. Before analyzing the dynamics at the interface, I will expose the ways in which coalitions operationalized their strategies and tactics to better understand the politics of policy-making in smart city adoption.

The Stratagem: Leading the Discourse, Getting Legitimacy, and Setting the Agenda

The main aim of coalition strategies was to obtain political support from the mayor and city legislative council who hold a political legitimacy in urban development. Multiple interests and power relations are entangled with actors' social differences and knowledge, shaping the smart city ideas as evolving development concepts. The entanglements are demonstrated by a pattern in which the dominant actors' coalition steers the discourse, obtains scientific and technical legitimacy, and influences political authorities to set the policy agenda. The dominant coalition posed the modalities to influence smart city policy adoption by exploiting their knowledge and power. The efforts to dominate the discourse have been organized since 2013. From 2014 to 2015, Bappeda intensified the development of smart city concepts within the internal bureaucracy through the city's internal forums.

To gain support, the head of Bappeda built intense communications with the Magelang mayor. Before expanding the concept to the whole city stakeholders', the scientific legitimacy was created to strengthen the discourse. To do so, Bappeda established a collaboration with Prof. Suhono Harso Supangkat from ITB, while the Diskominsta contracted PT. Gama Techno as their private consulting firm. As the smart city discourse has been amplified in urban development planning in Magelang City, substantive legitimacy has also been achieved. The collaboration with ITB and technical assistant from PT Gama Techno served to create substantive legitimacy. In this sense, smart city researchers from academic institutions and consultants, as well as vendors from IT companies, provided consultative power. The next step was ensuring political actors consider the smart concept to be applied as Magelang city's urban development paradigm.

The smart city buzzwords, such as green city, cyber city, sustainability, modernization, digitalization, public innovation, and the like, have raised politicians' attention. The Mayor of Magelang City as a politician as well as an elected official found the smart city concept an attractive theme not only for his tenure as city mayor but also for his future political career. The smart city status promises many benefits, especially

the modernization of city administration and the attractiveness for business investment. As such, the smart city status marks the mayor's high achievement and credibility, thus signifying the performative legacy. The status has also built the mayor's reputation and helped in political campaigns and marketing. These strategies have paid off in the second term of the mayor's service, where he received many awards related to the Magelang Smart City. The recognition also provided free political campaigns through extensive media coverage. The mayor's position in smart city adoption was crucial since he holds political authority as the top decision-maker in the city of Magelang.

Bappeda successfully orchestrated the network during smart city policy making. The orchestration here refers to the process by which an organization coordinates initiatives to achieve collective goals (Gupta, Panagiotopoulos and Bowen, 2020, p. 4). As an orchestrator, the agency drove the discourse on smart cities and managed the potential conflict within city government by successfully convincing key actors and primary decision makers. Using a football metaphor, the head of Bappeda discerned his organization's role as a libero or a playmaker. *As a libero, we distribute the ball [smart city idea] and decide the direction of attack toward a goal [policy]."* (Interview, 5 October 2020).

The introduction of smart city as an urban development concept accommodated multiple interests from various actors and connected power relations through which the concept transformed from abstract ideas into a public policy. Whether normative or pragmatic, the actors' interest spectrums were negotiated between and within coalitions. The politician's political benefits, the private sector's economic advantages, researchers' scientific relevance, and bureaucrats' budget maximizing interest are entwined within the political and administrative system in the urban policymaking. Besides coalition interactions that build collaboration, other manifestations of actors at the social interface emerged. The interplay of actors' lifeworld, interest, knowledge, and power will be demonstrated in the next part of this subsection.

Cyber City versus Innovative City

One of the main debates and contested issues during Magelang smart city adoption is the framework and model which the city aims to follow. As previously stated, citizens of Magelang City had little involvement during the decision-making process on the smart city's strategic policy. Consequently, the ways of perceiving the city life were dominantly coming from the lifeworld of the city bureaucrats and the consultants. While bureaucrats orientate their loyalty to the mayor as the politician who holds the city's political power and work based on legality and the NPM bureaucratic reform styles characterized by auditing, accounting, reporting, recording, punishing, and rewarding mechanisms (Gaus, Sultan and Basri, 2017, p. 665), the consultant outside academia often preserve the intention related to business interests and commercial agenda (Kitchin, 2022, p. 156) . As such, the smart city policy content is mainly constructed on administrative-economic articulations with less citizens' conception of urban everyday life.

During the 1998's pre-reform era, Indonesia's bureaucracy was characterized by slow and unprofessional civil service (Tjiptoherijanto, 2008), serving as state corporatism (Dwiyanto, 2017) and political apparatus (Emmerson, 1983), which embodied an patrimonialism culture (Anderson, 1983). After bureaucratic reform, some changes happened, but still the bureaucracy inherited the old traditions such as formality, rigidity, and hierarchical authority (Gaus, Sultan and Basri, 2017). The orientation of the service has also shifted from state oriented to market-driven policies (Purwanto, 2020, p. 2). Despite improved professionalism, patrimonialism still also covertly exists among street level bureaucrats (Berenschot and van Klinken, 2018), which I also found in Magelang city. For instance, the fact that it continues to be an everyday practice that citizens rely on the help of politicians when dealing with public services shows the continuously existing patron-client relations. An interview with a member of DPRD verified this kind of practices when he said that he helped many residents in his neighborhoods and surroundings to get easier access to public services provided by the city bureaucracy.

Despite bureaucrats' law-abidingness and NPM-reform styles, the relationship between city bureaucrats and politicians has also impacted the ways in which smart city's strategic policy is designed. In practice, the technocratic and rational urban planning proposal collided with the economic and political benefits manifested in the

decision-making process. The final decision-making power is held by the mayor as the elected official as the consequences of the Indonesian local government system. In this setting, the coalition who can persuade the Magelang's mayor, holds a 'trump card' in advancing the ideas of smart city development. To do so, the coalition of actors utilize their expertise and knowledge to convince the mayor on smart city concept in urban planning and development.

At the earliest stage, Bappeda followed the smart city concept as advised by ITB stressing on the real problems that citizens face and optimalization of a city's resources. This implies that the IT applications are not the ends of the smart city programs, rather, these function as the means to solve urban problems. Professor Suhono Supangkat has echoed criticism of overreliance on technology in smart city development as he said in an occasion[38]*"Kota Cerdas itu bukan hanya membuat aplikasi"* ["Smart city is not just making apps']. According to him, many projects have not been designed comprehensively, which may create an output but zero impact. For instance, the command center equipped with thousand Closed-Circuit Television (CCTVs) as city surveillance has no benefits since there is no related enforcement and follow-up action.

According to the Head of Bappeda, the city government faced the challenge of incorporating a common understanding of smart city within the internal bureaucracy. The city bureaucracy has been polarized by two opposing ideas of how to in realize the Magelang smart city initiatives. The differing conceptions were articulated in the policy formulation arena when it was discussed how a smart city should look like. Thus, it has pushed the debates inside the city government institution that mostly happened within internal bureaucracy. *"…One of the challenges is that not all high-level echelons have the unified and same understanding of smart city… For those who work in the planning unit, I guess we have similar ideas, but those who work outside of the planning unit, I doubt it"* (Interview with the head of Bappeda, 5 October 2020). Different ideas about the smart city concept have led to contestation in designing smart city model.

The way knowledge is distributed shapes the interpretation of the recipients. This also happened with the diffusion of smart cities in which recipients perceived the notion of smart city differently. On the one side, a coalition led by Bappeda proposed a

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[38] His speech was delivered in the dissemination of his team's research findings on Indonesian smart cities development. Full news can be accessed at https://tekno.tempo.co/read/1274756/peringkat-kota-cerdas-indonesia-2019-itb-belum-ada-kota-cerdas/full&view=ok

smart city that was close to the ITB's conception accentuating innovative solutions to address urban issues and challenges. The earlier smart city idea brought by Prof. Suhono Supangkat from ITB has influenced the sketch of Magelang city in which technology was reduced to an enabling factor. The concept was disseminated through series of workshops in the city government in which civil servants from the city government planning units have participated. Confronting an overreliance on digital technology, a fraction of bureaucrats perceived that the smart city initiative should aware of government capacity and aim to achieve internal readiness before launching the status as smart city. *"I would emphasize that Magelang smart city is not a cyber city. Our concept of smart city is not necessarily a city that utilizes information technology."* (Interview with the head of Bappeda, 5 October 2020). Another interview was in the same vein with the head of Bappeda. *"In my opinion, a smart city does not only utilize IT. If this is the case, then it is not a smart c[IT]y, but just a smart IT"* (a civil servant from Disperkim, 8 February 2021).

On the other side, another fraction of city bureaucracies advocated '*a cyber city*' as the ideal image of Magelang smart city development. The cyber city designates to the wide-range application of IT to administer and maintain urban governance. It resembles the concept of ubiquitous city or U-city, as a city or region with ubiquitous information technology which is previously conceptualized and developed in Songdo, South Korea (Hwang, 2020) and Osaka, Japan (Anthopoulos and Fitsilis, 2010). One of the main characteristics is the use of massive electronic government system such as Government Resource Management System (GRMS): e-Budgeting, e-Project Planning, e-Procurement, e-Delivery, e-Controlling, and e-Performance, and e-Budgeting (Pramusinto and Purwanto, 2018). This kind of interpretations mostly came from the Diskominsta and politicians in the legislative city council. An interview with a city bureaucrat and a member of the DPRD has unveiled the IT-based smart city akin to the cyber city concept.

> *"The Magelang city vision as an excellence service city cannot be separated from the usage of information technology… You can see the utilization of the Magelang Cerdas Apps managed by Diskominsta in which most of all urban services are available there."* (Interview with a civil servant from Diskominsta, 30 September 2020).

> *"As our function in city legislation and budget authorization, I was very enthusiastic when I heard city government proposed smart city program. In the globalizing world and industry 4.0 era we must follow the trends, otherwise, we will be left*

behind. The government, want it or not, should prepare the infrastructures, especially information technologies" (Interview with a member of the DPRD, 23 November 2020).

They accentuated the application of an e-government system in governing the urban development. The main argument was that a smart city is a prerequisite to achieve regional competitiveness in the era of the fourth industrial revolution.

During the formulation of the 2016-2021 smart city master plan, Magelang city's mayor could steer the decision-making process by negotiating two competing ideas into a bargained formulation of the policy. The compromise can be seen in the final document of the 2016-2021 master plan. The master plan adopted the GSCM developed by ITB. While the adopted smart city concept is based on the non-cyber approach, this was not the case in the detailed projects. The roadmap relied on the construction of IT infrastructures and sensors in the following domains: governance, people, technology, economy, society, and environment. The action plan guides the development of a smart city infrastructure consisting of information systems, a situation room, servers and computer networks, data centers, and data security governance (Bappeda Kota Magelang, 2016). A word frequency count based on the policy document validates this finding, as the words with the highest count were information [*informasi*], system [*sistem*], smart[cerdas], and services [*pelayanan*].

Figure 13 Word Frequency Query of 2016-2021 Master Plan

Word	Length	Count	Weighted Percentage (%)
untuk	5	407	1,40
dengan	6	364	1,25
sistem	6	345	1,19
magelang	8	337	1,16
informasi	9	262	0,90
dalam	5	249	0,86
smart	5	223	0,77
masyarakat	10	209	0,72
belum	5	207	0,71
layanan	7	204	0,70

Visualized by Author using NVivo 10

The Local Initiative versus National Policy: The Evolving Smart City Model

Magelang's smart city policy experienced directional changes, as indicated by the termination of the 2016-2021 master plan. On September 2019, the Magelang City government ratified a new smart city master plan for the period 2019-2024 before the previous master plan ended. The change reflects the dynamics of policy making and urban planning that was mainly induced by a tug of power relations between central and local government. Despite of the master plan conversion, however, the smart city policy-making pursued a similar pattern, in which, city bureaucrat-consultant alliance has driven the content of smart city's five-year programs indication. The citizens seemed to have had less room for their participation and engagement during the technocratic decision-making process which the Magelang City government administered. Reflecting on the change process and the content of both master plans, I identified four significant changes regarding the transition from the 2016-2021 to 2019-2024 Magelang Smart City Master Plan.

The first implication was the change of the focal point organization for the making of the master plan. The authority to lead the smart city master plan development has been transferred from Bappeda to Diskominsta. The substitution has led to a switch of authority from the city planning unit to the city government implementing body. This influenced the ways in which the planning process was administered, under rigid guidance by the Indonesian central government authority, so-called *Buku Panduan Penyusunan Masterplan Smart City*, in English: The Guide for Smart City Masterplan (Kemenkominfo, 2017), which is intended to standardize all Indonesian smart city master plans and synchronize the local central development priorities.

The second implication was the involvement of the central government body in the local government policy-making. The central government through Kemenkominfo engaged in the smart city program pioneered by local governments since it launched a program called the '100 smart cities movement' [*Gerakan 100 Kota Cerdas*] in 2017. As Magelang City was chosen to be part of the program, the ministry first made contact with the city government in mid-2018. Since then, the ministry has actively provided technical assistance to the Magelang City government in developing its master plan. The ministry's engagement has entailed further changes in Magelang Smart City strategic

policy decision-making. It resulted the change of the smart city consultant in which as the researchers from ITB were excluded as the academic consultant can be regarded as the third implication.

At the same time, Diskominsta appointed PT. Gama Techno as an IT consultant, besides having technical assistant from Kemenkominfo. At the national government level, there were two main consulting firms assisting Kemenkominfo in developing the guide of smart city master plan. The consulting firms were a multi-national IT company named Citiasia Center for Smart Nation, and the Indonesian Information Technology Consultant Association. As a result, the epistemic community consisting of researchers and academic-based consultants has been sidelined, if not disregarded, and is replaced by practice-based consultancy from the IT companies.

The fourth consequence of the ministerial engagement was the change in the Magelang Smart City model. Following the model built by the Citiasia Center for Smart Nation, Kemenkominfo has endorsed Indonesian cities to apply the CCSN model. The model shares similarities and differences with the GSCM framework in some aspects. Both models develop the cities' strategic implementation by identifying their potentials and formulating the roadmap. Some of the differences are also obvious. For instance, the GSCM was constructed from cities' maturity perspective consisting of five stages: ad hoc, initiative, scattered, integrative, and smart, while the CCSN use the terminology of readiness based on the city government capacity that consists of four phases: pre-readiness, early-readiness, later-readiness, and full-readiness. Other distinctions were the dimension use in which the CCSN includes smart branding as one of the main dimensions and the role of technology. In GSCM technology is perceived as an enabling factor, while the CCSN sees it as the driver of smart city development.

Table 6 The GSCM and CCSN Model Differences

Aspects	GSCM	CCSN
The objective of framework	To assess maturity	To assess readiness
Dimension	Three enablers: smart people, smart governance, and smart technology and three domains: smart economy, smart society, and smart environment	Six dimensions: smart governance, smart branding, smart economy, smart living, smart society, smart environment.
The Role of Technology	Enabler	Driver

Synthesized by Author

The adoption of CCSN has also influenced the policy content stated in the master plan document. This also means that changes also happen to the proposed projects and budget allocations. While the earlier master plan leaned on the IT infrastructure project schemes, the new master plan seems to accommodate both IT and non-IT- based projects. For example, the tourism promotion project is one of the smart branding strategies that does not depend on the IT infrastructure. Another project related to smart society has also illustrated the non-IT influence. The query of word frequency of the 2019-2024 master plan shows that the previous master plan's dominant word (management information system) has not dominated anymore.

Figure 14 Word Frequency Query of 2019-2024 Master Plan

Word	Length	Count	Weighted Percentage (%)
magelang	8	1082	2,87
smart	5	634	1,68
dalam	5	393	1,04
tahun	5	393	1,04
dengan	6	343	0,91
daerah	6	322	0,86
pemerintah	10	263	0,70
untuk	5	261	0,69
program	7	257	0,68
masyarakat	10	244	0,65
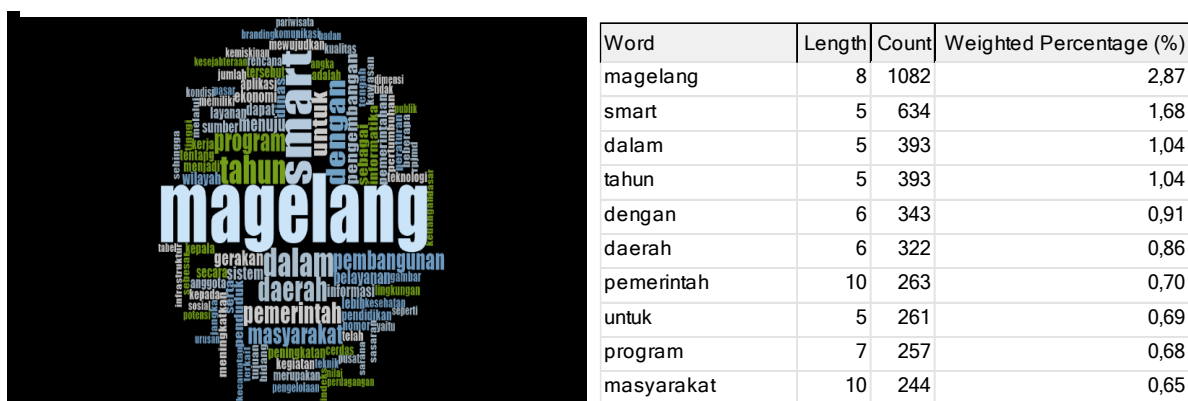
Visualized by Author using NVivo 10

Analyzing the termination and transition of the master plan, the dynamics of policy-making can be observed. The social interface explicates the interaction between actors in the policy making arena. The different and contested perceptions of smart city were mainly constructed from different social backgrounds, values, and views on smart city development. These interweaved with actors' divergence interests and power relations during the construction of the strategic planning document as a manifestation of the urban policy made by the Magelang City government. From the content perspective, the big vision and policy direction in the masterplan often diverge from the action plan specified in the development projects. This implies the missing link between vision and action plans in the smart city blueprint.

4.5 The Resultant: Smart City Imagination as Urban Diagram

Whether it was coalition or contestation, the smart city actor interactions at the social interface led to negotiation. I call it a *resultant*[39], a meeting point at the social interface where policy actors (and their coalition) compromise. I then illustrate the resultant of the smart city policy's social interface in an urban diagram. What I mean by an urban diagram is a diagrammatic interpretation of particular and ongoing urban development. It is an abstract schema of urban imagination that leads the city government's pursuit of realizing an epitome city (Yang, 2020, p. 2). Given the decision process and urban policy configuration, imagination can be regarded as a social practice that operates at the intersubjective level (Jasanoff, 2015, p. 6). In this sense, policy actors organize the shared perception and realize what they mean by a smart city as collective imagined forms of a government programmatic intervention in urban development.

The urban diagram also indicates and drives derivative projects embodied in governmentality and everyday urban life (Osborne and Rose, 1999, p. 738). In this section, I reflect on the urban diagram of a smart city, drawing on the Magelang Smart City master plans as its official policy documents. Master plans justify their existence since they serve as the ends-result of the smart city decision-making process. Besides secondary data from the policy documents, I also triangulated the analysis through in-depth interviews and media analysis. I schematize the smart city imagination as an urban diagram of Magelang Smart City into five themes focusing on the construction of the city's smartness.

Smart as Digital Government and e-Public Services

Digital government and electronic public service delivery (*e-services*) are among the most prominent themes in smart city development imagined by policymakers in the Magelang City government. The accounts of transparency, accountability, innovativeness, efficiency, and modernization have infused the narrative of digital government. At the same time, these themes converge with those of the smart city movement. The common assumption of smartness through IT has been the vanguard in Magelang's smart city development discourse. The Magelang Smart City Master Plans

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[39] The word *resultant or résultante* (French), *resultante* (German), *resultare* (Latin) can be loosely construed as *derived from* or *resulting from* (Merriam-Webster Dictionary). In technical terminology, the Oxford Dictionary defines resultant as a force, velocity, or other vector quantity which is equivalent to the combined effect of two or more component vectors acting at the same point. Inspired by this notion as the outcome of interactions from various components/vectors/forces, I use this term in the context of policy process to refer to the meeting point at the social interface where policy actors (and their coalition) compromise.

induce an use of IT as both the enabler and a smart dimension in developing smart cities (Bappeda Kota Magelang, 2016; Diskominsta, 2019). Under the umbrella of the smart governance dimension, the utilization of IT can be regarded as a means of facilitating smart city projects.

The digital infrastructure emerges as an important aspect of the smart governance dimension. The latest data have shown that the Magelang city government has developed an integrated network connected by fiber optic. It serves 29 offices, 17 urban village offices, nine public health centers, seven secondary high schools, and seven public areas (Diskominsta, 2019). This network allows offices to connect with each other, and this also provides free Wi-Fi and internet to citizens in certain public spaces. Besides the network, the Magelang city government has already implemented various e-government features such as a Traffic Management System, the smart app Magelang Cerdas, a call center Public Safety Center (PSC) 119, and CCTV in 10 areas. Using the Magelang Cerdas apps, citizens can check part of the city areas through CCTV available 24 hours.

Figure 15 CCTV and Magelang Cerdas Apps
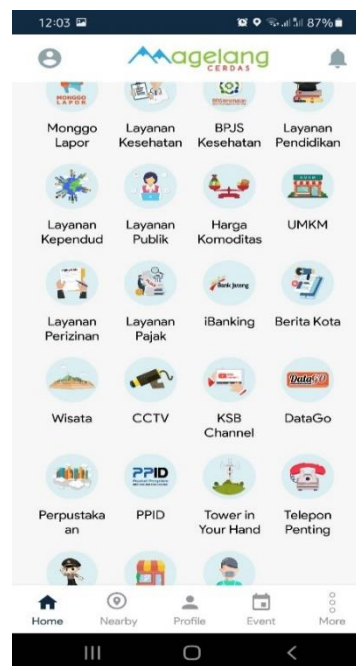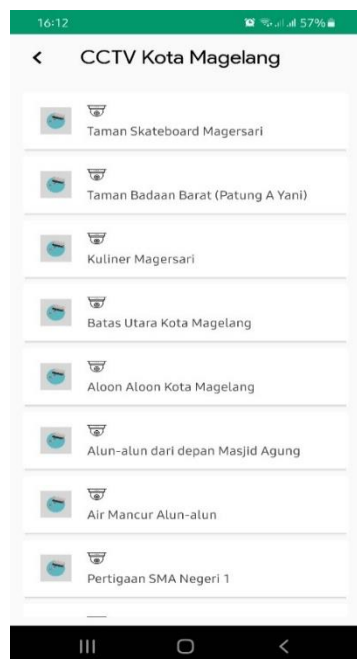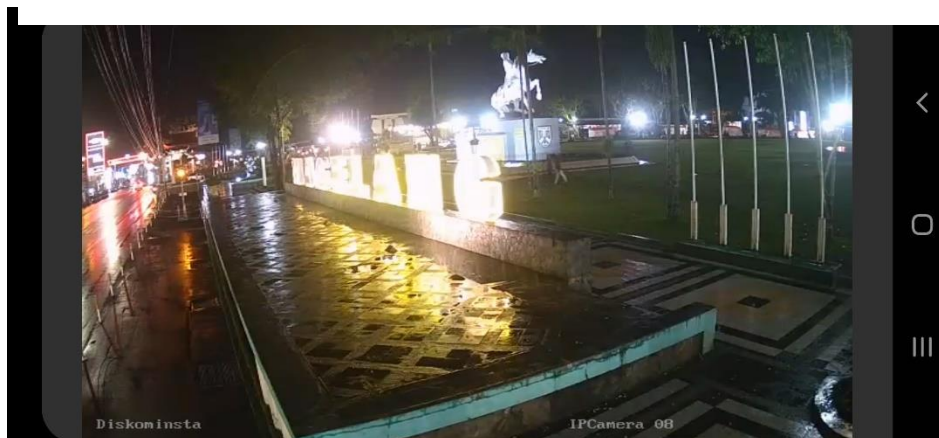
Screenshot by Author

Perhaps previous problematic institutional conditions such as bureaucratization, unresponsive public services, red-tape, corrupt bureaucrats have shaped the conception of digital government within smart city initiatives. These encouraged bureaucratic reform in Indonesian government bodies. The bureaucratic reform implemented since the 2000s adopts the NPM perspective characterized by civil service modernization through digitalization and privatization of public services (Harun *et al.*, 2019; Turner, Prasojo and Sumarwono, 2019). One of the most widely implemented programs is electronic government (e-government). The term e-government especially in the developing country context refers to the use of IT in transforming the relationships between government bodies, citizens, and private sectors (Dada, 2006, p. 1).

Inaugurated in 2003 by Kemenkominfo, the e-government precedes the Indonesian smart city concept (Supangkat cited in Pratama, 2021). These reforms incrementally link with the recent smart city movement, highlighting IT use inside the government bodies and their day-to-day administration and practices. This also leads to the impression that the digitalization of government business processes is seen as an innovation mainstream in the public sector reform (Purwanto, 2018, p. 34).

The Magelang City government has familiarized itself with the digitalization programs and e-government projects that began circa 2005. The projects addressed Presidential Instruction Number 3/2003 on Policy and National Strategy for National e-government Development. The instruction urges local governments in Indonesia to implement public service supported by IT. Several initiatives have been conducted to follow the national regulations in civil service modernization efforts. However, Magelang's projects on e-government seem to be sketchy and experienced scattered implementations. Many government agencies purchased the IT applications, yet not all were functional. For instance, despite having 60 information systems, the Magelang city government faces difficulties integrating these systems due to technical and managerial issues (Pemerintah Kota Magelang, 2015, p. 24). As smart city development takes place, the digitalization of government bureaucracy has been revitalized through the smart governance dimension program.

Driven by both e-government experience and smart city promises, the imaginaries of smart governance manifested through the policy content reflected in the master plan documents. The earlier master plan envisages smart governance as electronically mediated public service delivery. The e-service delivery allows citizens to connect the provision of urban services through their mobile phones or personal computers that have an internet connection. From the city government side, the solutions addressing urban issues, including economy, social, education, health, industry, transportation, and energy consumption, are ideally facilitated by the information system and digital technology. To achieve such conditions, 80% of city offices should connect to the data center with the availability of internet bandwidth and interoperability of data managed by competent civil servants (Bappeda Kota Magelang, 2016).

The 2019-2024 master plan defines smart governance as a mechanism that transforms traditional bureaucratic practices into quick, efficient, and communicative business processes (Diskominsta, 2019, Book 3 p.8). The smart governance dimension links with the city's government bureaucratic reform agenda that aims to transform the mindset and behavior of civil servants to create a more competent, professional, and responsive state apparatus. Following the CCSN model, smart governance operates in the three sub-dimensions: integration of urban services (public services), integration of city's administrations (bureaucracy), and improvement of citizen participation (public policy). The model incorporates the requirement for professional bureaucracy, efficient and effective public service delivery, and democratic decision-making processes.

Despite different titles and labels, the smart city projects under both master plans share a similar pattern in rendering the ideal objective into executable projects. The derivative projects aim to operate in three areas: policy, institutional, and infrastructure. The policy area relates to the enforcement of city regulations in supporting the smart city development project. The institutional arrangement mainly constructs the governing bodies of smart cities divided into steering and implementing bodies. In the 2016-2021 master plan, there were *Tim Pengarah* (steering committee) and *Tim Manajemen* (implementer). In the 2019-2024 master plan, the steering committee was Smart City Council and the implementer was *Tim Pelaksana Gerakan 100 Smart City*. Regarding smart governance infrastructure, the Magelang city government invests in various IT procurement such as command control system, CCTV, teleconference system, data center, fiber optic, hotspot facilities, and intranet system (Diskominsta, 2019, p. Book 3 p.23)

Smart as Sustainable and Green

The Magelang smart city actors imagine a smart city as a city that provides better living conditions for its inhabitants. The imagination is constructed in the themes of sustainable and green cities with which smart environment and living dimensions are related. Following the Sustainable Development Goals (SDGs), the city government aims to achieve an inclusive, safe, resilient, and sustainable city. The regional medium-term development planning has four main objectives: to improve the quality of the city's environment, expand green public space, develop an effective disaster risk reduction system, and achieve sustainable land use. Both master plans follow the regional medium-term development planning and integrate the smart environment and smart

living programs as the crucial dimensions in realizing smart city development. As such, the Magelang City government has implemented smart environment and smart living strategies since 2016.

The smart environment conceives the ideal condition through which the city government is able to achieve the environmental management system aided by sensors and other technologies. The latest master plan emphasizes three sub-dimensions: environmental protection, waste management, and energy utilization. Environmental protection has been focused on managing green public space, since the built environment dominates the city. Of the 1854 Ha, 70 % are settlements, business and service areas, educational buildings, health facilities, and tourism objects. The city aims to preserve the 30% green public space by implementing a green public space project with a medium-term budget of IDR 3 Milliard (around EUR 210,000) from 2020 to 2023. Regarding waste management, the city government aspires to reduce the volume of household waste by 50 tons, supported by IDR 2 Milliard (around EUR 140,000) budget (Diskominsta, 2019, Book 2 p.42). Surprisingly, no project has been initiated for the energy sector, as stated in the smart environment strategy.

The smart living dimension aims to achieve more livable cities by maintaining housing, health and transportation services. As essential public services, improving housing and settlement, health facilities, and transportation infrastructures may contribute to a higher quality of life and boost the city's economic development. These aspects relate to the city's amenities that are closely linked with sustainability. The latest master plan systematizes the strategy into three sub-dimensions: harmony, health, and mobility. The harmony dimension deals with the improvement of housing and settlement. This specifically addresses the issue of slums as the main challenge of Magelang city of Magelang. In 2018, the slums area in Magelang city was about 3.7 percent of the total area of 18.12 km2[40]. This means that 67.41 hectares were classified as slums area. Given these circumstances, the city government aims to transform slum areas into livable settlements. One of the featured projects was Kampung Teduh [*Tematik, Terpadu, Hijau*], which literally means thematic, integrated, and green. The city

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[40] The data was taken from Magelang city mayor decree number 50/105/102/2018 on slums area location in Magelang city 2018. The 67,41 hectares cover 55 hamlets/Kampungs in total.

government launched the project as a mid-term development scheme spanning 2019 to 2025, aiming to eliminate 10 kampung/slum areas annually.

The health sub-dimension anticipates the public health facilities and emergency responses for citizens. Still related to the settlement issue, sanitation is also regarded as one of the typical urban problems in Magelang city. One of the major causes was the household sewage due to either open defecation or inadequate waste processing. Addressing this problem, the city government devoted to constructing an integrated wastewater management system worth IDR 7.8 Milliard (EUR 543,500) in 2019-2020 (Dinas Kominfo dan Statistik Kota Magelang, 2019, Book 2 p.39). In regards to emergency responses, the city government provides 112 call-center. The idea was to provide a reliable platform for citizens to access emergency facilities from the city authorities. The 112-call center allows citizens to report various emergency events.

The mobility sub-dimension associates its strategies with traffic management and transportation system. In 2019, the city was served by 335 public transport consisting of *angkot*[41], bus, and taxi that has not applied digitalization systems (Diskominsta, 2019). While many smart cities emphasize the development of public transport and traffic congestion management (Guo, Tang and Guo, 2020; Reyes-Rubiano *et al.*, 2021), the Magelang city seems to focus on traffic management, leaving public transport managed by the private sectors. The featured project in traffic management was the Auto E-City (Automatic Emergency Car Priority). It was based on intelligent transportation system installed at highway intersections and Traffic Information Control Device.

Smart as City Branding

Smart branding is a new conceptualization of the smart city dimension that emerged in the 2019-2024 master plan. Previously, the policy actors in Magelang City did not interpret smartness as the city's brand. I also found that not a single word on branding existed in the 2016-2021 master plan. The idea of branding denotes the effort to create a city's competitive advantages and promote the city's potentials toward local economic development. The branding strategy has often been integrated into the urban development trend that accentuates smart cities' promises within the smart city

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[41] Angkot is abbreviation of *Angkutan Perkotaan* or urban transportation. It is usually a mini-bus that can transport 8-10 passengers.

movement (Chan, 2019, p. 14). Additionally, the technological advancement adopted by cities has often been linked with the branding characterized by cities' value creation (Buyanova, Kalinina and Shiro, 2021). This relationship underscores the link between digital technology advancement within smart city features and city branding matters in urban development context.

The city of Magelang is also known as one of the oldest cities in Indonesia. In April 2022, the city was 1116 years old, as it was inaugurated on 11 April 970 (Pemerintah Kota Magelang, 2017b). It has also been known as the 'city of the army' or 'military city' due to its location as the home of the national military academy. Due to its historical inheritance, there is potential to develop the tourism sector by exploiting the existing brand that the city has. However, the policy actors, especially politicians, were keen to integrate the city branding into smart city programs highlighting the urge to catch up with other cities by utilizing technologies and showing city's modernization.

The Magelang City government exploits the smart city potential as its branding strategy, focusing on the tourism sector. The relationship between smart city and tourism has been linked with the notion of smart tourism, which shares a similar perceptive attribute as a buzzword (Gretzel *et al.*, 2015, p. 180). On the one hand, the smartness of tourism lies in the utilization of IT that integrates into smart city applications and services. On the other hand, the status of a smart city has also been supposed to attract the interest of tourists. The city government expects to incorporate their relationships as city branding. The smart city, as a city branding, aims to accelerate tourism development characterized by modern services. The program manifested in smart city projects that engaged in three sub-dimensions: tourism, appearance, and business. The main feature of the projects was tourism promotion activities supported by digital applications that provide tourism information and infrastructure in the city of Magelang.

Smart as Learning and Safe Community

The city cannot be separated from its residents. The character of the residents and the ways they behave reflect the place they inhabit. People's behaviors influence the ways cities are governed. The collective action of city inhabitants closely links with physical and cultural aspects known as the cultural landscape, which reveals the interconnection between people, social structures, and the city landscape (Plumwood,

2006, p. 146). Different cultures exhibit different patterns of governing and urban daily life. For instance, the Singaporean culture of discipline and responsible citizens, the availability of resources, and its urban morphology have preceded the more effective and efficient urban governance compared to other cities inhibiting opposing characteristics (Supangkat in Pratama, 2021). Smartness requires smart people and the community. This indicates the ability and capability of residents to learn, acquire, and adapt to their lives at any given environmental change.

Within the concept of smart community, the policy actors in Magelang city envisage smartness as a safe city. It endeavors to achieve safe and peaceful urban life. The notion of a safe city refers to the human security that anticipates vulnerabilities from crises, violence, natural disasters, and other personal hardships in daily life. The term security also means achieving peace, stability, and social order (Diskominsta, 2019, Book 2 p.19). In the context of urban daily life, cities may experience social problems as the excess of urbanization. These may distract the social cohesion and security. Despite having a low rate of criminal incidents[42], other risks such as religious conflict, potential violent protests, and disasters, are still present. The strategy to address the mentioned threats is to build the community's capacity to maintain social cohesion and build an early warning system. In the smart city master plan 2019-2024, the efforts include the smart community dimension strategy consisting of community, learning, and security sub-dimension.

The city government deduces the smart community dimension into social projects that ensure the social cohesion, especially activities related to religious tolerance and dialogues. Community initiatives that thrive successfully on self-maintain the security of their surroundings and utilization of IT within the city government have also supported the social cohesion in Magelang city. The technological infrastructures enable the city government to monitor the city's condition and emergency events. For instance, CCTV functions as the city's surveillance by providing data and information transmitted to the command room in the mayor's office. This system allows the mayor and city authorities to make decisions and quick responses regarding emergency and crisis management.

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[42] On average, the local police records five incidents per week. The proportion of police and resident was 1:168 (Bappeda Kota Magelang, 2016).

Smart as an Investment-Friendly City

Considering the city's lack of natural resources and its strategic location within logistics and economic activities, the city government aspires to optimize the city's position as a service provider to its residents and neighboring cities. In the context of urban entrepreneurship phenomena, local economic development acts as the fuel of urban development (Brenner & Theodore, 2005, p. 101). To accelerate the local economy, the city government needs to invite investment and businesses (Diskominsta, 2019, Book 3 p.10). Investment and business in the city of Magelang are expected to expand city revenues, open new industries, and generating new jobs and employment opportunities.

One of the challenges that hinders investment is bureaucratic red tape characterized by slow, rigid, and opaque public service. This often happens, especially in the investment business licensing processes, in which investors face difficulties investing or running businesses due to institutional and technical hindrances. Addressing these concerns, digital technologies of the smart governance dimension come up as one of the solutions. For example, the Office of Investment launched an integrated one-stop public service, known as OSS, which facilitates the application of investment and business licensing via the online platform (Diskominsta, 2019). The facility has reduced the administrative burden by simplifying the bureaucratic process of economic activities in Magelang City.

Within the smart city framework, the city government initiates smart economy scheme. The smart economy aims to accelerate the city's economic infrastructure, develop the creative economy, and create Magelang city as the center of service in the Central Java Province (Diskominsta, 2019, Book 2 p.18). The program covers two aspects related to the creative economy and industry sectors. In order to promote creative economy activities, the city government facilitates entrepreneurs and creative business owners by providing co-working space. The working space not only provides a 'mobile office' but also creates networking and creative economy cluster development in the city of Magelang. In the industry sector, the city government develops projects to digitalize government financial transactions and promote small-scale enterprises in Magelang city.

4.6 Chapter Summary

The Magelang Smart City policy-making journey has not followed a linear trajectory; instead, it experiences circuitous processes characterized by meandering and flexuous schemes of incremental policy decisions. The decision-making process was embodied on the technocratic design that exploits pragmatic institutional arrangements. Political-administrative-economic interests entangled within the institutional urban planning processes. The entanglement entailed electoral politics, city branding strategy, neo-liberal urbanism, an entrepreneurial city, and budget-maximizing motive. These shaped the ways in which the Magelang City government formulates smart city strategic planning.

Analyzing actors' configuration and their networks has shed light on the claim that the development of Magelang as a smart city can be regarded as a bureaucrat-consultant alliance smart city making. It is characterized by technocratic-driven policy design. This is due to the fact that the city's bureaucracy and consultants posit as the dominant policy actors. The lack of citizen engagement was also apparent during the agenda-setting and decision-making processes. This proposition is supported by empirical evidence focusing on the smart city actors' coalitions and networks in shaping policy formulation and governing arrangement. The bureaucrat-consultant alliance sets the policy agenda by steering the smart city discourse, gaining scientific-technical legitimacy, and influencing political authorities.

After the policy agenda was set, the actor coalitions strive in the policy arena to mobilize the resources and articulate policy goals. The coalitions interact at the social interface leading to dynamic processes of policy-making. The dynamics that occurred in policy design portraying the content of the policy include missions, strategies, and resource allocations that imply the actors' position in the smart city development project. Here, the social differences and social fields in which interests, knowledge, and power are intertwined in the policy-making process. The interactions at the social interface may manifest into negotiation through compromising and bargaining. The compromise lies within policy content accommodating contested perspective between cyber city versus innovative city and local vs national model adoption.

The upshot of Magelang Smart City policymaking is akin to the interface meeting point. Despite the negotiation processes, the citizen aspiration was less evident. The smart city policy content is mainly constructed on administrative-based articulations with less citizens' conception of everyday urban life. As a result, the Magelang Smart City urban

diagram exposes the interpretation and imagination of the city's smartness dominated by bureaucrats-consultant aspiration. The diagram can be elaborated into five themes: digital government and e-public services, sustainable and green, city branding, learning and safe community, and investment-friendly city. These themes reflect the uniqueness of smart city interpretation as the outcome of the social interface distinguished from the established smart city dimension that mainly developed in the global north (*inter alia* Cohen, 2014; Giffinger et al., 2007).

Chapter 5 The Complexity of the Smart Levy Collection: Techno-Power, Resistance, and Maneuver

5.1 Introduction

"As long as they [state/city officials] sit in their room that is cooled by AC [air conditioner], they will not acquire what it is like to be here [in the traditional market]; thus, the policies they made will never address our real problems. Their world is different from ours."

(a small-scale merchant in Kebon Polo traditional market, Magelang City)

The above quote represents the state of the social interface in which the actors' life world and social fields interact in a Magelang Smart City project. This chapter illustrates the implementation dynamics of the e-retribusi project, a smart-mediated IT application facilitating traditional market levy collection in a cashless manner. As one of the featured smart city projects, the main objectives of this project were to modernize the levy collection business process and eradicate the potential fraud in the traditional market levy collection found by the auditors from BPK in the 2018 audit year. The city government has also expected other advantages in improving the traditional market levy management efficiency and optimizing city revenue.

This chapter aims to empirically investigate the dynamics of the e-retribusi project implementation drawing from the actors' lived experiences. Situated in a project implementation setting, the analysis demonstrates how the smart city project is put into practice. Employing the social interface framework at the operational governance level, I analyze how social interface (re)shapes the e-retribusi project implementation in the Kebon Polo traditional market. The chapter also exposes the role of IT in transforming the levy collection as a mundane social practice and how actors engage and maneuver such changes. These maneuvers constitute implementation dynamics that entail resistance and negotiation between actors involved in this project. Further, I assess the immediate policy outcomes as well as the side effects resulting from the project.

The structure of this chapter follows the conceptual framework of smart city development as multiple social interfaces, highlighting actor interactions in implementing the e-retribusi project. In the following section, I will first set out the context of the e-retribusi project to designate the research setting. The chapter then presents the actors'

configuration before analyzing actor interactions at the social interface in which their different life-worlds interplay with vested interests, asymmetric knowledge, and unbalanced power relations. The rest of this chapter will analyze the project's implementation dynamics and its immediate outcomes.

5.2 The Background: Traditional Market, Levy, and the City Revenue

It is widely acknowledged that traditional markets play an essential role in Indonesian urban economic development. Unlike modern markets[43] that lean on modern trade practices and appearances, traditional markets still preserve the conventional methods. For instance, buyers in the modern market could not bargain the commodities' price as they already have a fixed price tag. In contrast, bargaining the price between sellers and buyers is still possible in a traditional market. The enhancement of the small-scale economy and helping deprived communities are some of the benefits of the traditional market. The expansion of the modern market is competing with the traditional ones since both operate in the retail sector. In the city of Magelang, the local government has suspended the licensing of new modern markets since 2010. Only five supermarkets and 20 modern mini-markets operate in the whole city (Disperindag, 2020).

Another strategy to accelerate the local economy is to modernize traditional markets. The governance of traditional markets is part of the Magelang Smart City's strategic vision. The main aim is to leverage the economic potential and create Magelang City as the center of urban services (Diskominsta, 2019, Book 2 p.18). As a trading space, the traditional market not only facilitates the meeting between traders and buyers but also acts as an income generator for the city government through the levy collection (Akhmadi, 2007, p. 22). The levy collection in the traditional market is one of the local government revenues besides general levies such as parking, recreation, sports facilities, waste management services, and cemetery services [44].

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[43] The modern market refers to a hypermarket, supermarket, mall, plaza, or franchised mini-market. I differentiate the modern and traditional market based on the Indonesian Presidential Regulation Number 112 Year 2007. It mainly underscores the main difference in the scope of capital and the flexibility of the final price characterized by the bargaining mechanism between sellers and buyers.

[44] Referring to Law number 28/2007, which regulates Taxes, and Law number 28/2009 on local taxes and levies. Taxes are different from levies. Unlike taxes, levy collection is organized by the local government and imposes services in return for the payment. Thus, levies are also known as service fees or, in Indonesian, retribusi, a loan word from the English word retribution. The services provided in return for the levy in the traditional market include security of the goods, cleaning services, toilets, and a mosque for religious activities.

Magelang City's traditional markets[45] are regarded as a potential revenue generator through their levies. The more trading activities, the more revenue potential the city government possesses. The traditional market levy, in this study, refers to the service fee that the merchants should pay beyond the rental cost for the market space and electricity. While levy should be paid every day by merchants, the rental payment is separately administered within business-license administration by Disperindag. The latest report from January 2017 to August 2020 informed that the levy from the Magelang City's traditional markets had reached an average revenue of more than IDR 1.6 Milliard (EUR 103,021). It contributed about 28 percent of Magelang City's total levy revenue and one percent of internally generated revenue (*Pendapatan Asli Daerah*/PAD) (Disperindag, 2020). This numbers show that the traditional market levy has played a significant role in the local government's financial affairs. It provides almost one-third of the entire city's levy revenue resource.

The city government has made efforts to optimize traditional market levy revenue (Disperindag, 2020). However, this was not an easy task since the administration has also faced potential fraud. The audit report from BPK gave an account of the potential fraud of the traditional market levy collection for around IDR 1.2 Milliard or equivalent to EUR 78,433.00 between 2017 to 2018 (Kanugroho, 2019, p. 5). The labor-intensive levy collection characterized by cash collection by levy collectors mainly caused the potential fraud via a cash-based collection mechanism. BPKAD proposed a new IT system to address this issue. It utilizes digital technologies that allow small-scale merchants to pay their traditional market levy in cashless manner. The system's first generation is labeled as 'Tape Pasar,' an acronym for 'Teknologi Elektronik Pasar,' loosely translated as electronic technology for the traditional market levy collection system. It was first initiated mid-2019. The project's name was changed to e-retribusi in 2020.

The cashless levy collection system was firstly experimented at the end of 2019. It was located in the Cacaban, the smallest traditional market in Magelang City. After several months, the city government decided to gradually scale-up the project to other traditional markets. The e-retribusi expanded to the bigger traditional market in Kebon Polo, Wates urban village, Magelang Utara sub-district in October 2020. I empirically investigated the

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[45] Magelang city consists of five traditional market: Cacaban, Kebon Polo, Gotong-Royong, Rejowinangun, and Sido Mukti. Each traditional market is organized and managed by the Technical Implementation Unit (UPT) office.

implementation of the e-retribusi project in Kebon Polo's traditional market. The newly implemented project allowed me to explore the dynamics of implementation vividly, exposing the transitions and changes that occur during the implementation of the project.

The Kebon Polo traditional market has been operational since 1811, during the takeover of Java island by the British from Dutch colonialists, led by Thomas Stanford Raffles (UPT Pasar Kebon Polo, 2017). The name of Kebon Polo was highly connected to the nutmeg trade [Indonesia: pala], an important commodity at that time. Due to its strategic location, Kebon Polo traditional market has evolved into one of the most active markets in Magelang city. It is located in the Yogyakarta-Semarang city hub, connecting Yogyakarta and Central Java Province. From the socio-geographic perspective, the market is located in the Northern Magelang City, the city region that middle- and upper-class resident inhabits[46].

Figure 16 Kebon Polo traditional market 1950 and 2021
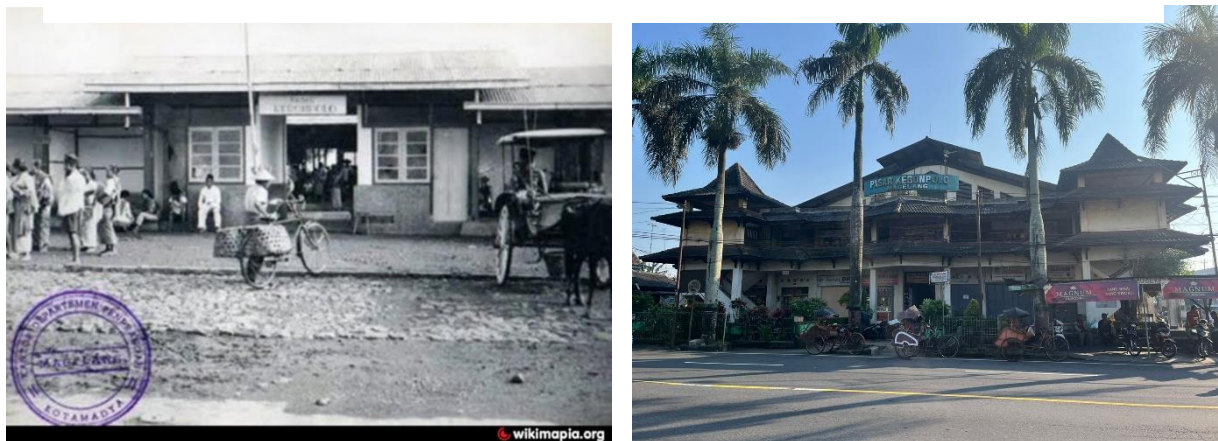
Source: (UPT Pasar Kebon Polo, 2017) and Author Documentation (2021)

Currently, the Kebon Polo traditional market is a two-story building with a total area of 5645 m². The market hosts around 315 registered small-scale merchants who sell various commodities. These include groceries, fruits, vegetables, jewelry, animal feed cloths, farming devices, electrical tools, fish, meat, snacks, and culinary commodities. The first floor reserved for groceries, jewelry, clothes, and farming devices, while the fruits,

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[46] An interview with a member of the city legislative council has revealed that socio-geographically, Magelang city can be categorized into three types: high, middle, and low class. This categorization follows the city area from the north to the southern part of the city. "If you visit the southern part, you will find more poor people. Conversely, most middle-upper residents live in the northern part of the city." (Interview with a member of the city legislative council, 6 November 2020). This statement was also supported by statistical data. For instance, North Magelang consumed the most electricity sold per kWh than the other two sub-districts (BPS Kota Magelang, 2021, p. 269)

vegetables, fish, and meat are sold on the second floor. Traders and buyers come from Magelang city and the neighboring cities such as Magelang Regency, Temanggung Regency, Semarang Regency, and Salatiga Regency. The Kebon Polo traditional market operates seven days a week from 06.00 to 17.00 Western Indonesian Time.

On behalf of the city government, Disperindag manages the traditional markets via UPT Kebonpolo. The UPT provides essential services in the traditional market, such as security, parking, sanitation facilities, and cleaning services. The UPT also obliges to collect the traditional market levy from the small-scale merchants in exchange for the city government's services. UPT Kebonpolo is led by a civil servant appointed by the Head of Disperindag and the Mayor of Magelang City. The head of the UPT Kebon Polo is supported by four administrative staff, a revenue coordinator, 12 cleaning service staff, a security coordinator with three security officers, and three levy collectors. The staff consist of a mix of non-permanent employees and civil servants. However, there is a requirement that the levy collectors are civil servants due to the state financial regulation and conditions.

Figure 17 UPT Kebon Polo Traditional Market Organizational Structure
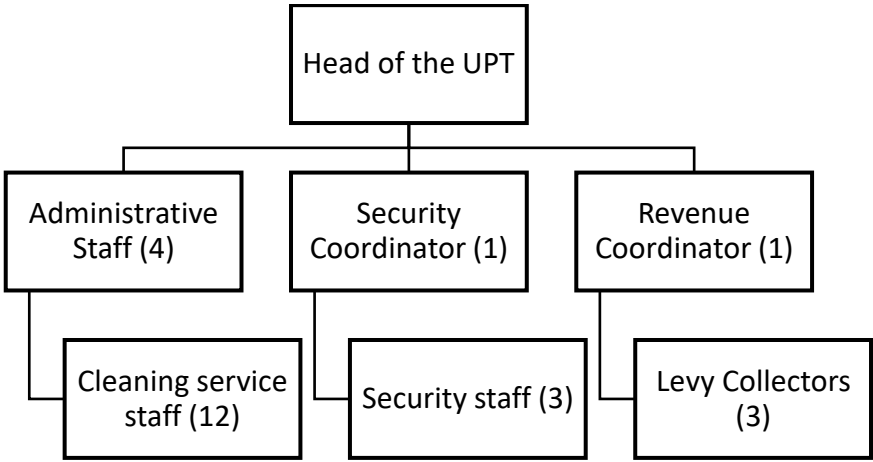
Visualized from (UPT Pasar Kebon Polo, 2017)

There are three types of space facilities that the city government provides in the traditional market: a) Kios[47]: a permanent space equipped with roof and walls; b) Los or semi-permanent Kios: semi-permanent space without roof and walls; c) Pelataran/Lesehan: impermanent space of trading without roof and other facilities. In Kebon Polo traditional market there are 187 Kios, 385 Los, and 53 Pelataran units

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[47] The kios in Indonesian or Javanese is originally adapted from the word kiosk, the Dutch language for stall, shop, stand, or booth. It then has been absorbed in Indonesia and the Javanese language as kios.

(Disperindag, 2019, p. 7). Kios is often bigger than Los and Pelataran. Referring to the Mayor Regulation Number 79 Year 2017 that regulates the management of levies, the traditional market levy was differentiated between Kios, Los, and Pelataran. Kios and Los owners have to pay a daily levy whether they open or close their business. Different treatment applies to small-scale merchants who sell their goods in Pelataran. In this case, they only pay when they sell their goods using the Pelataran spaces.

Figure 18 Space Facilities in Kebon Polo Traditional Market

Photo1 *Pelataran* (Source: Researcher 2020)

Photo 2 *semi-permanent kios (Los)*

Photo 3 *Kios* (Source: Author)

In October 2020, the city government has introduced an electronic-mediated technology for the levy collection to improve the levy collection process, known as e-

retribusi. Before implementing the e-retribusi project, the small-scale merchants in Kebon Polo traditional market could negotiate the payment of their levy with the levy collectors. From this practice, the levy collectors could gain unofficial income thereby creating a loss of revenue for the city. After the implementation of e-retribusi, levy collectors and small-scale merchants in Kebon Polo traditional market could not do their illegitimate practice.

The e-retribusi aims to achieve four formal objectives. Firstly, it seeks to pursue smartness and an efficient business process. The e-retribusi is one of the manifestations of the smart city project that exposes the use of IT and its innovativeness in conducting the traditional market levy collection in a cashless manner. The project's smartness consisted of substituting cash into electronic payments. The smartness also relates to resource efficiency. Like other e-government projects, the e-retribusi project is intended to reduce bureaucratic procedure and paperwork, thus, it is expected to attain resource efficiency. It also helped to solve a shortage of levy collectors the city government was facing due to civil service retirement (Kanugroho, 2019, p. 6). During an official meeting on e-retribusi implementation, a mid-level bureaucrat from Disperindag underscored the problem that his office faced, especially the lack of staff for levy collection:

> "As the levy collectors should be permanent employees (civil servants), we face staff shortage since the national civil service agency should approve the new recruitment. This year we lost three staff because of retirement. Next year we still do not know if the central government will allocate the levy collector vacancy." (Official meeting, 12 November 2020).

Given the situation, transitioning from human labor to electronic levy collection is an excellent option to address this issue.

The second objective is to reduce the fraud potential caused by levy collection using cash transactions. The changes from cash to cashless by exploiting IT hinders levy collectors from intervening and manipulating the levy collection processes. To that end, the city government hopes the project will increase the city's revenue from the traditional market levy collection. The project's third goal was to improve transparency and gain more trust in local financial management from both internal and external bureaucracy. Real-time and computerized transactions can achieve more transparent levy collection and reporting procedures. In addition, the city government can obtain the trust of small-scale merchants and financial audit institutions. The last objective was to increase the financial literacy of small-scale merchants. This was to be achieved by familiarizing the

small-scale merchant with e-money, charging e-money balances, and conducting non-cash transactions using the Electronic Data Capture (EDC) machine.

The Changes in Levy Collection Practice

Indeed, the practice of levy collection payment has been a mundane activity since a long time ago[48]. The small-scale merchants pay a certain amount of money established by the city government in cash, and the levy collectors collect the levy money. The e-retribusi project in Kebon Polo's traditional market has changed the previous levy collection mechanism. What makes a difference is the involvement of digital technology during the levy collection process. Within the e-retribusi, levy collectors in the Kebon Polo traditional market have not collected the levy in cash. Instead, they tapped the e-money owned by small-scale merchants using an EDC machine. By doing so, the small-scale merchants' e-money has been auto-debited. This means they directly paid cashless to the city treasury account in the local bank, named Bank Jateng. The following paragraph will elucidate in detail the changes in levy collection before and after the e-retribusi project.

The previous levy collection was manual. It means that levy collectors collect the levy payment in cash and administer the collected money into paperwork. The charge of the traditional market levy was classified by market classification from the 1st class to the 4th class. The classification was based on the number of merchants, building areas, location, and market facilities. This means that first-class markets are more prominent, crowdy, and offer more facilities than other lower-class markets. Thus, the levy charge is also more expensive.

Table 7 The charge of Kebon Polo Traditional Market

Type of marketplace	Charge	Unit
Kios	IDR 250 (EUR 0.015)	Per m2 daily
Semi-permanent *kios*	IDR 150 (EUR 0.010)	Per m2 daily
Pelataran	IDR 125 (EUR 0.007)	Per m2 daily

Source: Magelang City Regulation Number 17 Year 2011

The Kebon Polo traditional market is one of the 3rd class markets in Magelang City. According to the regulation, the total amount of the levy is calculated by the total area of space that the small-scale merchants use. For example, a merchant using a Kios having a

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[48] There is no exact period when the levy collection has been practiced in the Magelang traditional market. According to Emergency Law Number 12 Year 1957, local governments began legalizing the levies to finance cities and regencies. However, it is believed that the collection of levies in traditional markets was done long ago, during the colonial era before Indonesia's independence.

size of 4 m² has to pay IDR 1000 (EUR 0.06) daily. The Los or semi-permanent Kios's users with the same total space of 4 m2 pays only IDR 600 (EUR 0.04), while Pelataran users pay even less by IDR. 500,00 (EUR 0.03) per day).

Through this system, the levy collection mechanism was based on a financial target. The levy collectors were required to earn a specific amount of money as levy revenue and then sent the money to Disperindag. The staffs of the Disperindag office would send the levy revenue to BPKAD before it was transferred to the Magelang City Treasury's bank account. Here, the levy ticket plays an essential role as the primary financial control of the traditional market levy collection. For instance, a collector is given IDR 100.000,00 (EUR 6.5) as the target of his/her daily levy collection. Consequently, collectors must comply with the target by sending at least IDR.100,000 (EUR 6.5) to Disperindag. Suppose that the collectors get more money than the target set by Disperindag. In that case, they may (and often) keep the difference, since they have already achieved the target. In collecting the levy, collectors will provide levy tickets as the receipt for the levy payers.

Figure 19 The Levy Management Workflow using ticketing system
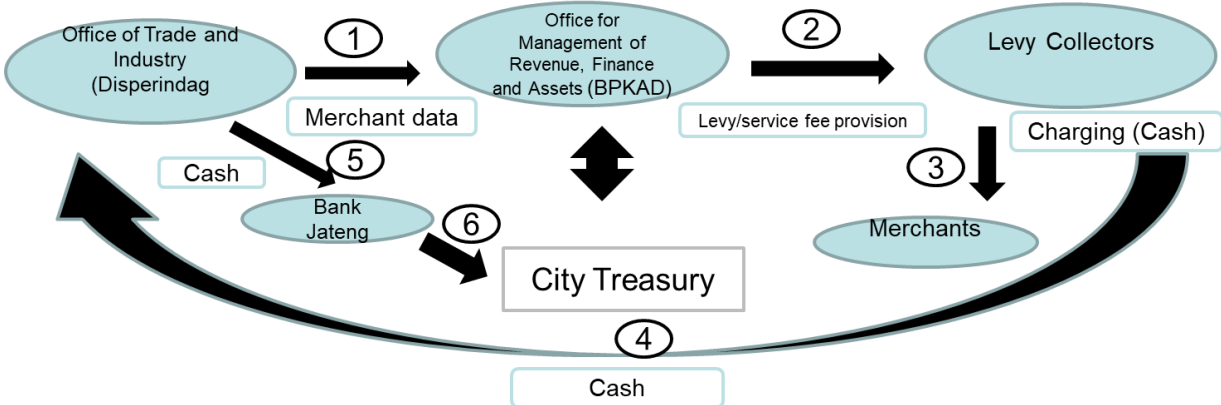
Visualized by Author based on interview and observation

The Achilles heel lies in the ticketing system. Within this scheme, the collectors may or may not give the tickets as receipts to the levy payers. There is potential that the collectors do not record the collected money in their levy collection account statement. Another weakness was the odd nominal or crooked numbers that resulted from the charging system. This created an opportunity for the levy collectors to round up the levies. For example, a merchant who uses a 5.5 m2-Kios must pay IDR 1375 (EUR 0.089) daily. In practice, the levy collectors rounded up the amount to IDR 1400 (EUR 0.091) due to the lack of IDR 25,00 (EUR 0.01) coins. In this case, they charge the daily IDR 25, which is

equal to EUR 0.01 difference. The case reported here illustrates that potential fraud may be caused by the weakness of paperwork and manual financial reporting. Thus, the IT-mediated levy collection system was launched to address this issue.

The ideal cashless levy collection procedure posits the e-money and an EDC machine as the transaction medium. This concept is characterized by the self-service procedure in which small-scale merchants deposit money on their e-money card and tap it into the EDC machine placed at several gathering points of the traditional market. As such, the role of levy collectors in collecting levies for the traditional market is substituted by the machine through self-service procedures.

However, in practice, the ideal self-service method has not been implemented due to various factors. Some of the most concerning issues were the lack of EDC machines provided by Bank Jateng and the potential of the non-compliant behavior from small-scale merchants. To cope with this issue, the city government still employs levy collectors to collect the levy in the Kebon Polo traditional market. They collect levy by door-to-door to visit the Kios, Los, and Pelataran and tap the merchants' e-money into the EDC machine they bring during the collection process. By tapping the e-money into EDC, the credit in the merchants' e-money is automatically debited.

Figure 20 The EDC machine and the e-money
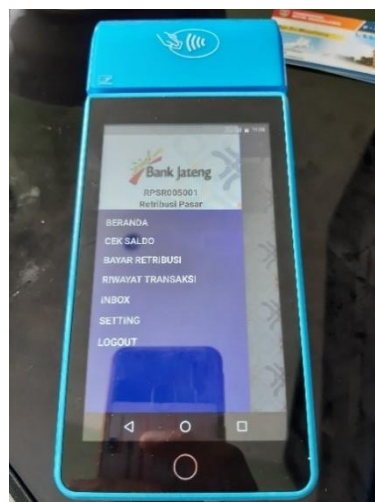
Source: Author's own documentation

The adapted procedure also requires an additional task for levy collectors. The new task is converting the physical money into e-money before levy collection process. The city government facilitated the process since it was impractical for small-scale merchants

to deposit their money in the bank or Automated Teller Machine (ATM). In so doing, the levy collectors help small-scale merchants to top up their e-money credit. Small-scale merchants entrust their cash to the levy collectors to be deposited into their e-money. The basic e-money rule requires that the amount of deposited money be more than the charging levy. For instance, when the levy charge is IDR 500 (EUR 0.32), the deposit in the e-money should be a minimum of IDR 501 (EUR 0.33). The levy collectors then pass the deposit money to the UPT's revenue coordinator, who will transfer the deposit to the e-money card. To that end, the smart levy collection is not totally cashless since the cash transactions still occur when small-scale merchants deposit their e-money through the levy collectors.

Figure 21 The Workflow after the implementation of the e-retribusi
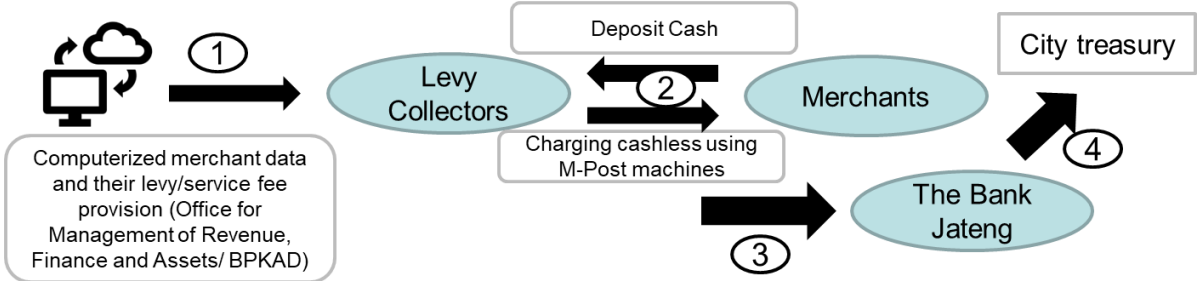
Visualized by Author

5.3 The Actors and Their Social Interface

The following part identifies the actors' configuration and elucidates their interaction at the social interface during e-retribusi project design and implementation. It begins by mapping the network of actors and their interests in the project. It continues by analyzing actors' different views on the traditional market as a social field. The analysis then moves to the elucidation of asymmetric relationships and interactions between actors with discrepancies of knowledge and power.

City Bureaucracy and Bank Alliance's Top-down and Technocratic Approaches

Given the potential fraud reported in the BPK's financial audit report, BPKAD prioritized the e-retribusi project as part of the Magelang Smart City program. The project involves the city government bureaucracy, a state agency, a bank, an IT company, as well as small-scale merchants and their associations. I identified 13 actors involved in the e-retribusi project. These actors also have their own interests in the project, thus shaping the interaction patterns and power relations between actors.

As the top leader of Magelang City, the mayor is liable for all city government's urban development projects, including the e-retribusi project. The project is also crucial for him to leverage his reputation as a mayor as well as a politician. Through the implementation of the e-retribusi, one of his promises to realize the smart project during his campaign was fulfilled. Other reputational advantages have also been obtained as the project can be regarded as an effort to eradicate fraud in the city's financial management. The mayor pushed his administration to execute the e-retribusi project quickly. As the city government inaugurates the project, the political benefits behind his interest find its momentum as the electoral and political currency.

Other actors involved in the project are the Magelang City's audit unit (Inspectorate) and the BPK. These organizations are interested in improving the city government's financial audit report. Before the e-retribusi project initiation, both audit units conducted financial audits and reported the potential fraud in the levy collection system. The more transparent and efficient procedure promised by e-retribusi has been a new hope for eradicating fraud and improving efficiency in the traditional market levy collection.

The focal point of the project consists of BPKAD and Disperindag. The project holds a significant position for these offices, especially as it is their responsibility to manage the city's revenue and public service delivery in the local economic sector. Since the e-retribusi project was one of the most visible Magelang Smart City programs, the project's implementation is considered the key performance indicator for the BPKAD's staffs and Disperindag officers. Besides increasing the city revenue through levy collection, the bureaucrats in the BPKAD and Disperindag aim to execute the cashless levy collection as soon as possible to address the political pressure from the mayor. To that end, they wanted a quick implementation as part of the Magelang Smart City project. This relates to their performance target and promotion opportunities that elevate their career in the city bureaucratic structure.

In realizing the project, BPKAD and Disperindag collaborate with a regional bank called Bank Jateng and an IT company named CV. Ekamatra Polygon. As the third parties providing infrastructure for the e-retribusi project, Bank Jateng and CV Ekamatra Polygon were private actors who acted as the project's contractors. Their main interest was the profit-seeking orientation through the services they provide to the city administration. As

such, they design the project to be a profitable project with efficient, low-cost resources, and rapid implementation.

I categorize the actors mentioned above as the management cluster due to their involvement in e-retribusi design and management. The e-retribusi project was led by the Head of the Revenue Unit from BPKAD, a mid-level bureaucrat in the Magelang city government, who built a team of individuals from various organizations. The key members comprised representatives from BPKAD, Bank Jateng, and CV. Ekamatra Polygon. The basic idea of the cashless collection system was, actually, a simple transaction. It aspires to change the levy collection practice from manual collection of cash and issuing of physical receipts to automated and real-time e-money transfers[49]. The IT-mediated information system allows data and financial transactions between small-scale merchants (citizens), levy collectors, city offices, and Bank Jateng. For levy collection, Bank Jateng has designed a closed transaction scheme, which can only be used for the levy transaction, but is not applicable for other financial means.

The back-office system of e-retribusi was designed by BPKAD and supported by CV. Ekamatra Polygon (Kanugroho, 2019, p. 85). The programmers from the company integrated the e-retribusi software into BPKAD's tax and levy information system (SI-retro). Once the software was ready, the programmers incorporated the payment system with Bank Jateng through a host-to-host transaction procedure. In the e-retribusi project, Bank Jateng provided the supporting hardware, including the e-money cards and the EDC machine, named M-Pos. The city government office's programmers, IT consultants, and regional banks built the SOP and the e-retribusi application design.

From the above exposition, it can be argued that interests among actors at the managerial level differ following their position and roles in the project. The mayor as a politician rides the e-retribusi project for electoral success and political benefits. These interests have pushed the involved city government bureaucracy to implement this project quickly to maintain the political momentum that the mayor had. In response, the bureaucrats not only facilitated the quick implementation, but also endeavored to achieve

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[49] I follow the e-money definition from the Indonesian Central Bank as a means of payment in the electronic form stored in the electronic media such as chips or servers (Bank Indonesia, 2020). Users have to deposit their money before using it for transaction purposes. The value of the transaction will reduce the value of the e-money stored in the electronic media. Once the value of e-money is empty, the user can put the money again by refilling the value of the e-money. The regulation of e-money in Indonesia can be found in the Bank Indonesia regulation Number 11/12/PBI/2009 13 April 2009.

their interest, especially to enhance their career through the performance accomplishments and promotion opportunity. The audit units aspired to improve the audit qualities. The project has also attracted the opportunities as profit-seeking for the private sectors who seek profitable projects.

Besides the managerial, this project involves operational actors. The operational actors run and operationalize the new system during the cashless levy collection process. The operating layer entails street-level bureaucracy and small-scale merchants; thus, they were regarded as the main executors of the project. The street-level bureaucracy is represented by the UPT Kebon Polo staffs, who interact directly with small-scale merchants as their clients. Similar to civil servants from BPKAD and Disperindag, the UPT staff's main interest is to achieve the key performance target for their work performance and accomplishment. As the levy collection executor, the successful project execution represents the achieved policy outcomes. Thus, this complies with the agreed performance contract and vertical accountability to their superior. Furthermore, they hoped that the cashless levy collection system will reduce their workload and facilitate more efficient business processes. In regards to the client relationships, the maintained relationship with merchants was also included as levy collectors' interest toward the e-retribusi project.

Other important actors were small-scale merchants who pay the traditional market levy daily. In Kebon Polo's traditional market, the merchants organize themselves in an association. All merchants are members of the association. This association represents merchants' interests. It facilitates the interaction with the UPT office and other city government offices. The merchants did not see any problem with the traditional cash-based levy collection and the potential fraud. They are rather concerned with the e-retribusi-policy forcing them to pay levy every day, even when their shops are closed. This means that the small-scale merchants have no holiday since the new system is set to collect levies daily. In this case, the main interests of small-scale merchants relate to the low fees for their levies and good service obtained from the UPT in Kebon Polo traditional market.

The actor-network mapping during e-retribusi design and implementation can be visualized in a network map. The visualization was drawn from the actors' relationships and interactions during project design and implementation. The network shows the

disjoint connections between the managerial and operational clusters. The managerial cluster entails a world of 'concepts', while the operational cluster emphasizes the world of 'practice', emphasizing the materiality of the traditional market, whether physical or interpersonal(Carnevale and Stivers, 2020, p. 48). In the case of e-retribusi, both the managerial and the operational cluster have not been well integrated. This leads to the estrangement between both clusters that obstructs dialogue and cooperation in project design and implementation.

Figure 22 Mapping e-retribusi Actors' Network
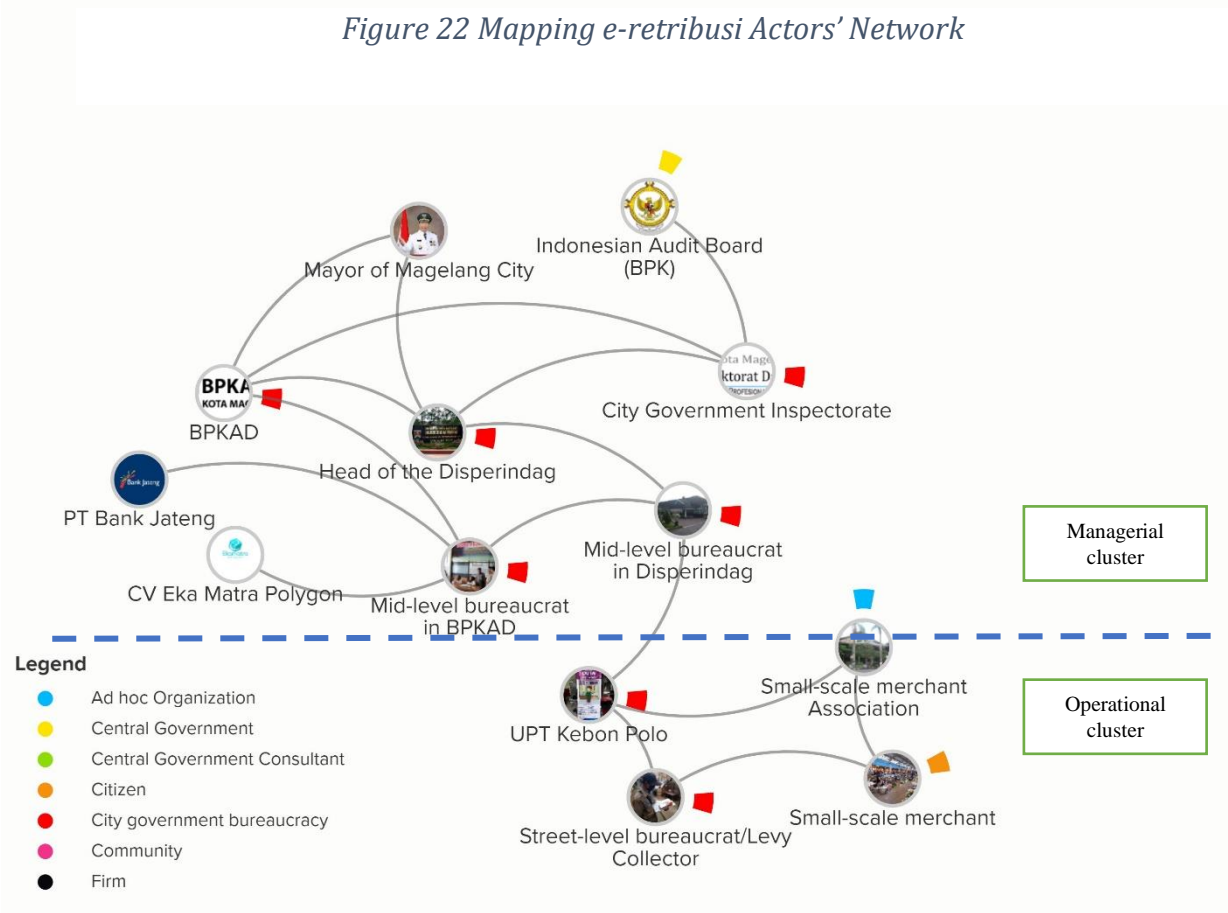
Visualized by author using kumu.io

Referring to the actors' network map, the project was designed and implemented in a top-down and technocratic approach. The digitalization process requires a technocratic system involving knowledgeable experts in the area of IT and financial administration and management. Additionally, the project requires technical skills and specialized expertise. As such, the project was led by the Head of Revenue from BPKAD, who had a managerial position in the city government office with expertise in city financial management.

Although involving various actors, the top-down approach was likely apparent during the initiation and execution of the project. The project decisions were mainly made by few key actors: BPKAD, Jateng Bank, and the IT firm. The mid-level officers in those organizations led the development of e-retribusi by exploiting their technocratic power. This kind of procedure left out other members, especially Disperindag, the UPT, the levy collectors, and the small-scale merchants, as beneficiaries of the projects. The e-retribusi project design was characterized by the dominance of key actors and the marginalization of peripheral actors.

The city government, through BPKAD, set the policy goals without dialogues and consultations with representatives of the operational actors' cluster. UPT and small-scale merchants follow the new regulation from the city government that the levy collection is transformed into an electronic system as instructed by Disperindag and BPKAD. Both the street-level bureaucrats and small-scale merchants have been told that the project aims to modernize the levy collection procedure. In this sense, the epistemic community of IT consultants, IT programmers, and local financial experts has worked within their circle. There was no dialogue and collaboration with the non-epistemic community, in this case, levy collectors and small-scale merchants.

Actors' Different Life-Worlds: The Traditional Market's Multiple Realities

To comprehend the social interface, we need to analyze the traditional market meaning-making as the arena of the e-retribusi project. As previously stated, the city bureaucracy primarily promotes traditional market in order to leverage local economic development, as part of its urban development strategy. However, this economistic focus contradicts local perceptions of the markets. My finding in the Kebon Polo traditional market reveals that various actors have different conception of the traditional market. Like previous studies in other Javanese cities have shown, the traditional market's role goes beyond economic rationality and commercial logic. Traditional markets entail socio-cultural dimensions such as social interactions (Aliyah, 2016), recreational activities (Aliyah, Daryanto and Rahayu, 2009), tourism (Aliyah, Yudana and Sugiarti, 2020), and can be even seen as a way of life (Geertz, 1963). In short, traditional markets in Java play an important role as a medium that accommodate social fabric.

Focusing on the actors' lifeworld may shed light on how they assign meaning to their livelihood and surroundings. In this sense, the lifeworld refers to the subjective

experience of reality perceived by actors as the result of their long and mundane interactions of social and natural dimensions. As the self-evident, unquestionable basis of all everyday lived experience (*Erleben*) and action, the life-world can be described only in terms of concrete subjective consciousness (Honer and Hitzler, 2015, p. 545). The lifeworld shapes how one sees the world (a view-of-the-world), drawing from life experiences dealing with everyday challenges and complexities.

In the context of e-retribusi, I embark on the subjective meaning of the traditional market where the smart city project takes place. In this case, Kebon Polo traditional market was the corporeality of the social field in which disparate interests, knowledge, and power interplay in implementing the e-retribusi project. Actors' meaning-making has shaped the ways policies on traditional market management are formulated and operationalized. Histories drawing from spatial and temporal dimensions best represent actors' life-worlds(Long, 2001, p. 241). In the following; I invoked actors'[50] stories about their involvement and experiences with the Kebon Polo traditional market to expose how different life worlds exist.

The small-scale merchants

The actors' perceptions are built from their phenomenological experiences, which are sometimes tacit, unconscious, historical, cultural, and granted by their living situation. For small-scale merchants, the Kebon Polo traditional market is not only the place to make a living, but also their second home. Here, small-scale merchants spend most of their productive time, around 10-11 hours per day. Furthermore, the majority of participants have strong connections to the trade and traditional market in their family's historical trajectories. For those who continue their parents' business, they became merchants as the profession inherited from their family. The embeddedness of the traditional market life has started from the children's age. They have experienced the life of and within the Kebon Polo traditional market since they were children, both physically and culturally.

The small-scale merchants in Kebon Polo perceived a traditional market not only as a livelihood but also as a socio-cultural endeavor. The livelihood here refers to the means of living; thus, it reflects the socio-economic dimensions. The notion denotes the profession or the job. At the same time, the socio-cultural dimension for small-scale

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[50] As part of the participant consent agreement and ethical considerations, the names of the actors dealing with the e-retribusi project presented in this chapter are pseudonyms. This also applies to the actors' names for the rest of this chapter.

merchants is a site for their social life facilitating social interactions and participation within the community and brother-sisterhood. Geertz's (1963) thesis proposed more than 50 years ago that the traditional market is a way of life, in which economic activities incorporate social and cultural life is still relevant. For the sake of conciseness, I draw two ethnographic accounts to represent the small-scale merchant perception of the Kebon Polo traditional market: Mrs. Tuti and Mr. Joko.

Mrs. Tuti is a 40-year-old clothier in Kebon Polo traditional market. She has worked in her profession for more than 25 years. She continues her parents' business, selling different kinds of clothing, be it batik (traditional Javanese clothes) or the modern ones such as pajamas, jeans, and T-shirts for all ages. Her parent passed down the Kios, the type of goods they sell, and even the loyal customers to Mrs. Tuti. She has experienced the Kebon Polo traditional market since she was around 14 years old, when she began helping her parents' business after she stopped secondary school. At that time, traditional market regulation was not strict, so that merchants could stay overnight. She understands both spatially and temporally, including the market history, physical transformations, and changes in the last 25 years. Due to her attachment to the place, her lifeworld has shaped the way she perceives Kebon Polo's traditional market.

In giving a meaning to the traditional market, she accentuated the market as her livelihood. As a clothier for more than 25 years, her career has been influenced, more or less, by the traditional market condition. In one of our conversations, she explicated that Kebon Polo traditional market influences her big family's economic and social life. Before having a place (Kios) in Kebon Polo, Mrs. Tuti's parents began the business by selling door-to-door. Her family struggled to have a decent life at that time. After her mother got the Kios in Kebon Polo, they secured many loyal customers (mostly villagers from the mountainous areas). She emphasized the role of the market by stating *"Our life (economically) got much better since we do business here."* (20 October 2020). Following the foot-step of her parents, her own family also makes a living from Kebon Polo.

Another meaning highlights the importance of the traditional market as the medium of social interaction. An insight came from Mr. Joko, who has sold fresh fish in Kebon Polo traditional market since 1979. Following his mother, who was also a fishmonger in the same market, he has experienced the life of Kebon Polo in the last 40 years. For him, the Kebon Polo traditional market is not only the place to earn money but also half of his social

life. He feels like a part of the small-scale merchant community in Kebon Polo. He travels around 40 km daily from his home. It indicates his attachment to his job and the place he works. Even though he administratively lives in the neighboring city, he has a tight social relationship with Kebon Polo market and Magelang city. He reckons his colleagues in Kebon Polo as his big family. Thus, the market is not only about how he makes a living but also the place where his social life is bound in a long-run social fabric. In the same vein, the intimacy between street-level bureaucrats and small-scale merchants has been formed through the continuous social engagement, besides the 'humane' connection between sellers and buyers (Aliyah, Yudana and Sugiarti, 2020, p. 88).

The levy collectors

The levy collectors and their colleagues who work in the UPT Kebon Polo share a similar perception of the traditional market with the small-scale merchant's. They perceive Kebon Polo traditional market as their livelihood and medium of social interaction. The UPT staffs also spend their daily life in the traditional market. Unlike other city government employees who come to the office from Monday to Friday, the UPT staffs go to the traditional market every day following the market's operational schedule. The levy collectors were rarely transferred from and to other city offices due to their low-level educational background. Their tour of duty often occurs from one traditional market to another. Consequently, they familiarized themselves with Magelang City's traditional markets. Their engagement with the market has shaped how they see the traditional market-world. This may be attributed to the mundane activities throughout the life span of their professional-civil service tenure.

The life story of a street-level bureaucrat has reflected the meaning of the traditional market for them. Mr. Ahmad is a 56-year-old traditional market levy collector. Before joining the civil service, he worked as a non-permanent employee for the Magelang city government for 15 years before being appointed a civil servant in 2005. In total, Mr. Ahmad spent 32 years of his professional life in the traditional markets. As a non-permanent employee, he had worked as cleaning staff in the Rejowinangun and Gotong-royong traditional markets. He was transferred to Kebon Polo after his appointment as a civil servant. Since then, he has worked as a levy collector. For him, the traditional market is his workplace, a place to earn money and make a living that sustains his family. Having a strong attachment to traditional market life, he also feels that the market has become his second home, where he weaves social connections. He reflected on the solid social

relationships through the cross-cutting affiliations, which accommodate UPT staff and small-scale merchants. These affiliations can be in religious associations and social clubs such as fishing, motorcycle touring, and traveling[51].

The City Bureaucracy

Different realities transpire in realizing the traditional market within the city's internal bureaucracy. Policymakers, urban planners, and mid-level bureaucrats from BPKAD and Disperindag seem to bring up a divergent meaning in interpreting the traditional market. These actors spend most of their duties behind their desks in the city offices rather than experiencing face-to-face interactions with small-scale merchants in the traditional market. Their lifeworld denotes the public administration at the city government level embodied by physical offices, desks, regulations, SOP, paperwork, statements of accounts, accountability reports, and other administrative duties. Bureaucrats see the traditional market as it is represented in reports, statistic-numerical datasets and figures, policy memos, economic planning documents, and blueprints. Technical aspects shape the traditional market meaning-making within the Magelang city bureaucratic institutions.

The bureaucrats from BPKAD simply perceive a traditional market as a place for trading activities. The physical marketplace facilitates the meeting point between sellers and buyers. This shallow meaning reduces the traditional market to a source of city revenue. The existence of the traditional market not only provides levy from the sellers but also generates other revenue opportunities, as levies and fees are collected for parking services, toilet & bathroom facilities, transportation, and unloading and loading goods. This logic drives the traditional market's prominent standing as the revenue generator for the city government. BPKAD, as the city's chief financial officer, has set the e-retribusi project as the city's policy priority to optimize financial management and accountability.

Disperindag, as the operating office, however, perceives the traditional market not only as the city's revenue generator but also as a public service facility for citizens. Regarding its functions, Disperindag deals with the management of marketplaces in the Magelang city, including the market cleanliness, security and order, and the maintenance

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[51] In some traditional markets in Magelang city, the UPT staff and the merchant association organize an event such as the religious pilgrimages to neighboring cities and traveling activities once a year.

124

of market infrastructures. To that end, this office has multiple responsibilities aside from collecting traditional levies for the city's revenue. The social element of the public service that traditional markets offer relates to the favor of lower-middle citizens, especially small-scale merchants in sustaining their daily lives. Policies and local government interventions have also been executed to empower local economic development by maintaining traditional market existence. For instance, the city of Magelang has suspended the new shopping mall and mini-market development since 2010. At the same time, the office also initiates other programs by providing information, support, and financial access to the small-scale merchants who run their businesses in the Magelang traditional markets (Disperindag, 2020).

The Bank

Bank Jateng is the provincial government-owned regional bank that operates at the provincial level. Its involvement in the e-retribusi project related to the government's financial cooperation. Most of Magelang City development projects are financially supported by Bank Jateng. The bank is also part of the Magelang Smart City Council by which strategic smart city development policies are formulated. In this sense, the bank acts as a development partner for the city government in administering and financing urban development in Magelang City.

Like other initiatives to digitalize local government's financial systems, Bank Jateng considers the e-retribusi project as a new potential business line. The bank can use the data, information and contacts and infuse its financial products. The e-retribusi project has opened opportunities to expand the bank's financial products and services to small-scale merchants in Magelang's traditional markets. A new group of customers has emerged due to the implementation of cashless payment in traditional market levy collection. In short, Bank Jateng views the traditional market as the new marketplace for financial services. Thus, a business expansion opportunity evolved when the local government implemented this digitalization project. A concrete collaboration between the bank and the city government was signaled by a memorandum of understanding and hardware support by Bank Jateng, such as mobile point of sales, e-money card, printers, and virtual bank office platform (Kanugroho, 2019, p. 28).

The IT Firm

While Bank Jateng provides hardware for the e-retribusi, the IT company named CV. Ekamatra Polygon developed the software. The company is based in West Java and has a strong reputation for assisting e-government and digitalization projects within public sector institutions, especially in local government bureaucracies. In general, the utilization of IT in government is also seen as a business opportunity for IT companies. As such, almost all public services related to digitalization and the like can be seen as their market potential. Similar to Bank Jateng, this company perceives the traditional markets as merely commercial entities. Digitalization of traditional market activity through IT-based levy collection has opened a new business opportunity for the company. With this in mind, the company acted as an IT contractor that provided technical services regarding e-retribusi software development.

Figure 23 Different Realities of Kebon Polo Traditional Market as The Social Field
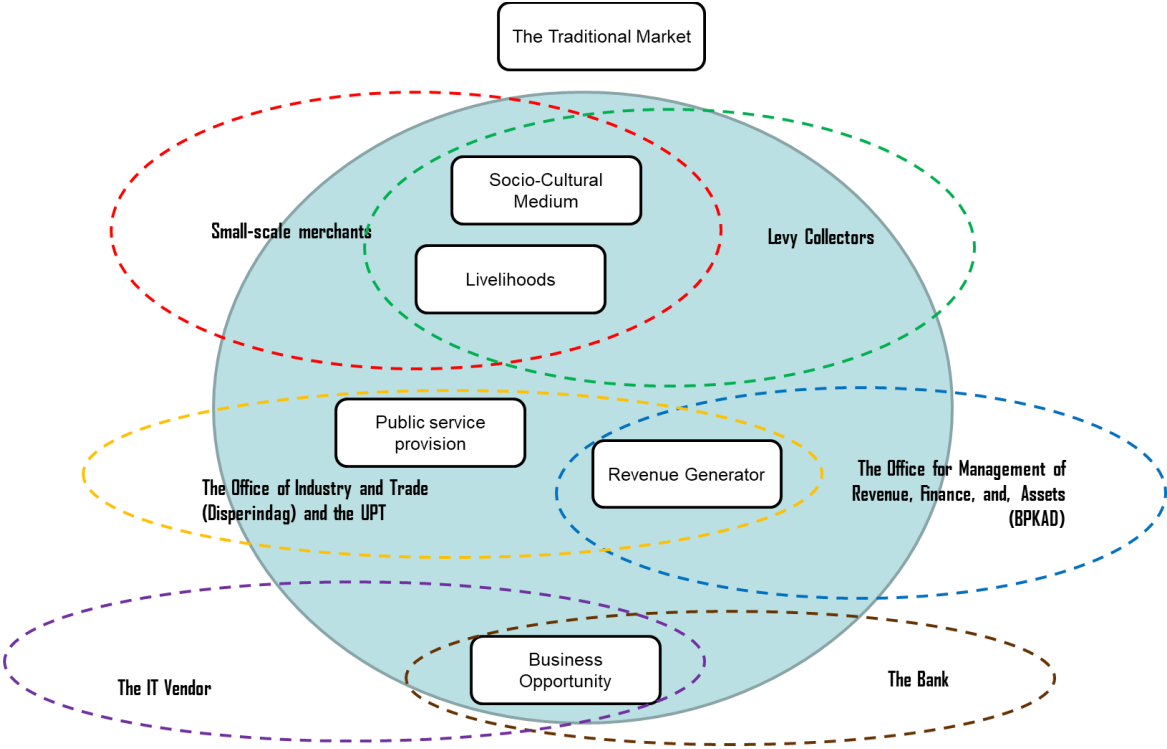
Source: Visualized by Author

The Clash of Knowledge and Power: Techne, Metis, and the Bureaucratic Culture

The social interface accommodates interactions between actors with different knowledge that determine how social actors engage with the social reality they

experience. Following Long (2015, p. 42), the concept of knowledge refers to the idea about oneself, other people, and the context in which social interactions occur. My interactions with e-retribusi actors have revealed typical and divergent perceptions of how actors view others and the system implemented in their daily social setting. Borrowing Scott's (1998) terms *Techne* and *Metis*, the battle of knowledge between actors occurs at the interface between cognitive-technical (*Techne*) and practical-experience (*Metis*).

The knowledge gap between mid-level bureaucrats (the project managers) and street-level bureaucrats (the project implementors) was apparent inside the city bureaucracy. The former employs the power of concept via strategic plans, instructions, procedures, and standards, while the latter engages felt sense, experiences, tacit knowledge, and coping strategies in doing their day-to-day job accomplishment (Carnevale and Stivers, 2020, p. 3). The management sometimes ignores, intentionally hides, or if not, fails to acknowledge the discrepancy of knowledge to speed up the project design and implementation. For instance, a levy collector in Kebon Polo traditional market reported the challenges he faced due to the uninformative printed receipt as the proof of payment[52]. Instead of using the feedback to enhance the printed receipt, the management did not do anything to address this issue. One of the most obvious reasons was political pressure. The mayor's administration politically demanded the project to become operational quickly as it had been greatly promoted, and thus it was regarded as the key indicator for the performance of the Magelang city mayor before he ended his office term in May 2021.

During the project implementation, there was a lack of knowledge exchange and dialogue with each other. Both managerial and front-liners' knowledge were detached, thus leading to managerial bias and asymmetric power relations between the actors. For instance, the design of cashless levy collection procedures was fully developed by mid-level bureaucrats and IT consultants without the involvement of levy collectors. As a result, the design did not address the demand of the levy payers. A levy collector stated "*People find it difficult to interpret, for instance, the levy receipt. If they asked [us] before,*

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[52] Conversations with levy collectors in Kebon Polo traditional market 14, 20, 25 November 2020

we would tell them what [kind of receipt] the merchants want". (Fieldnote, 28 October 2020).

The actors classify, code, and assign the meaning of levy and its collection structure to their social experiences. This is mainly constructed from the previous idea, beliefs, and social interactions with and within others (Long, 2001, p. 189). To illustrate the interplay between knowledge and power, I portray how actors discern and experience traditional market levy and its transformation from cash to cashless collection system mediated by digital technologies. These actors perceive and comprehend the concept of levy in a different way. Referring to the actors' network and cluster, the managerial cluster understands the levy concept more accurately than the operational one. While management cluster interprets the levy as reciprocal public service obligation, the operational staffs interpret the levy as tax *per se*. This also occurs in grasping the levy collection procedure, where the operational actors do not understand the business process and mechanism inside of the cashless collection within local fiscal management system.

As policy makers and project designers, the upper and middle-level bureaucrats view the levy as the fee collected by local government in return for services. An interviewee even explains in detail the levy principle, the regulatory framework, and its applications.

> "Levies are not mandatory for local governments. Of course, those with sufficient finance do not need to charge levies to citizens. In the case of our city, the local budget has not sufficed to deliver certain public services. Here, we charge a levy as a service fee for specific public services delivered by the city government, including traditional market facilities. We refer to the City Regulation Number 3 Year 2017 and the Mayor Regulation Number 79 Year 2017 as the regulatory and implementation guidelines. According to these regulations, levy payers pay the levy, and the city government delivers the services to them. The implementing agency's standard operating procedure further elaborates its collection and reporting system in detail (5 October 2020).

This understanding puts the phrase 'fee' and 'service' at the crux of the traditional market levy. The service fee requires the local government to provide service for those who pay the levy. This also means a reciprocal and direct relationship between levy payers and local government as service providers. In the traditional market, small-scale merchants reserve the right to receive service provisions from the city government, such

as cleaning services, market security, and public information regarding trade affairs. This viewpoint is the ideal definition for state regulation, especially Law number 28/2007, regulating Taxes, and Law number 28/2009 on Local Taxes and Levies.

The operational cluster views the levies inaccurately. The levy collectors in the Kebon Polo traditional market could not differentiate between taxes and levies. For them, levies are the other name of taxes and vice versa, in which the small-scale merchants have to pay dues or contributions. This conception implies that they tend to equate levy with taxes and rent for the marketplace and use traditional market facilities. A levy collector said, *"What I know (about levies) is that I collect the money, pass it to the office." (7 November 2020)*. His statement indicates the knowledge differentials regarding the local government's financial regulations and procedures within the city bureaucracy. Another statement resonated with this fact when a levy collector answered my question about the levy as 'a city government revenue'. Both conceptions did not mention the excellent public services in the traditional market. Thus, this is not surprising that many local governments failed to provide satisfactory services in return for traditional market levy payment (Akhmadi, 2007; Rahadi, Prabowo and Hapsariniaty, 2015).

Like levy collectors, the small-scale merchants view the levy as a civic obligation to contribute small amounts of money to the city government. During the unstructured interviews and conversations with several small-scale merchants, I asked a question about levies. What terms that emerged in their minds when they heard the word levy? Based on their answers, I identified the expressions and terminologies associate with levy such as "pajak" [taxes], "pungutan" [dues], "biaya" [fee], "ongkos" [charge], "uang" [money], "karcis" [ticket], "membayar" [to pay], "sewa" [rent]. These words reflect an insufficient and inaccurate understanding of levy close to the concept of "beban" [burden]. It also indicates the misconception of levy which equally interpreted as taxes.

The levy is perceived as a burden for small-scale merchants without realizing that they ought to get excellent service for their payment. In this case, they do not know their rights as levy payers since they were rarely procured and witnessed sufficient services by the city government. The services include security, cleanliness, infrastructure maintenance, marketplace facilities such as toilets, prayer room, and parking management. Their understanding was also shaped by previous beliefs and experiences that led to their cultural frame about the relationships between government and small-

scale merchants at the traditional market. The patrimonial bureaucratic culture leads to the patron-client relationships between government and citizen, where the former subordinates the latter.

Another critical point is the knowledge transfer process about the new levy collection business process. During the implementation of the e-retribusi, there was a lack of evidence on the ideal knowledge process involving dialogue and communicative process among actors, as suggested by Long (2001, p. 71). The segregation and isolation of the knowledge process occurred since no bridge connects between 'experts' and 'laymen'. In the case of e-retribusi, the IT experts received an order from the local financial experts without addressing the tacit knowledge of levy collectors who execute the project in the field. Middle-level bureaucrats and their consultants dominated the core concept of cashless collection and dominantly set up the business process. They did not exchange or transfer their knowledge to levy collectors and small-scale merchants. It differs from what Offenhuber (2019) found in Jakarta and Surabaya Smart City Platform Project, in which administrators respond and adapt the project to local needs and their social context by practicing improvisation. The improvisation was driven by the open interactions and dialogues between smart city actors, including residents. This resulted in the evolution of urban data platforms and infrastructures, which was not evidently found in the case of the e-retribusi project.

The knowledge process; thus, experiences so-called 'bottle neck'. The *techne* from the managerial rationality could not meet and discuss with experiential knowledge from levy collectors and small-scale merchants. As such, when there is a question regarding the levy collection business process, levy collectors cannot answer this question accurately. In this case, the ideal role of street-level bureaucrats as 'development broker' or 'intermediaries' or 'middle-man'; thus, could not be achieved. The bottleneck in the knowledge exchange process is entangled with the power relations and the distribution of resources. The powerful actors may use their authority, often knowledge, and expertise, to mobilize the development resources (Long, 2001, p. 242).

One of the best ways to investigate this entanglement is to revisit the actors' network (sub-Chapter 5.2) and link it to the knowledge process. The analysis has shown the dominance of BPKAD in the central knowledge process and power configuration. Several facts can identify the overwhelming authority exercised by this office. Firstly, as

the initiator of the e-retribusi project, BPKAD is the organization that creates, designs, and navigates the cashless system and its business process. Consequently, it controls the e-retribusi system managerial features through which resource mobilization occurs. For instance, the e-retribusi system maintenance requires sufficient funding, for which the city government allocates an annual budget for this office.

Secondly, the IT system, including the hardware, software, fireware, and brainware (the IT administrator), is managed by BPKAD. Consequently, all IT operations can only be carried out with the BPKAD's authorization. The Disperindag and the UPT office, as the operational agencies, have no authority in managing and controlling the system. This creates a technical dependency and managerial sub-ordination between BPKAD, Disperindag, and the UPT office. The street-level bureaucrats who work in the UPT Kebon Polo are even more powerless since they do the day-to-day job depending on the IT system. If technical errors happen, levy collectors are responsible for handling the issue. The most powerless actor is the small-scale merchant. They can do nothing except pay their levy as obliged by the system.

The bureaucratic culture aggravates the actor domination and asymmetric power relation. The civil service hierarchical structure and division of labor have divided 'Orang Kantor' and 'Orang Lapangan' within the city bureaucracy. 'Orang Kantor' refers to civil servants who deal with administrative, managerial, and paper-related works. They mostly work inside the office building and sit behind the computer desk. Despite the civil service rank, whether they are echelon or low-level staff, 'Orang Kantor' are more respected by society. In comparison, 'Orang Lapangan' denotes the city government employees working outside the office building. In this case, it includes the traditional levy collectors.

On the one hand, 'Orang Kantor' tend to disparage 'Orang Lapangan' due to their low educational background and civil service rank[53]. On the other hand, 'Orang Lapangan' enjoy their inferior position, assuming 'Orang Kantor' are more superior. The informal partition leads to the superior-inferior relationships between 'orang kantor' and 'Orang Lapangan'. In professional interaction, 'Orang Kantor' possesses more power and authority than 'Orang Lapangan'. As a result, it creates powerful-powerless dichotomy

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[53] The educational level and civil service rank often determine the civil servant position and the job desk. For instance, all levy collectors in Kebon Polo traditional market are low-level civil servants with junior high school graduates.

inside the city bureaucracy. A segment of conversations with levy collectors below illustrated the relationship between 'Orang Kantor' and 'Orang Lapangan'.

> A: "Civil servant, like us, who work in the field differ with those sit at the office".
> B: "*Orang Lapangan* differs from *Orang Kantor.*"
> C: "What makes difference?"
> A: "A lot, they have higher grade than us, paid better, and work less."
> B: "True, we work almost every day, they go to the office 5 days a week and less physical tasks too."
> A: "We should aware that they are more educated and more competent so that they can sit there [in the office]. We follow their instruction as they manage our career, salary, and allowances."
>
> (Unstructured interview/conversation, 4 November 2020)
>
> (A= Levy collector 1, B= Levy collector 2, C= author/researcher)

The domination and subordination not only occurred inside the city's bureaucracy. The interaction between levy collectors and small-scale merchants also indicates such relationships. One possible driver is the state-citizen relationship characterized by patronage, clientelism, and brokerage (Berenschot and van Klinken, 2018; Berenschot, Hanani and Sambodho, 2018). Its path dependency has been experienced, inherited since pre-colonialism (Ito, 2017, p. 54), and nurtured during the Soeharto era (Nordholt, 1987). Most Javanese regard civil servants and people who work for the government as 'priyayi' [54] who have higher status in the neighborhood and community.

Given these backdrops, the small-scale merchants see themselves as the common masses or 'wong cilik' (little people) at the lower level of social pyramid. They compare themselves to levy collectors as little 'priyayi' since they represent the state and government bureaucracy. The interview with small-scale merchants in Kebon Polo validated this fact. A small-scale merchant gave her insight as follows:

> "We, as wong cilik, are always lost when facing government officials. Not only here (Kebon Polo traditional market) but also anywhere, in the village, sub-district office, hospital, on the road, anywhere…Sometimes, we do not have any courage to argue with them. We have lost from the beginning. In other cases, we can negotiate with them, and it is fortunate when they help to solve our problems.

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[54] The 'priyayi' formerly refers to the royal family members in the Javanese kingdom. It then shifted to the elite class who acted as administrators during Dutch colonialization and continued until now to entitle civil servants and government officials. The term priyayi also contrasts with ordinary people or masses (wong cilik). For more elaboration on priyayi, please see Sutherland (1975) and the relationship between Javanese merchants and priyayi: *Competing Hierarchies: Javanese Merchants and the Priyayi Elite in Solo, Central Java* (Brenner, 1991).

If this is the case, it also makes us reticent and cagey to confronting them." (11 November 2020).

In addition, levy collectors often act as mediators when merchants have problems and issues with the city government. For instance, during the COVID-19 pandemic, the national government facilitated the small-scale business by issuing compensation for the small-scale merchants. Due to unreliable data, some of the merchants could not get the benefit from the program. These merchants asked the levy collectors to help them in getting the COVID-19 compensation from the central government. This signifies the patron-client relationship between both. As such, clientelism occurs between levy collectors and small-scale merchants in which power of influence emerges. In the e-retribusi project, the small-scale merchants are at the bottom of the power-hierarchical pyramid, where they comply with the rule and follow the new system.

5.4 The Implementation Dynamics

The implementation dynamics denotes the social and practical changes after the new levy collection system and the way the actors deal with such changes. This sub-chapter further analyzes the implementation complexities by scrutinizing actors' lived experiences and maneuvers. These dynamics reflect the juncture of the social interface where actors' different realities and their social fields intertwine.

Levy Collectors Lived Experiences and Their Dilemmatic Positions

When the levy collectors first implemented the new collection system using the EDC machine and the e-money card, they experienced both technical and non-technical challenges. At the beginning of the project trial, they encountered technical errors. The machine sometimes could not read the e-money card due to unstable internet connections, computer server issues, and software bugs. The system functioned perfectly after the launch of e-retribusi by the mayor on 26 October 2020; however, these technical errors occurred again during the next two months of its implementation. I observed that the system contended and failed to work. It was indicated by six incidents during my internship in the Kebon Polo UPT between 15 October 2020 to 30 January 2021.

Figure 24 An Example of Technical Error Display
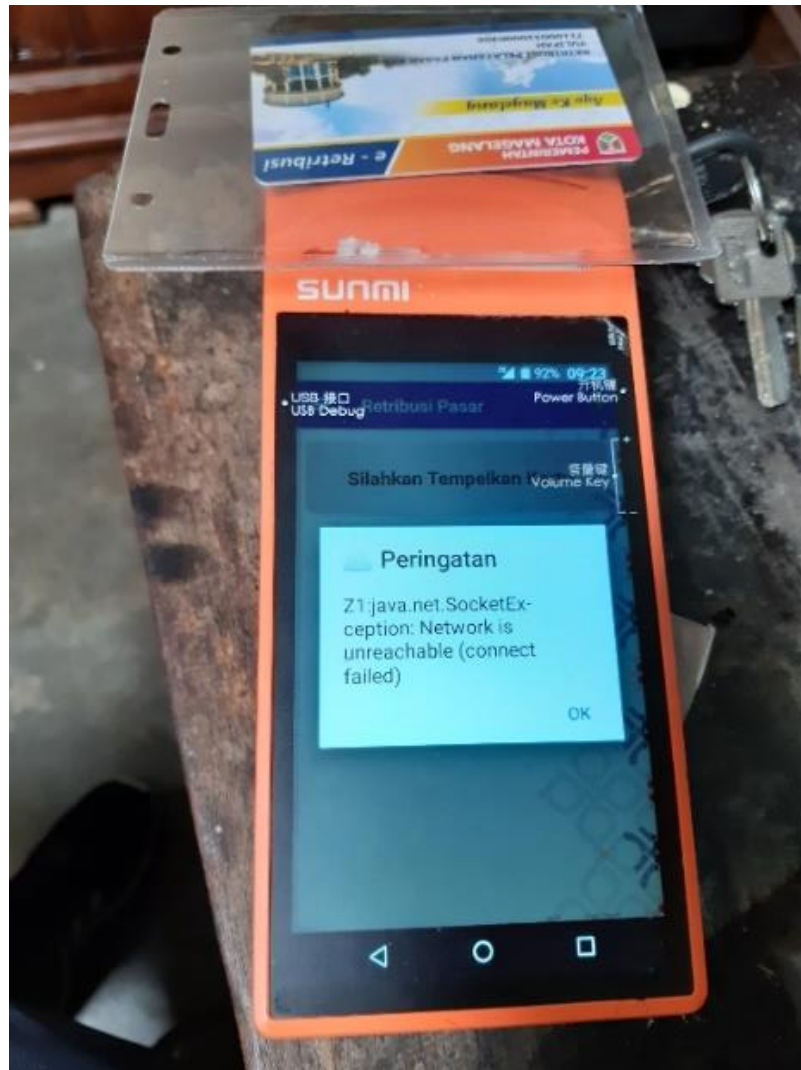
Besides technical issues, there were also non-technical challenges that conveyed confusion and misinterpretation from the small-scale merchants. Some small-scale merchants often suspect that the EDC machine is being manipulated for personal financial benefits. The failed transactions during technical errors, directly or indirectly, induce small-scale merchants' doubt and suspicion about the new system's efficacy. One of the small-scale merchants complains was the perceived risk of failed transactions in which they may lose their money. This incident demonstrates the project's dependency on the IT infrastructures, which may drive technological subordination. During my observation, I witnessed the competing arguments between levy collectors and small-scale merchants regarding technical errors and how this may affect cashless levy collection practice. To

that end, the technical and non-technical challenges are interrelated, and the IT infrastructure in e-retribusi has shaped how the project is implemented.

The levy collectors have experienced fundamental changes in the levy collection procedure as their everyday social practice. On the one hand, the project has streamlined the collection process and minimized the risks of financial burdens such as calculation errors, losing some cash of the levy, and binding the daily levy target. On the other hand, it also generated paradoxical outcomes. The system reduces the time for collection and processing; however, it has also increased the administrative tasks. It also leads to a strict and rigid implementation that diminishes social interactions and the 'humane' dimension. In this sense, technology has removed or at least diminished the affection and corporeality of everyday urban life (Datta & Odendaal, 2019, p. 389). The introduction of e-retribusi has also engendered a street-level bureaucrats' dilemma (Lipsky, 2010). They face a dilemma in serving small-scale merchants as citizens and conducting everyday duties to maintain vertical accountability to their superiors from the city government. In bringing the empirical evidence, I depict two sketches of levy collectors' lived experiences in dealing with the utilization of the new technology in their daily task.

The first illustration comes from Mr. Amir, a 40-year-old levy collector in Kebon Polo's traditional market. He previously worked as a non-permanent employee in the Gotong Royong traditional market and got his tenure as a civil servant in 2008. Thus, he has been in charge of traditional market levy collection for more than 13 years. His tour of duty allows moving from one traditional market to another in the city of Magelang. He was just transferred to the Kebon Polo traditional market in 2015. Experiencing more than six years in Kebon Polo, he familiarizes himself with Kebon Polo's everyday life. As such, he knows almost all the names of merchants and the goods they sell.

As a young civil servant, Mr. Amir acknowledges the digital technologies that proliferate in daily life. He quickly adapted the smart-mediated levy collection using an EDC machine and e-money. He collects the levy from 315 merchants in Kebon Polo with two other levy collectors. This means a levy collector is responsible for about 105 merchants in this traditional market. For him, the cashless system has simplified the collection process so that he can save more time and finish faster than the previous procedure. Although he never precisely measures the efficiency, he feels that the system speeds up his work. He used the break time for day-prayer, at 12.00 as the benchmark. He

admitted that he finished his job earlier, after the implementation of e-retribusi. Unlike previous practices that require him to count the money after collection, the new system only requires levy collectors to tap the e-money into the EDC machines.

In addition, the adoption of cashless levy collection has relieved his job risks, especially the potential of losing the money he collected and freed him of the daily levy target. He compared the situation before and after the e-retribusi project regarding the levy financial risks. The previous system allows him to self-manage the cash from levy collection as long as the daily target had been achieved. He had a financial advantage if the cash he collected exceeds the levy target. In that case, he could use[55] or save[56] the money, if he cannot achieve the levy target on the next day. However, it also creates pressure within his job to meet the levy target given by the city government consistently. The financial burden has been diminished by implementing the IT-based levy collection since the collectors are free from the daily levy target.

Another sketch, yet different emphasis, was drawn from Mr. Ahmad's experience as a senior levy collector in the Kebon Polo traditional market. He started his career as a cleaning service staff at the Rejowinangun traditional market in th1990's and has been transferred to various traditional markets across Magelang city. Since 2005, his tenure as a civil servant has been granted, and he has been in charge of the levy collection in the Kebon Polo traditional market. Having collected traditional market levy by cash for decades, the introduction of a smart-mediated IT system requires him to learn how to operate the EDC machine and the e-money card. In the beginning, the system staggered and disrupted his previous habits; thus, he needed more time to familiarize himself with the new procedure.

For Mr. Ahmad, the change from the target-based to the real-time collection scheme has transformed the social relation in the levy collection practice. Different from Mr. Amir's lived experience, the machine has widened the social distance between levy collectors and small-scale merchants. Being mediated by the machine and e-money, he

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[55] Practically, it is common to use a small amount of money as an extra. For instance, to buy some drink or smoke, known as 'uang rokok' or loosely translated as money for smoke, which is permissible by the community although it is not legitimate. Some conversations with other levy collectors confirm this phenomenon.

[56] Some levy collectors may use their own money to comply with the daily levy target. This rarely happens constantly but often occurs depending on the regular cycle. For instance, at the end of the month, the traditional market is quieter, and so do the economic activities in the traditional market. Often, more small-scale merchants do not pay the levy or do not open their marketplace.

felt awkward using a new technology that assisted his task. He feels that what he is doing now is different from what he used to do in the last 15 years. The intimate connection with the merchants has slowly faded due to the smart levy collection rigidity. For instance, he can no longer allow small-scale merchants who cannot pay the levy to remain unlevied. If a small-scale merchant cannot pay the levy or has not yet deposited money in the e-money card, the system will debt and accumulate, and he will be required to pay the next day. This means that the levy should be paid daily, regardless of what happens. Before implementing e-retribusi, he can use his discretions to tolerate such cases.

He also feels that the rigid system has led to the dehumanization of public services, neglecting emotions and empathies. The machine could not tolerate any circumstances, since the system was told to do so. He once recalled a case that happened by one of the small-scale merchants whose Kios was closed due to electrical failure. Although the Kios was dysfunctional, the daily levy still applied. The system was so inflexible and could not adapt to the random incidents that small-scale merchants regularly face. He shared his empathy with the affected small-scale merchants, but could not do anything to help.

The levy collectors in Kebon Polo traditional market face the public service dilemma in their everyday duties. Both Mr. Amir and Mr. Ahmad experienced the dilemmatic and challenging situations as the front-line officers, who deliver public services, in the traditional markets. The dilemma consists of, on the one hand, having to deliver excellent public service to small-scale merchants and, on the other hand, strictly following the rules and target set by the city government. The dilemma, thus, is how to maintain accountability and loyalty to both parties without breaking the rule and regulations.

Before implementing the cashless levy collection, levy collectors could tolerate their clients. For instance, levy collectors postponed the payment from small-scale merchants or let them not pay it on a certain day(s). This could be done if the daily levy collection met the revenue target. Therefore, the levy collectors could use their discretion and operational autonomy to achieve bureaucratic goals and to serve their clients (Lipsky, 2010, p. 26). The intimate relationship between levy collectors and small-scale merchants built from day-to-day interactions has driven a non-formal coalition of public servant and citizens. The intention of helping small-scale merchants often emerged spontaneously, consciously or unconsciously from the levy collectors. An unstructured interview with

one of the levy collectors revealed that, as a street-level bureaucrat, the levy collectors sympathize with small-scale merchants.

> "Other colleagues and I can also feel what the small-scale merchants feel. When fewer people shop in the traditional market, we assume that the merchants get fewer customers. I feel pity for them. I sometimes selectively help, especially those in need, mostly the old merchants. Today, I will not collect the levy from you! You can pay the levy tomorrow! I said to them." (17 October 2020).

When the traditional market gets quiet and the economic activities move slowly, levy collectors can understand the situations and adapt their levy collection practice to relieve their clients from one of their burdens within the public service delivery context.

Their high-degree of discretion and individual autonomy has diminished once the IT-mediated system came into play. The usage of the EDC machine and e-money is dehumanizing the public service at it disallows frontline bureaucrats to exercise discretions. The model of human interactions shown by the previous levy collection practice has changed into the mechanical-detachment service delivery model. The discretion vanished, substituted by the automation and real-time transaction. This finding implies Lipsky's (2010) extending preposition that discretion and autonomy of street-level bureaucrats generate street-level bureaucrat's dilemmas. Diminishing their discretion and autonomy through the use of digital technologies and automation still could not totally lessen dilemmatic positions for street-level bureaucracy.

Small-Scale Merchants Unenthusiastic Responses

The small-scale merchants are supposed to be the main beneficiaries of the project. They experience the cashless levy collection system together with the levy collectors. Before the trial session, not all merchants were well-informed about the operating procedure of the cashless levy collection in e-retribusi project. Albeit there were some dissemination proceedings about the project, the city government only involved the representatives from the small-scale merchant association.

> "We did the project socialization twice. First, the socialization was conducted by us [the UPT Kebon Polo traditional market]. Then, Bank Jateng did the socialization for the second event. We also realized that all merchants in Kebon Polo have not yet gotten the information. We have limited resources for massive socialization, such as door-to-door options. For the first socialization, we could only invite about ten people as small-scale merchants' representatives" (FGD, 25 November 2020).

The statement reveals a lack of information about the e-retribusi project caused by the problem of state capacity and priority setting through which public service is delivered. This also reflects the unqualified policy implementation strategy through which the city government communicates its policy.

An unstructured interview with one of the small-scale merchants on 2 November 2020 has exposed this circumstance. "*I knew that Bu Kaji*[57] *was invited (in a meeting with the UPT). When you asked me about that, I answered that an ordinary merchant like me was not invited to the event*". Another testimonial from a member of a small-scale merchant association informs a similar fact. "*I only participated in a meeting which discussed introducing the cashless levy collection system, named e-retribusi.*" (Unstructured interview, 17 November 2020). The small meeting was only participated by around ten members of the association. The UPT hoped that the association would help spread information about the new project. This kind of dissemination was ineffective and the information about the project had not reached all community members. Many small-scale merchants in Kebon Polo's traditional market still do not know how the new levy collection system works.

At the beginning of the project, both levy collectors and small-scale merchants were awkward about changing the old practice that had been effective for many years. Before the project was fully implemented, the provisional experimentation was conducted to ensure the system worked properly. The project trial was done about four days before the project was launched by Magelang City Mayor on 26 October 2020. Both levy collectors and small-scale merchants learnt how to operate the new levy collection system in a relatively short trial period. As time went by, they followed the city government's instructions. They changed the levy collection system from cash to cashless transactions.

The cashless collection system compelled the city government to reassess the total area used by small-scale merchants, to update the small-scale merchants' data and to re-measure the marketplace facilities. Due to the data updating process, some merchants got a tariff adjustment. For instance, a small-scale merchant whose 7-m²-Kios benefits from the new system due to the reduced daily levy charge. Within the previous system, this merchant paid IDR.1800 (EUR 0.12) in cash daily instead of IDR.1750 (EUR 0.11) as his

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[57] Kaji is an epithet for those who have already made the Muslim pilgrimage to Mecca. It sometimes boosts the person's credibility, showing higher social and economic status.

tariff for using a 7 M2 Kios. This is due to the odd tariff calculation per square meter and the difficulty of giving the IDR. 50 (EUR 0.0032) as change money[58]. In this case, the merchant can save IDR. 50 (EUR 0.0032) daily. However, those who benefit from the cashless transaction do not support and advocate the implementation of the project in a straightforward way.

Despite the benefit, they seem unenthusiastic to change their previous behavior in paying the traditional market levy payment. From the small-scale merchants' perspective, the cashless transaction that requires a deposit of money is inconvenient because they are required to pay in advance by depositing their money into their e-money account.

> "I prefer the previous system using tickets. I paid the IDR. 3000 (EUR 0.19) per day for my 12 m² Kios. Now, I have to deposit my e-money to pay the levy for the next seven or ten days. For me, it looks more expensive since I should pay the levy using more money in advance." (Field note, 26 November 2020).

Psychologically, depositing money seems costly and inconvenient for small-scale merchants compared to the previous levy collection, where levy payers pay the levy daily by giving a small amount of money in cash to the levy collectors.

Secondly, many small-scale merchants experienced the cashless transaction as an opaque method, especially during the deposit process. When the small-scale merchants entrust their cash to the levy collectors, they receive it and record the amount of cash for every merchant. Now they do not do the deposit process; instead, other staffs in the UPT office execute the process after the levy collection is completed. As such, levy payers cannot see the process through which their cash is deposited into their e-money card. Sometimes, small-scale merchants are unsure about their deposits due to human or technical errors. During my observation, I witnessed a couple of human errors in which the staff did not correctly input the data during the deposit process.

Another issue had to do with the time frame and the duration of the deposit process that often have been delayed. An experience from one of the small-scale merchants illustrates one of the transaction flaws caused by human error.

> "One day, I deposited IDR 10,000(EUR 0.65) into my e-money card. Using that amount, I can use it for the next five days. I was very surprised that I ran out of my e-money and it just finished in a day. I then made a complaint to the UPT office

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[58] Nowadays, finding a coin valued at IDR 50,00 (EUR 0.0032) as the change money is relatively challenging. Almost no goods are valued at IDR 50,00 (EUR 0.0032); even a candy may cost at least IDR.100,00 (EUR 0.0064).

to check this issue. Finally, they found that there was a mistake when the staff entered my data instead of depositing the IDR. 10.000,00 (EUR 0.65) the staff inputted IDR. 1000 (EUR 0.065). A small mistake may inflict financial loss for us (small-scale merchants)". This was one thing that made me concerned about the digital technologies. (Interview, 20 November 2020)

This incident may illustrate the loss of trust and accountability caused by the untransparent and obscure processes. Similar findings were made in previous research on social housing project in Medellin, Colombia, where mistrust and misunderstanding lead to unresponsive and even non-compliance citizen behavior (Gómez & Jaglin, 2017, p. 56).

Despite their hesitation in implementing a cashless transaction, the small-scale merchants had no choice but to accept it. Given the typical authoritarian[59] and monopolizing public service provision (Buehler, 2011, p. 70; Gaus, Sultan and Basri, 2017, p. 667), they opted to remain in the traditional market as their only source of livelihood. The small-scale merchants have less power to defend their interests when facing government bureaucracy due to the quasi-feudalistic, informality, and state-citizen patronage (Berenschot and van Klinken, 2018, p. 100). The situation of small-scale merchants has also shaped how they perceive the power relation in which they may position themselves as inferior when facing the dominant city bureaucracy. This also generates a '*manut*' or obedient attitude where citizens follow what the bureaucracy tells them to do.

Referring to Hirschman's (1970) terminology of exit, voice, and loyalty, the small-scale merchants' response can be categorized as loyalty in responding to a new policy. They did not opt to 'exit' from the traditional market or made a 'voice' by organizing demonstrations, complaints, or proposing policy changes. However, their loyalty entailed covert, unspoken, and non-collective resistance. What I mean by non-collective resistance are individual actions in responding to power domination (Scott, 1985, 1987). The resistance implicates the maneuvers of small-scale merchants dealing with the cashless transaction being introduced as the new way of collecting the levy.

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[59] Some of the empirical evidence can be found in service sectors such as water provisions (Nugroho, 2011), sanitation services (Winters, Karim and Martawardaya, 2014), and electricity (Al Irsyad, Nepal and Halog, 2018). The traditional market service, in this case, is also monopolistic due to the local government's role as the only service provider.

Smart Merchant Vs Smart Machine: Signaling and Maneuvering as Everyday Resistance

Citizen resistance in responding to policies can be manifested in various reactions, including collective and non-collective actions. In an oppressive and bureaucratic-hierarchical setting, citizens often see non-collective resistance as the best option for survival (Scott, 1985, 1987) and the ways to strive for their long-term future livelihood (Bayat, 2000, p. 553). In the case of the e-retribusi project, the everyday resistance of small-scale merchants is characterized by non-violence and non-collective action using smart strategies to exercise the covert resistance. The smart merchant versus smart machine analog is apt to illustrate the hidden disagreement and struggle between actors in the project implementation. The empirical evidence from my ethnographic fieldwork identified signaling and maneuvering as two forms of non-collective resistance in responding to the e-retribusi project. I follow the logic of signaling as the act of communicating one's circumstances to others (Dornschneider, 2021, p. 5). This differs from Hirschman's notion of voice, since it does not confrontationally criticize the regime. While maneuvering denotes a way to manipulate the circumstances in pursuit of particular objectives (Long, 2001, p. 26).

In reacting to the new levy collection mechanism, some merchants, especially those who discontented, communicated their dissatisfaction with the project. During my fieldwork, I observed two signaling modes that were delivered by some small-scale merchants. Firstly, signaling as everyday resistance forms as an allusion. Some small-scale merchants often insinuate and utter ironies to the levy collectors and other merchant fellows. The insinuation is rooted in the Javanese culture that aims to avoid direct conflict. The merchants use *pasemon*[60] or *sanepo*[61] as the hints and allusive expressions, often used for complaining about the social condition with politeness (Mohamad, 2006, p. 73). I often heard some of the Javanese expressions said by small-scale merchants, such as *"Pak Mantri is coming…it is time to save my money".* (Field Notes, 11 November 2020). This

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[60] 'Pasemon' is a Javanese expression that acts as a communicative tool. In addition, it has a fun quality to it as an allusion. The core term '*semu'*, from which 'pasemon' is derived, means "appearance," suggesting that 'pasemon' can be something "non-real," rather than a specific quality. The context in which it is found determines its meaning. While the meanings of the phrases may change, all of them point to some sort of "symbol" or "suggestion."(Mohamad, 2006) It can also form a facial expression that expresses a person's current mood without using words. As a speech, it can be a "simile" or "analogy," as well as an allusive word or innuendo. For a more in-depth explanation please see Mohamad, Goenawan. "Pasemon: On Allusion and Illusions." Babel Or Behemoth: Language Trends in Asia 1 (2003): 43.
[61] A 'sanepo' is a Figurative expression or polite satire that is usually used for complaining or grumbling (Andayani, Ancok and Wulan, 2018, p. 32).

expression does not necessarily refer to the actual condition of saving money; however, that was the occasion for small-scale merchants to pay the levy. Pak Mantri is not the name of a person or position. This term refers to the levy collectors as the front-line city government officers who collect their levies.

Other signaling expressions mock the smart-mediated levy collection using the EDC machine and e-money. They commented on the new practice of levy collection by saying, "*Wow, that is cool! Now, you just carry a machine like a bank clerk*". (Field Notes, 28 October 2020). In this context, the expression is an insinuation rather than a direct communication. It signifies their feeling about the project. This kind of signaling as everyday non-collective resistance aims to share the discontent within their circle. This can also be categorized as in-group signaling (Dornschneider, 2021, p. 6).

The second mode is out-group signaling, in which small-scale merchants inform and communicate their discontent to a broader audience outside the traditional market as their social field. One of the most convenient ways was posting a status on social media. A small-scale merchant who has a 12- m²-Kios shared her reaction after the introduction of e-retribusi:

> "I even posted my status on WhatsApp: Why did the city government make such policy and rule as they wanted? I do not know exactly. I feel irritated. The system cannot tolerate us in (traditional market) levy payment. We are obliged to pay every day. What happens when we are sick or having a family event? We do not know if we will get misfortune one day. Other professions have a holiday: police, army, government employee, and factory employee. All have holidays as they are paid monthly. As for us, we have no salary and even should pay on a daily basis. I think it is not right. I once asked where to protest...to the mayor or legislative council?... I did this [by posting on WhatsApp] to share my feelings and reduce the burden I have. I was emotional and annoyed" (Interview, 26 November 2020).

This statement demonstrates the signaling effort to communicate their discontent not only with their community but also with other audiences and networks. By spreading her WhatsApp status, she intended not only to relieve their stress and emotional feelings. She also shared the condition of her livelihood with her social network outside of the traditional market. However, the intention to amplify the awareness and develop collective resistance is unclear and not yet further explored.

Besides signaling, small-scale merchants also used maneuvering as a non-collective form of resistance to the project. The system seems like a trap for those who already know how the e-money and cashless levy collection work. They would be reluctant to follow the system. They know that by depositing their money in advance, they pay for their future

transactions, which benefits the Bank more than themselves. These kinds of merchants can be referred to as the 'smart' merchants. They understand how the e-money works and who are the most benefited parties if the project is implemented successfully.

According to their understanding, e-money works as a means of payment, through which users have to deposit their money before using it for transaction purposes. During the transaction, the value of the e-money stored in the electronic media will be reduced by the transaction value. Drawing from this logic, they believed that Bank Jateng was the party benefitting the most, since it got the money in advance before transferring it to the city government treasury account. Within their closed e-money system, the deposited money can only be used specifically for levy payment. It cannot be used for other transactions.

How do they smoothly and covertly resist the project? Here is their maneuver. They did not confront the project as a way of resistance; instead, they made the project lose and evade its smartness by depositing the cash on a daily basis. In doing so, they regularly pay their charge daily according to the daily tariff. At the same time, they entrust the cash for tomorrow's charging as a cash deposit in their e-money. For instance, a small-scale merchant gives cash every day IDR. 2500 (EUR 0.16) to a levy collector. The amount of money is used as deposit money rather than levy payment. As such, this practice makes the project no different between cash and cashless since the transaction happens daily using cash as deposit money. The small-scale merchants give cash to the collector for the e-money deposit. In contrast, in the previous practice, cash was intended for levy payment. In addition, it also lessens the money deposited to the bank, which reduces its capital accumulation from the e-money transaction. An interviewee shared his insights about the political economy of e-retribusi:

> "Before doing business here, I worked in the financial sector. Having said that, I have an extensive experience with this issue. However, you do not need to have a degree in economics or finance to analyze that. Those who have experience in trading will easily acknowledge the cash-flow benefits. The e-money allows the bank to accumulate the funds from the (bank) customers. By doing so, they can use the fund for their activities, especially for investment and business financing. That is why the bank supports government policy to digitize its levy collection. From this, you can guess who takes control and get benefits. So, it is not surprising when some colleagues (especially the Chinese Indonesian and the Minang ethnicity[62]) do not want to deposit money in advance." (10 November 2020).

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[62] The chinese Indonesian are of mixed Chinese and Indonesian descent. While the *Minang* ethnicity is an ethnic group native to the Minangkabau Highlands of West Sumatra. These two ethnicities are well-known as merchants and entrepreneurs.

The merchant gives a simple yet effective argument to avoid the debates with levy collectors and staff from UPT. Another interviewee suffused her action in giving cash every day to the levy collector. He said that *"It is OK for me to pay every day...Paying deposits in advance weekly or monthly made me confused."* (22 November 2020). The maneuvering practice is similar to feigned ignorance (Scott, 1985), where the peasants pretend not to know about their actions to avoid losses when facing government agricultural policy. In the context of levy collection, small-scale merchants pretend they know nothing about e-money and money deposits to avoid losses. This finding also corroborates the eschewing strategy (Dornschneider, 2021, p. 8) as the loss-avoidance approach used in deliberations over the costs and benefits analysis of different behaviors.

The smart system claimed by the city government collided with smart merchants who knew how to deal with it. Small-scale merchant strategies can create incongruence implementation diverted from the initial project design. The non-collective resistance occurred through signaling and maneuvering. Both were categorized as covert resistance to government intervention. These actions may not change or transform the city government policy; however, they helped to maintain small-scale merchant interests and minimize the loss resulting from the project. Maneuver also occurred in the city government. The next paragraphs will expose bureaucratic maneuver in the form of public service commodification.

The Commodification of Public Service: A Bureaucratic Maneuver

It is widely acknowledged that levy collectors may take advantage of the daily target-based performance using the levy ticket scheme. There is a possibility that they use the excess levy collection money for their own personal benefit. In practice, however, levy collectors' potential fraud behavior is considered unspoken truth. It exists but is rarely discussed in everyday life of the traditional market. In fact, the potential for petty corruption has also been recognized by the city mayor. During the launch of e-retribusi, for instance, he talked to the national mass media that *"e-retribusi is intended to avoid the leaked revenue, such as the levy money being (intentionally) brought by levy collectors"* (Antara News, 2021). Another confession came from one of levy collectors with such statement: "*To be honest, when my daily target has been accomplished, I sometimes use the excess money, just for lunch or buying fuel (for my motorcycle). This is only a small amount*

of money, not more." (Field note, 2 January 2021). These statements highlight the existing fact of fraudulence behavior in the previous levy collection process.

The excess money on top of the daily target is considered an illegitimate additional income for levy collectors. An inquiry surfaced on how the levy collectors deal with the new system that has obliterated their additional income. In fact, there was no resistance during the introduction of the cashless levy collection system. Why is this the case? The UPT has agreed to cooperate with Bank Jateng to provide financial services on behalf of the bank, especially by facilitating money deposits for cashless levy collections. A bureaucratic maneuver, thus, had been applied to transform the illegitimate into legitimate additional income through the financial incentive from Bank Jateng. Here, the mid-level bureaucrats negotiated with the bank regarding the scheme of financial incentive. In so doing, they made a special meeting with Bank Jateng to find a solution regarding the compensation for the street-level bureaucrats' extra task. Finally, both agreed to compensate the levy collectors by having financial stimulus as the token of appreciation in facilitating e-money charging. In an official meeting, the middle-level bureaucrat from Disperindag emphasized the bureaucratic maneuver by stating the following:

> "The cashless system has changed the levy collection practices. I am sorry to say this. You previously get the difference from the daily target during cash collection. Now it will be none. If the previous system allows you to get extra (income) from a 'grey' activity, now you will have legitimate additional income from the bank incentive. However, if you are still stubborn [doing fraudulent activities], you will be responsible for yourself." (Official meeting, 12 November 2020).

The e-retribusi project has opened a new business opportunity for street-level bureaucracy to provide a financial service provision. While the levy is cashless, the e-money deposit is made in cash via levy collectors. To facilitate the deposit process, Bank Jateng has introduced a financial service program called "Laku Pandai" [Layanan Keuangan Tanpa Kantor dalam Rangka Keuangan Inklusif] in October 2020. The Laku Pandai program is a financial service promoted by the Indonesian Financial Services Authority [Otoritas Jasa Keuangan/OJK] to provide banking services. Supported by digital technology facilities, it allows people to open savings accounts, save, and withdraw funds through bank agents or mediators. In exchange for the service, the agents will get a financial incentive according to the number of transactions per month.

To facilitate and process e-money deposits from small-scale merchants, the UPT acts as financial agent for Bank Jateng. This practice can be regarded as commodification of service. Following the core concept of commodity as anything exchangeable for economic value (Appadurai, 1986, p. 3), commodification, in this context, transforms the facilitation and assistance of the e-money deposit process into an incentive-based service valued by financial exchange. The UPT staffs help Bank Jateng hoard the levy as capital accumulation. In exchange, Bank Jateng has agreed to provide a monthly financial incentive to the UPT by around IDR 1 Million (EUR 67.5) if the UPT can deliver a minimum of 301 transactions monthly.

The institutional arrangement made by Disperindag and Bank Jateng reflects a collective maneuver rather than individual coping strategies. In this sense, the action was driven by mutual understanding between levy collectors and the UPT staff to accomplish their jobs in providing financial service in the e-money deposit process. At the operational level, the levy collectors and administrative staff in the Kebon Polo UPT run the financial service of the 'Laku Pandai' agent. The levy collectors collect the cash for e-money deposits from the small-scale merchants, and an administrative staff operates the virtual banking system. Both levy collectors and the UPT administrative staff share their willingness to carry out the task albeit it is out of their job description.

A levy collector discerned his reaction to the incentive as a win-win solution. "*The incentive from 'laku pandai' is a substitution for our excess money from our daily collection target. If it does not exist, we may be reluctant to support the e-retribusi project.*" (Field note, 12 November 2020). Another levy collector commented, "*I am happier now, since I no longer need to take money from the levy collection anymore*" (Field note, 12 December 2020). When I asked more details about the nominal difference between the previous practice and the incentive from Bank Jateng, they did not give an exact amount. The only answer they gave was 'lumayan', which means a reasonable amount. In this context, it can be interpreted that the incentive they get is not much different from their previous illegitimate financial gain.

5.5 The Resultant: When Policy Successes and Failures Cohabit

In this section, I will discuss the results of the e-retribusi project shaped by the actors' interactions at their social interfaces. Instead of dichotomizing policy successes and failures, I found both outcomes coexist during the project implementation. On the one

hand, certain policy goals have been achieved. On the other hand, however, the project could not meet the expected results targeted by the city government. In addition, the unintended consequences emerge as the side effects of the project implementation, such as the project over exaggerations and commodification of the public service. Reflecting on these findings, the digital technology-based project in the smart city initiatives is politically and economically seductive (Datta & Odendaal, 2019, p. 392) due to its strategic role in shaping political-economy interest among development actors.

The Policy Outcomes and their Hidden Costs

Empirical evidence has shown the tensions between policy results and their unintended consequences. The project's outcomes can be assessed by juxtaposing the city government's policy goals and the project's immediate results. Regarding the project's first objective, the e-retribusi could not achieve smartness as its ultimate policy goal. The smartness here links and addresses how the new system may simplify the levy collection business processes. From the surface, it seems that the project has conveyed technological advancement by exposing the project's materiality via the EDC machine and e-money as its digital technology apparatus. The project promised the images of smartness represented by contemporary IT discourses such as faster, simpler, paperless, more transparent, and real-time transactions.

In fact, both levy collectors and small-scale merchants experienced an opaque mechanism. In the recent levy collection practice, the levy collectors facilitate both charging e-money deposits and collecting the levy on a daily basis. They assist small-scale merchants by depositing their e-money, thereby accepting cash while collecting the levy in a cashless manner. Given this provision as a new routine, it reduces the smartness of the e-retribusi project. The system still uses cash when small-scale merchants deposit their e-money via levy collectors. The levy collectors then record it on paper before further processing it as e-money credit. Therefore, making levy collection faster, simpler, and paperless, as the e-retribusi project had promised, did not happen.

The current collection practice has also led to inefficient business processes. My observation while participating in the levy collection process from 1 October 2020 to 10 January 2021 has validated the paradox. The project is ridden by the coexistence of both efficiency and inefficiency. The adoption of cashless levy collection has improved the productivity of the collection process; however, it also brings inefficiency to the UPT's

back office. The e-retribusi project creates a new paperwork task for e-money deposits. After the levy collectors collect the levy from the small-scale merchants, they also bring cash to be deposited into their e-money card. The process of depositing the cash needs more time since the UPT's revenue coordinator has to input the data according to the amount of money the merchants give.

Table 8 Average Time Spent Before e-retribusi Implementation

Time	Activities	Doer	Average Duration
07.55-08.00	Preparing the control book	Levy collectors	5 minutes
08.00-13.00*	Collect the levy (cash)	Levy collectors and merchants	5 hours
13.00-13.15	report to the UPT's revenue coordinator	Levy collectors	15 minutes
Total			5 hours 20 minutes

Source: Author Observation

*Some of the levy collectors break for pray and having lunch at 12.00 and continue their duty at 13.00

Table 9 Average Time Spent After e-retribusi Implementation

Time	Activities	Doer	Average Duration
07.55-08.00	Preparing the e-retribusi machine	Levy collectors	5 minutes
08.00-12.00	Collect the levy (cashless/e-money)	Levy collectors and merchants	4 hours
13.00-13.15	Reconcile the collection data	Levy collectors and the UPT's revenue coordinator	15 minutes
13.15-16.15	Deposit e-money for small-scale merchants	Levy collectors and the UPT's revenue coordinator	3 hours
Total			7 hours 20 minutes

Source: Author Observation

Both tables have revealed that the cashless levy collection has created in-efficiency by adding two hours of working time on average. For levy collectors, it can save one hour of working time on average. However, it adds three hours on average to the UPT's revenue

coordinator to process small-scale merchants who deposit their cash money onto their e-money cards. To that end, it is paradoxal that the system has created an additional task. Thus, inefficiency also arises during project implementation.

From the accountability point of view, the e-retribusi project has minimized the potential fraud caused by levy collectors' illegitimate practices. Since the introduction of e-retribusi, the financial audit has not reported any potential fraud in the collection of traditional market levy. The new system has no room for street-level bureaucrats to charge unofficial money or use the levy money for personal needs. The real-time transaction has dispelled illegitimate transactions and payment negotiations between levy collectors and small-scale merchants. However, utilizing smart-digital technology incorporated within the e-retribusi project does not guarantee trust. The project has improved financial administration and trust for audit regimes but diminished small-scale merchant trust. On the one hand, the system delivered a more transparent and reliable process through which auditors can simply conduct financial audits via real-time transactions. On the other hand, merchants experienced a vague and non-transparent process due to the technicalities of the levy collection process.

The additional policy goal to introduce financial literacy to the small-scale merchant has not met the expectation. Instead of familiarizing the small-scale merchant with e-money, teaching them how to top-up the e-money balance, and acquainting them with non-cash transactions, the current levy collection practice does not incentivize small-scale merchants to do so. The money depositing carried out by levy collectors indicates a lack of learning process for digital financial literacy. In contrast, the opaque levy collection system leads to the small-scale merchants' skeptical perception of digital financial services. For instance, the technical errors that caused unsuccessful transactions have reduced the trust and interest in the system. A small-scale merchant once said, *"Having experienced the frequent errors, I use the e-money because I am forced to do so and not because I want it"* (Field note, 17 November 2020).

The e-retribusi as Grotesque Project and Power-Control Apparatus

The e-retribusi project closely reflects the exercise of power between the involved actors in the project. The project implementation mirrors the grotesque form of smart city development that has been described as a "dramatisation of state magnificence, ceremonial displays, spectacularisation of events and other forms of visual-aesthetic

power…" (Datta & Odendaal, 2019, p. 388). The city government has exhibited these grotesque manifestations in and within the city's public realms. This modus operandi led to overclaiming of the successful project, maintaining governmentality, and gaining moral signifiers that legitimate the implementation of the e-retribusi project.

The grotesqueness has been seen in the ceremonial displays and spectacular events. The mayor of Magelang city inaugurated the launch of e-retribusi on 26 October 2020. A huge stage in front of the UPT Kebon Polo office was the center of ceremonial activities. High-level officials from the city government, representatives from Bank Jateng, delegates from the small-scale merchant association, and other invited guests attended the event. The committee also invited journalists and press personnel to disseminate the news to the public. At that ceremony, the mayor gave a speech about the benefits of cashless payment of the market levy. The e-retribusi project was portrayed as smart city endeavor that promises a quick win in solving the city's financial issues. The mayor also indicated that the project would be expanded to other traditional markets throughout Magelang city. Journalists have spread these narratives through a variety of news outlets and channels.

Several reports and news coverage have hailed the project as a breakthrough and efficacious initiative within the smart city development umbrella. Its best practices and success stories have dominated public discourse in local and national media[63]. A content analysis from 14 news corpuses validates this claim, as most narratives told the project's virtuous side. The analyzed news channels highlighted the policy success stories of the e-retribusi project in Magelang City. The news frame has been reported to exemplify bureaucratic modernization by adopting digital technologies in business processes. It has supposedly improved transparency, bureaucratic efficiency, trust, and the city's revenue. For instance, Tagar News (tagar.id) quoted a statement from the Magelang city mayor that even brought the theme into the Covid-19 pandemic context "*Whether we like it or not, in the era of technological ubiquity, cashless (transaction) is unavoidable. Especially during the COVID-19 pandemic, it minimizes physical contact*"(Mulyono, 2020). Other outlets, such as the government website, also highlighted that "*the digitalization leads to eliminate the*

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[63] The local and national media refer to news coverage in local and national newspapers, government websites, local television, and other social media. The news outlets can be depicted in the appendix 4.

city's revenue leaks and thus increases the Internal Revenue". (Pemerintah Provinsi Jawa Tengah, 2021).

In the context of power relations, digitalization in the e-retribusi project plays a role as a command-control mechanism and power instrumentation. The e-retribusi system has been regulated in ways that drive small-scale merchant compliance to pay the levy. The power control mechanism lies in the modus operandi of the levy collection process. The algorithm of the IT system adopts the provision from the Mayor Regulation Number 79 Year 2017 (Pemerintah Kota Magelang, 2017a). Following the regulation content, small-scale merchants have to pay their levy daily whether they open or close their marketplace. If the merchant cannot pay on certain days, the system will automatically accumulate the due levy in the following collection process. For instance, a merchant does not come to the traditional market, so he/she cannot pay the levy. The next day the merchant comes and pays the levy with the e-money, and the machine will automatically charge the accumulated bill. The current payment method can also be seen as an insidious power instrument. The cashless and real-time payment system enforces the levy payer to pay their levy as specified by the regulation.

The procedure differs significantly from the previous collection methods, where levy collectors may negotiate the payment with levy payers. The discretion from levy collectors that owned previously as a mode of bureaucratic power and humane dimension has been vanishing. The discretionary power and decision-making authority in the field have been operationalized and controlled by the algorithm embedded in the levy information system, the EDC machine, and the e-money. The system has also expropriated the supervisory role of the UPT's head to levy collector task in collecting the traditional market levy. The fact makes a convincing case that the e-retribusi project tends to be a self-regulatory system governed by digital technology.

This also demonstrates how power relation are re-formulated through IT utilization within the implementation of the cashless levy collection system. The digital means have altered the power instrumentation between actors inside the city bureaucracy. In the previous levy collection, the control over levy collection was primarily centered on the levy collectors and the UPT office. Disperindag and BPKAD had relatively low influence on the levy collection processes.

Within cash collection, the more operational level, the higher discretion they exhibited. For instance, the collectors had considerably more unimpeded decision-making

power to manage their daily target collection than the staff in the Disperindang or BPKAD. They also took the authority to relieve levies from certain small-scale merchants if they wanted to do so. The discretionary power was only owned by the levy collectors as the front-line officers. After the implementation of e-retribusi, the power pendulum has now shifted to BPKAD. As the administrator of the cashless system, the office fully controls the management of the levy collection through its central server and IT administrator. In other words, BPKAD holds the control-command center through the management of IT as the power instrumentation.

The cashless levy collection also impacted how actors attempt to achieve their interests. The control mechanism of digital technology has accommodated the powerful actor and sidelined the powerless one. For Magelang City Mayor, the e-retribusi project has resulted in political benefits. The success story of bureaucratic reform through digitalization has spread to the public sphere via awards and news. Similar benefits accrued to the city bureaucracy, for whom the implementation of the project signifies the achievement of a key performance criteria and thus may result in promotions and additional funding. Bank Jateng and the IT company involved in the project have also benefited. Their profit-oriented and commercial interest has also been accommodated through the business agreement and contract with the city government.

The small-scale merchants in Kebon Polo traditional market, however, are the powerless actors. There is no mechanism channeling their aspiration, or, if any, it will stop at the levy collectors and the UPT office's desk. The new collection system has not accommodated their aspiration to have a more relaxed levy payment. Instead, they experienced a stricter and more rigid levy collection process. In sum, e-retribusi is an effective tool to control the power and interest where the hegemony of the state and business actors occurred.

5.6 Chapter Summary

The e-retribusi project is one of the featured smart city projects in Magelang city. Mediated by the digital technology, the project aims to modernize the traditional market levy management bureaucracy and eradicate the fraud in levy revenue collection. The e-retribusi project has transformed the mundane activity of levy collection from cash to cashless. The transition process demonstrated resistance and negotiation as the forms of the project implementation dynamics. To that end, the project executed differently from the initial planning, resulting in positive policy outcomes as well as adverse side effects.

The actor network configuration, divergent realities of social field's meaning-making, and the interplay of interests, knowledge, and power have shaped how the e-retribusi project is executed in the real world. The lifeworld analysis has revealed that actors' subjective experiences shape the perspectives of the smart city development arena. The different realities of the traditional market contribute to how the smart city project is designed and executed. In the case of e-retribusi, the lifeworld of city government bureaucracy has dominated the logic of social field, perceiving traditional market as the source of city revenue. The top-down and technocratic approach also exemplified the project design. Consequently, the e-retribusi project design and implementation tend to promote revenue optimization rather than the public service mission.

Actors' asymmetric knowledge and imbalance power relation constituted the design and implementation. The clash of knowledge occured inside the city government bureaucracy and between civil servants and citizens. The centrality of the knowledge controlled by the mid-level bureaucrats and the IT consultants has driven power unbalanced between actors. Both managerial and front-line officers detached the knowledge processes, resulting in managerial bias during the project design process. In addition, the knowledge-power interaction was amplified by patronage, clientelism, and brokerage as the typical Indonesian state-citizen relationships.

The lived experiences of the actors pointed out the implementation dynamics in the forms of resistance and negotiation. On the one hand, resistance occurred from small-scale merchants in responding to this project. The non-collective resistances manifested in signaling and maneuvering. Signaling refers to the action by which small-scale merchants communicate their discontent with the e-retribusi project through allusion and social media posting. At the same time, some small-scale merchants maneuvered by obfuscating the project's smart features to avoid or minimize the loss in responding to the policy changes.

On the other hand, actors inside the city government bureaucracy negotiated to smoothly execute the project. The bank introduced a financial service scheme called 'Laku Pandai' to substitute the levy collectors' illegitimate income. The scheme allows the street-level bureaucracy to act as the intermediary between the bank and the levy payers through a virtual banking system. This leads to the commodification of service, where the

bank compensates the street-level bureaucrats with a financial incentive to facilitate the e-money charging in the cashless levy collection system.

Both policy successes and failures coexisted during the e-retribusi project implementation. While the cashless levy collection successfully eradicated the fraud behavior, it could not achieve smartness and efficiency. The project has also emitted an additional administrative burden; thus, the promise of a smarter, simpler, and faster levy management system could not be met. From the discussion of power, the project reflects the smart city hyperbole showing, ceremonialization, spectacularization, visualization of project, and overclaiming success. The e-retribusi system has been regulated to ensure that small-scale merchant's compliance in levy payment. The dependence on digital technology, thus, has been obviously diminishing the street-level bureaucrats' discretionary power. In this sense, digital instrumentation induces a command-control mechanism that accommodates the powerful actor and marginalizes the powerless.

Chapter 6 The Kampung Teduh Project: From Contestation to Collaboration and Competition

6.1 Introduction

As the second most densely populated city in Central Java province (BPS Jawa Tengah, 2022), Magelang City faces typical urban problems such as inadequate housing, deficient sanitation, poor waste management, overcrowded settlements, environmental pollution, traffic jams, and other urbanization issues. These often correspond with poor settlement in the city, known as 'Kawasan Kumuh' or slums, where low-income inhabitants live with poor living conditions. In certain parts of the city, these neighborhoods are mostly categorized as kampung, and are associated with urban poverty and a low quality of life (Winarso, 2022, p. 865). As such, slums existences also signify the inequality and deprivation in urban development.

Slum is a global phenomenon that exists as the consequences of cities' growth (UN Habitat, 2007). The slum conditions in Magelang City were less severe compared to mega cities such as Jakarta and Surabaya (Bappeda Kota Magelang, 2019). For instance, the number of slums in Jakarta were 118 out of 267 urban villages, covering an area more than 1000 hectares. This is almost 45% of the Jakarta's total area (Kompas, 2019). The slums often consist of squatters residing along riverbanks, coastal areas, and near reservoirs. According to the latest data from Disperkim Kota Magelang(2022), the total slum areas in Magelang City have decreased from 67.41 acres in 2018 to 39.91 acres. However, this issue remains a significant challenge for the Magelang city government due to overcrowding, degraded environmental conditions, lack of access to education, healthcare, and other essential public services. These densely populated neighborhoods are primarily inhabited by the low-income population, thus, often been neglected in urban planning agenda.

Improving living conditions in slum areas is challenging due to its complexity. Within the Magelang Smart City framework, Bappeda introduced a project named Kampung Teduh in the 2019 fiscal year (Bappeda Kota Magelang, 2019). The project addresses slum issues as one of the consequences of urban growth in Magelang City. It has adopted an integrative approach that involves various actors to transform slums into more livable settlements and improve the quality of life. Unlike previous approaches that

emphasize physical transformation[64] and scattered urban planning, the Kampung Teduh project fully integrates physical and socioeconomic strategies to alleviate slums. In this sense, the city government assumes that integrating physical infrastructure and socio-economic dimensions in slum upgrading would be a smarter way to improve urban quality of life(Diskominsta, 2019).

This chapter empirically analyzes the design and implementation of the Kampung Teduh project to improve living conditions in Kampung Bogeman Wetan, Magelang City. According to the official assessment, this kampung was classified as one of the slum areas in the Magelang Tengah subdistrict (Bappeda Kota Magelang, 2019). Applying the conceptual framework, I analyze the dynamics of Kampung Teduh Project drawing from actors everyday lived experiences. Despite encouraging collaborative action among actors inside the city government, in practice, the local aspiration through active participation still lacking in agenda setting and implementation. To obtain a better understanding of the project relevance in achieving policy goals, I further investigate the immediate outcomes as the results from the dynamics processes.

In the following section, I will first describe the Kampung Teduh project and Kampung Bogeman Wetan to contextualize the research. I then present the actor configuration and describe various actors' life-worlds, which shape different interpretations of slum and its development potential. The next section elucidates the dynamics at the social interface, before it assesses the immediate policy outcomes by identifying the achieved policy goals and drawbacks. I end this chapter with a conclusion highlighting how the social interface between development actors (re) shaped Kampung Teduh implementation characterized by contestation, collaboration, and competition.

6.2 Contextualizing the Kampung Teduh Project
This section sets the scene by describing the field site. Here, I designate the research context consisting of Kampung Bogeman Wetan as the location of the development

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[64] Scholars analyze the Indonesian slum upgrading approaches in many ways. Winarso (2022) uses a longitudinal perspective to expose the slum upgrading model in Indonesia between 1965 and 2015. Similarly, Adinafa (2021) also classifies the slum upgrading generation in Indonesia into four: pre-independent, generation I (1960-1980), generation II (1980-1990), and generation III (1990-now). Both analyses tend to argue that the Indonesian developmentalism model before the 90s influenced slum upgrading approaches that focus on physical and urban infrastructure and often ignore socio-economic dimensions.

initiative and the Kampung Teduh project as the government intervention as well as the policy instrument for improving the living condition of slums.

Kampung Bogeman Wetan

Administratively, Kampung Bogeman Wetan belongs to the urban village of Panjang, Magelang Tengah subdistrict. It is a hamlet [Rukun Warga/RW] and is governed by the head of Kampung, called Ketua RW. It has five neighborhoods [Rukun Tetangga/RT] led by a neighborhood leader. Geographically, the kampung is within a walkable radius of the city center, where the Alun-Alun[65], a mall, and the Magelang Grand Mosque can be easily accessed. The hamlet can be divided into the upper area: RT.1, 2, and 5, and the lower area of the neighborhood: RT.3 and RT.4. The kampung is home to 177 households or 563 people (RW 8 Kelurahan Panjang, 2020).

Figure 25 Kampung Bogeman Wetan
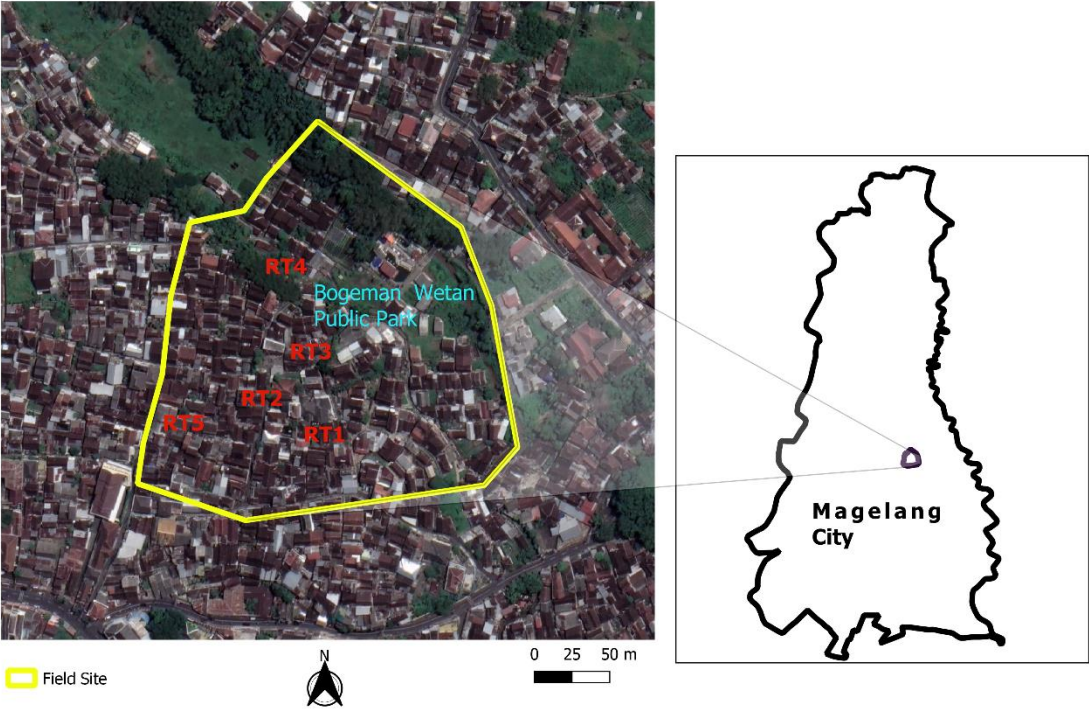
Source: The author obtained the map data from google earth and the database of Global Administrative Areas (GADM, version 4.1, accessed on 1st February 2023) (https://gadm. org/ maps/ KEN. html). Mapping was done using QGIS version 3.22.14.

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[65] Alun-Alun is a typical city square in Central Java. This iconography inscribes the relationship between government, civil society, and the market that entails power relations (Lim and Padawangi, 2008). The local government office complex, a big market, and the great mosque are most likely the dominant buildings surrounding the city square and reconfigured Alun-Alun as a distinctive urban space.

The history of Bogeman Wetan can be traced back to the 15th century when Kyai[66] *Bo Ghem* (originating from Champa, Indochina), known as 'Mbah Bogem', opened the forest for settlement[67]. Another version of the Kampung Bogeman etymology was provided by Dardias (2008). According to him, the name Bogeman is associated with violence and hostility, since *Bogem* means 'to punch' in the local language. In his blog, he shares his childhood memories from the 1990s. The slum area with narrow, winding roads, irregular settlement buildings, and dirty and unhealthy surroundings becomes the geographical setting. It is the place where various sinful acts, known as *MALIMA* (gambling, prostitution, drug abuse, drunkenness, and theft) occurred and can be found in almost every corner of the kampung. For a long time, Bogeman Wetan was considered a dangerous area. It is well known as the city center's no-go area since it has been marred by many criminal incidents.

> 'This Kampung is a *red area*, which means that it is dangerous to live here due to the prevalence of criminals. Because of that, this area was prohibited for military academy students. If the military were prohibited, you can imagine how about civilians? However, it is now getting better and the bad images are now gradually disappearing" (Interview with the head of Kampung Bogeman Wetan, 24 February 2021)

With regards to its ethnoreligious composition, Kampung Bogeman Wetan is characterized by a pluralistic society consisting of Javanese-Moslem, Chinese-Christians/Catholic/Kong Hu Chu, and other mixed races of the Javanese, Arab, and Chinese origins. Rather wealthy Javanese-Chinese descents tend to live in the south of Bogeman Wetan, near the shopping area of the city center. On the contrary, the poor tend to live in the most densely populated area in the northern part of the kampung, bordered by the Kedali River. Most kampung residents work as small-scale entrepreneurs, especially in traditional culinary and informal businesses (Kelurahan Panjang, 2020).

The attachment to the birthplace and childhood nostalgia has been entrenched within the local people. Kampung residents feel that their place is the best place to live despite the kampung being designated a slum by the city government. Conversations with kampung residents have also revealed their lived experiences regarding changes in land use in their surroundings and the environmental implications they face. Most of the participants shared their thoughts that there were changes in their surroundings when

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[66] Kyai refers to a respected and designated name for Muslim leaders
[67] Interview with one of the elders in Kampung Bogeman Wetan, 4 march 2021.

the previous mayor of Magelang City helped urban squatters by issuing land certificates. Consequently, massive infrastructure development projects, especially settlement buildings in Bogeman Wetan, evolved around 2000-2005.

> "Pak Fahriyanto[68] had a close relationship with people in Bogeman Wetan since he was originally born here. As a native politician and mayor [at that time], he helped many people here with housing issues. At that time, many people here did not have land certificates. He then facilitated the issuance of land certificates to those who needed them. Since then, many buildings have been constructed. Some obtained a building license from the city government; some built without the license. People built houses anywhere, near the river and the public road, even inside public cemetery, violating the regulation. But you know, no one controls. There may be some inspections from the city government, but no actions have been taken. Now you can see that the kampung is chaotic." (Interview with one of the community leaders, 21 February 2021)

Granting legal access to land, may have been politically beneficial to the mayor, but had long-term consequences both in land use and environmental impact. For example, more and more houses were built in the kampung areas. People not only built in the permissible zone, but also in restricted areas such as watersheds, irrigation areas, slopes, and even turned a cemetery into a settlement area.

The kampung is also characterized by a dense population living under unhealthy conditions. The density has emerged since the Dutch colonial era, because the area is located in the center of urban activities. A sanitarian[69] working at the Magelang Tengah Public Health Center shared her experience during a site visit in the kampung.

> "It is a pity when you visit a house where many people live under one roof. I once found 12 people living in one room. It functions as a living room during the day-time, but it transforms into a bedroom at night. From a health perspective, they live far from the health standard. One of the most obvious is the lack of air circulation due to the density of the building and the lack of available windows." (Interview with a sanitarian on 3 March 2021).

Regarding the general condition of the kampung, I also had a similar impression about Bogeman Wetan when I first visited there. The surroundings is characterized by narrow and flooded roads, densely populated houses, disorganized buildings, dirty and polluted rivers, and many street vendors.

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[68] Mr. Fahriyanto served as Magelang City Mayor for two terms, from 2000 to 2010. He passed away on 5 June 2019.
[69] The Sanitarian is a professional who graduated from environmental health education and obtained a certificate to carry out the sanitarian function. According to the Health Minister Regulation Number 13/2013, the sanitarian working scopes includes environmental issues affecting public health. A sanitarian can work in hospitals, public health centers, and other health facilities.

Kampung Teduh Project

Kampung Teduh is a city government-funded slum upgrading project that aims to alleviate slums in Magelang City. Slum upgrading is defined as collaborative efforts consisting of physical and social changes made by citizens, community groups, enterprises, and local governments to sustainably improve the quality of life of residents (City Alliance, 2022). According to Mayor Decree Number 050/105/112 Year 2018, the total slum area in the city was 67.41 acres. One of the slums upgrading projects was located in Kampung Bogeman Wetan, Magelang Tengah subdistrict. The project was launched on 28 August 2019 by the deputy mayor on behalf of Magelang City Mayor. The kampung was designated as one of the city slums with a total area of 3.77 acres.

While Kampung refers to a certain neighborhood in the urban area, Teduh is an acronym for *Tematik, Terpadu, and Hijau*. In English, it literally means thematic, integrated, and green. The term thematic refers to the development that follows a particular and suitable theme within specific neighborhoods' embedded socio-characteristic and geospatial conditions. Integrated means integrative development that involves multi-sector approaches conducted by various stakeholders in the city. Lastly, the concept of green can be regarded as the principles of sustainable development characterized by environmentally friendly urban development.

Referring to the official proposal, the Kampung Teduh project follows thematic, holistic, integrative, and spatial, known as 'THIS' in the urban planning concept (Bappeda Kota Magelang, 2021). The approach relies on socioeconomic potential, governance capacity, collaborative actions between actors, and spatial considerations in the urban planning agenda. From the ideal policy direction and strategy, the project put citizen as the crux of urban planning where citizen actively engage in the process. In other words, the citizen-centric and participative principle is at the forefront of the Kampung Teduh project. To this end, the project introduces a different approach compared to previous slum upgrading initiatives that the Magelang City government has carried out. The development evaluation unit assessed previous initiatives that were characterized by sketchy planning and implementation. As stated by a mid-level bureaucrat from Bappeda:

> "Slums should be seen from multiple perspectives. Let us see from different angles. Why does this problem always evolve in the urban areas, let say, in Magelang City? This is because we ignored socio-economic and cultural aspects. Of course, there are other challenges, especially physical ones, such as the lack of infrastructure and space for settlements. However, sometimes non-physical

aspects have more tensions. For instance, if someone loses their job and has financial issues, his son could not go to school, or his household has a conflict, this contributes to malicious community behaviors and urban poor, which sometimes are associated with slums. We do admit that previous approaches rely on (physical) infrastructure. The projects were dispersed, unsynchronized, and lack of collaborative efforts among government institutions. Organizational and sectoral egos are also evident. With Kampung Teduh, we hope this is a breakthrough intervention by applying a comprehensive and integrative system from planning, budgeting and implementation involving all stakeholders working collaboratively in the governance of the slum area." (Semi-structured interview, 4 February 2020).

This statement implies a transformative mindset that guides urban planning to accommodate an integrative approach by viewing the problem of slums from a more holistic perspective. Previous practices that emphasized the physical aspect of slum upgrading were not sufficient to address slum issues. This was worsened by the lack of participation of the local people (Das, 2015, p. 264).

Another important aspect is the ways in which slum upgrading projects are implemented. In previous interventions, most of the slum upgrading projects were initiated by city agencies who deal with infrastructure. The Kampung Teduh project was designed to accommodate people participation through collaborative project planning and design, considering community voice and the geographical potential (Bappeda Kota Magelang, 2021) . Two quotes from interviews with civil servants at Bappeda accentuated the slum upgrading innovativeness.

"What makes Kampung Teduh interesting is that it accommodates the aspirations of community members, which is rarely done, especially when you face slum dwellers. Thanks to God, today many ideas come from local people, such as 'Kampung Warna-warni', 'Kampung Bebas Narkoba', 'Kampung Bunga', 'Kampung IT', etc. We encourage people to be creative. In my opinion, the smartness of this project is to acknowledge the potential while at the same time integrating the sectoral and spatial dimensions in the slum upgrading project (Interview, 5 October 2020)

"Kampung Teduh differs from other similar projects. We visited 'Kampung Warna Warni' in Semarang City, where locals paint their houses with colorful paint sponsored by a paint company. This project changed the face of the kampung through physical intervention, while our program aims more than that. We also want to improve the social-economic condition. That's what we want, I don't know if there is already a similar approach in other cities." (Interview, 4 February 2021).

Table 10 Comparison between Kampung Teduh and Previous Projects

Aspect	Previous projects	Kampung Teduh
Planning	Sectoral and focus on infrastructure	Cross-sectoral and spatial
Project Execution	Sectoral and top-down	Multi-sector and collaborative
Community Participation	Passively engaged	Actively engaged
Funding	Government Domination	Multi-funders

Sources: Author

The precondition for the current slum upgrading initiative can be traced in 2017 when the United States Agency for International Development-Indonesia Urban Water, Sanitation and Hygiene *Penyehatan Lingkungan Untuk Semua* (USAID IUWASH PLUS) project started in Kampung Bogeman Wetan. The project aimed to help cities in Indonesia improve household WASH services. The USAID IUWASH PLUS began to form a local volunteer group in Kampung Bogeman Wetan to help the Open Defecation Free (ODF) movement in mid-2017. At that time, the kampung was one of the open defecation hotspots in Magelang City. The development aid agency provided a set of five-year programs, from the end of 2016 to October 2021, and engaged local volunteers in a variety of WASH trainings. The main activities during 2017-2021 were public campaigns to improve the awareness of hygiene behavior, using clean water for household needs, the danger of open defecation practice, and the urgency of maintaining environmental sanitation.

The effort to improve urban water, sanitation, and hygiene reached momentum when Disperkim finished the construction of an Integrated Wastewater Management System (*Sistem Pengolahan Air Limbah Domestik Terpusat*/SPAL-DT). The system can accommodate domestic waste disposal for up to 100 households. The construction was built in the public space owned by the Magelang City government. Following the operation of SPAL-DT, there was an idea to build a public park, known as the 'Bogeman Public Park', an open green space for kampung residents. Given the geospatial and socio-economic condition of the Kampung and the status of the slum area, the construction of Bogeman Public Park aimed to promote good environmental management to achieve clean and green environment. At the same time, it also promotes socio-economic development in Kampung Bogeman Wetan.

The construction of Bogeman Public Park has been supported by the Magelang City Government and the Central Java Provincial Government. In September 2019, Kampung Bogeman won the Kampung Habitat competition held by the Central Java Provincial Government which granted IDR 750 million (EUR 50,670) as a prize for public park construction. The city government has also supported road access to the park by constructing a bridge for IDR 1.5 million (EUR 101,340). The project should be completed in the 2020 fiscal year; however, due to COVID-19, the first phase of public park development begun on 31 March 2021.

The theme of the Kampung Teduh project in Kampung Bogeman Wetan is 'Kampung Edukasi'[70]. This means that the slum upgrading initiative serves as informal educational purposes[71]. The mission was to realize Kampung Bogeman as a center of various educational provisions and facilities, such as environmental management, urban agriculture, aquaculture, and traditional culinary preservation. The Bogeman Public Park serves as a showcase of Kampung Edukasi as the main theme of the slum upgrading project. The educational theme consists of five educational dimensions.

The first dimension is environmental education, especially improved basic urban infrastructures, and wastewater management systems. Since the construction of SPAL-DT in Kampung Bogeman Wetan, sanitation and hygiene in this area have improved. The SPAL-DT accommodates domestic waste management and has reduced open defecation in Kampung Bogeman Wetan. To this end, it can provide lessons learned for environmental education. Additionally, the city government has also initiated improvements and maintenance such as the sewage system, road rehabilitation, garbage dump maintenance, etc. The second dimension is urban aquaculture. The aquaculture project promotes land-based fish farming using artificial and irrigated ponds in the urban area. The abandoned space around the SPAL-DT construction has been used as fish ponds.

In addition to aquaculture, the Office of Agriculture and Food (Disperpa) also facilitated urban gardening, known as the Sustainable Food Garden Program/*Pekarangan Pangan Lestari* (P2L). Urban gardening in Kampung Bogeman Wetan simply refers to the practices of growing plants and crops, mainly for personal consumption (Anguelovski,

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[70] Previously, there was a dispute between the kampung resident and the city government regarding the slum upgrading themes. The dynamics process of the Kampung Edukasi theme is presented in section 6.4
[71] Informal education does not refer to the institutionalized educational system regulated by the Ministry of Education. It instead supports educational alternatives for the public audience besides the formal education system.

2015). Therefore, it involves home gardening in which every home utilizes its yard to grow crops. To facilitate this project, the city government provides gardening appliances, crop seeds, and technical assistance. The project aims to make the neighborhood greener and produce food for household consumption.

The next dimension is traditional culinary preservation. This initiative was supported by the fact that 15 households run home industries for traditional culinary. When the production process and the product itself are introduced, the educational purpose of preserving traditional food can be achieved. The last dimension is the existence of a public park as an open green space for the neighborhood. The construction of the public park aims to transform the image of kampung, previously associated with the slum area.

Table 11 The Component of Kampung Edukasi

No.	Potential	Educational Dimension	Activities	Physical Attribute	Main Supporting Agencies	Budget Year
1	Urban Infrastructures Improvement and waste water management system (SPAL-DT)	Environmental management/waste water management system	Introducing the improved urban infrastructure and the SPAL-DT system.	improved basic urban infrastructure and SPAL-DT.	Office of Housing and Settlement (Disperkim), Office of Environmental Service (DLH), Office of Health (DInkes), Office of Man Power (Disnakertrans)	2019-2024
2	The aquaculture group "Mina Lestari"	Urban aquaculture	Introducing the aquaculture activities in Bogeman Wetan	Fish ponds	Office of Agriculture and Food (Disperpa)	2019-2024
3.	The Kampung Organic team "Bogeman Lestari"	Urban gardening	Introducing urban gardening activities in Bogeman Wetan	A greenhouse facility and urban gardening areas in residents' house	Office of Agriculture and Food (Disperpa)	2019-2024
4.	Small-scale traditional food industries	Traditional culinary preservation	Introducing Magelang traditional culinary in Bogeman Wetan	Various home industries run by the kampung residents	Office of Urban Village (Kelurahan), Office of Trade and Industries (Disperindag)	2022-2024
5.	Public Park Construction	Open green space	Introducing open green space	The Bogeman Public Park	Office of Housing and Settlement (Disperkim)	2021

Sources: Masterplan of Kampung Teduh and Interviews

6.3 Actors and Social Interface
Actors Configuration

The actor networks and interests provide a milieu to investigate how the interactions among involved actors shape the design and implementation. By analyzing both primary and secondary data, I identify six groups of actors from the total of 15 actors involved in the project. Each cluster of actors had different interests, which has driven the social interactions and actor struggles to achieve their devolved goals.

The mayor of Magelang City, one of the primary development actors, expected a quick implementation of the Kampung Teduh project. The project played a crucial role for the mayor as it was meant to provide a political leverage and allow the major to prove his leadership. Like other smart city projects, the Kampung Teduh also gained enthusiasms and attention from the public, thus, it needed to be promptly executed. It also refers to city recognitions and awards that boost political benefits. From an electoral politic point of view, therefore, the successful implementation of the project in Kampung Bogeman Wetan was highly importance for the mayor's political party[72]. As such, there was a moral obligation to realize the development of the infrastructure and to fulfill the political promise to the constituents. In implementing the Kampung Teduh project, the mayor has endorsed Kampung Edukasi as the Kampung Teduh theme in Bogeman Wetan. It was the Magelang Smart City flagship project during the fiscal years 2019-2024 (Diskominsta, 2019, p. 25).

Once the project gained political legitimacy, indicated by the promulgation of city regulation that legalize the development project, the mayor then mobilized the city's bureaucratic apparatus to accelerate the development of the Kampung Teduh project in Bogeman Wetan. Consequently, seven city government offices actively participated in the project. Bappeda synchronized the development project initiatives of several city offices. For example, Disperkim, DLH, and Dinkes proposed wastewater management systems as a contribution to the Kampung Teduh project. Meanwhile, Disperpa promoted urban aquaculture and urban gardening to support the project. Lastly, Disperindag established the traditional culinary preservation initiative to accelerate socioeconomic activities in the kampung.

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[72] Conversations with Kampung residents revealed that Bogeman Wetan has a long tradition of supporting the Indonesian Democratic Party of Struggle (Partai Demokrasi Indonesia Perjuangan/PDIP). In the 2010 and 2016 mayoral election, the Magelang mayor used PDIP as his political vehicle.

The civil servants involved in the project embraced the interests of bureaucrats. Their professional position in the public service delivery requires a target-based performance assessment. The success of the project may become their key job performance indicator. To illustrate, Disperkim was expected to lead the initiative of the wastewater management system in Bogeman Wetan with the zero open defecation rate as the key performance target. This target also cascaded down to the lower echelon and staff's performance indices. For instance, how many SPAL-DT constructions were built, how many campaigns were organized, and how much budget was disbursed. At the end of the fiscal year, the performance targets will be assessed to determine whether these targets can be achieved or not. Given these set-up, bureaucrats' interests focus at the task-function executions and performance-based activities characterized by specific and measurable indicators.

In the same way, international NGOs and independent government consultants are also expected to deliver the anticipated performance target and timely project implementation. In the Kampung Teduh case, an international NGO from the United States of America, USAID, supported the UIWASH PLUS project. Their main activity aims to help the Indonesian government increase access to water and sanitation services and improve basic hygiene behaviors, especially for the urban poor (USAID Indonesia, 2022). Similar to other Overseas Development Assistant (ODA) programs that convey reform-based impetus intertwined with self-interests (Mawdsley and Taggart, 2022, p. 7), USAID IUWASH PLUS in Magelang City operates with specific and measurable objectives from 2016 to 2021. The projects officers at USAID IUWASH PLUS strive to achieve organizational missions and objectives and finish the project on time. Similarly, the Kota Tanpa Kumuh (KOTAKU) secretariat[73], an independent consultant hired by the Indonesian Ministry of Public Works and People Settlement (KemenPUPR) to implement the City Without Slums Program, also aimed to do their job according to the contract they signed.

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[73] KOTAKU, or City Without Slums, is a national slum upgrading program initiated by the Indonesian government and supported by international donors: World Bank, Asian Infrastructure Investment Bank, and Islamic Development Bank(KOTAKU, 2021). The structure follows a multi-level governance system from the national to the village level (Adinafa, 2021, p. 41). At the city level, the secretariat consists of contract-based personnel, including City Coordinators and Assistant City Coordinators. They execute the KOTAKU program in collaboration with local government, experts, consultants, and community organizations by providing administrative and technical support.

The provision of urban infrastructures in the Kampung Teduh project invited participation from the private sector. Through the open procurement mechanism, three companies were involved in Bogeman Public Park construction. PT Patra Padma was an urban planner consultant responsible for the park design and architecture of the park. The construction itself was operated by CV Nusantara Jaya as the main contractor on the park construction project. The entire construction project was monitored and controlled by PT Asri Granada Muda, an inspector consultant for the public park construction. These companies were driven by profit-seeking logic. The efficiency of costs and resources are the main principles of their participation in the Bogeman Public Park construction project. During the project, they worked closely with the Central Java Government as the main funder and the Kampung Bogeman Wetan residents as the main beneficiaries of the development initiatives.

Residents of Kampung Bogeman Wetan connected with almost all actors in the Kampung Teduh project network configuration. They closely interacted with city offices, the international non-governmental organizations, consultants and private companies during the planning and the implementation of the Kampung Teduh project. They were excited to actively engaged and participated in the project due to these expectations. First, they expected to obtain more development aid and policy intervention schemes that would be beneficial to their neighborhood.

In fact, the residents of Bogeman Wetan have an ambivalent relationship with the slum-status of their neighborhood. On the one hand, the slum status given by the city authority attract more opportunities for the beneficiaries of the development projects. On the other hand, some residents also feel that they lose others' respect due to the slum status. An informal conversation with some residents before the community meeting on 21 March 2021 has illustrated this fact.

> A: "I heard that the city government has designated to this kampung as a slum in 2018. Is that true, Sir?"
> B: "No, if I am not mistaken, it was 2017. Just before the SPAL-DT construction."
> C: "Yes, some civil servants from Disperkim came to us at that time and discussed about the slum-related program from the KOTAKU secretariat. They said it aims to eradicate the slums in the whole city of Magelang."
> A: "So, it was before the 2018 mayor decree."
> C: "Actually, it is good for us, because of the mayor's decree, more development projects have come here, in our kampung. The biggest was SPAL-DT project from Disperkim in 2017-2018. Many locals here, especially those who were unemployed, could have a job during construction."

B: "As coolies...they helped the professional workers of the construction company."

D: "That's better than being unemployed. At least I can earn income. I also heard that the new project called something like Teduh-Teduh or whatever they called it, will also need many workers. I would like to apply then, just like the SPAL-DT construction."

A: "So, Mr. D, you worked in the SPAL-DT construction, right?"

D: "Yes."

B: "We will build the public park. You can ask him (while pointing at the head of kampung) if you want to work there.

A: "I am just wondering; how you feel when your neighborhood is considered a slum by the city government?"

C: "To be honest, I sometimes have some sort of embarrassment as well. However, like it or not, this slum status also benefits us."

D: "Yes, I agree. I do not care whether my neighborhood is considered as slum or not."

(A: Author and B, C, D: Kampung Bogeman Wetan residents)

Second, the residents recognized the improved urban infrastructure in their environment. Several basic infrastructures such as sewage, drainages, wastewater installations, street lightning, and fire extinguishing equipment have been built since the introduction of the Kampung Teduh Project.

The kampung resident can be classified into two different layers. The first layer is the well-respected people, as well as public figures and community leaders in the kampung, I would call kampung elites. What I mean by kampung elites is individuals who represent the local community and are regarded as respected community members and local leaders in the kampung. These elites mostly consisted of both formal and informal leaders such as the head of the neighborhood (Ketua RT) and religious (Moslem) leaders known as *Ustadz* or *Imam*. Some were affiliated with local cadre groups formed by the city government or NGOs. As the representative of the local people, the elites hold a powerful position in society. Their control of local decision-making is still prevalent in many development projects (Fritzen, 2007, p. 1359). The second layer is the commoners or ordinary kampung residents. The commoners mostly follow the kampung elites who lead their actions in development project initiatives.

Figure 26 Actor Network in Kampung Teduh Project
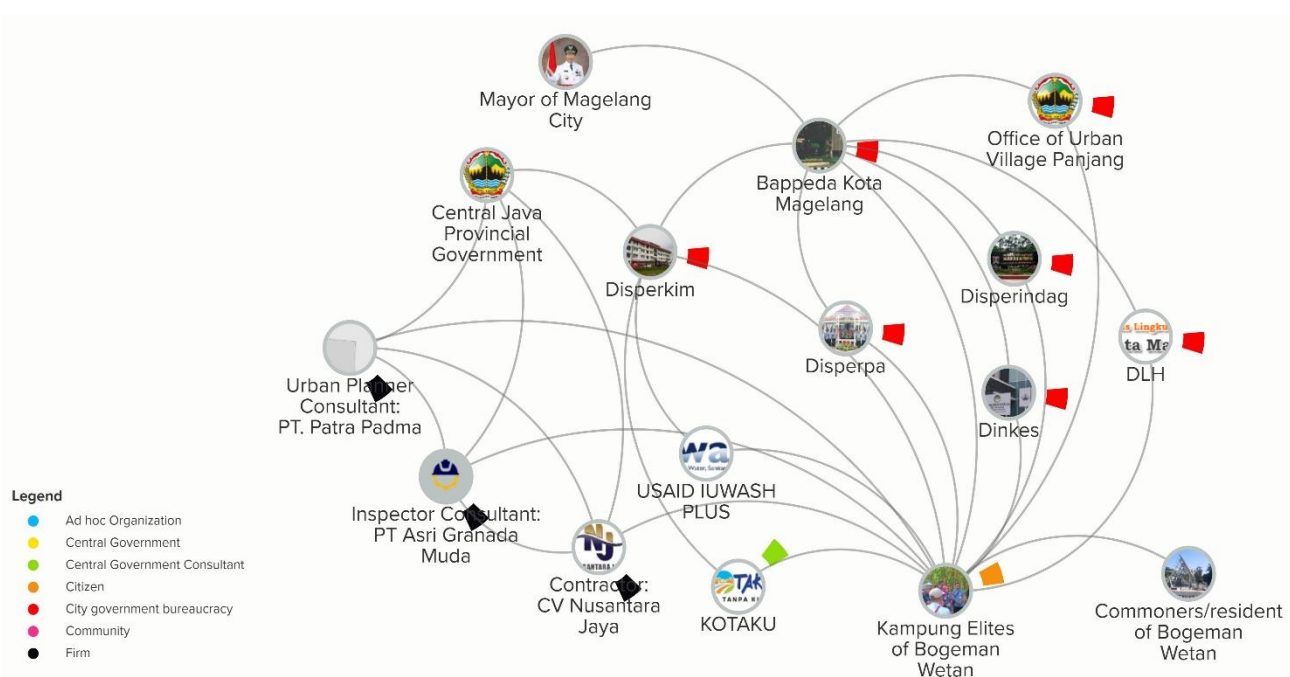
Source: Author using kumu.io

Slum as a Social Field: The Discrepancy between Authority and Local Views

The life-world influences how actors view and interpret the slum as the arena of development. The historical and spatial dimensions encounter at any given time encompass the social interactions and create meaning for the social object. Native life histories and spatial experiences construct how they assess their surroundings. The local interpretation of the slum often differs from that of outsiders with limited lived experience in such neighborhood. In the case of the Kampung Teduh project, the definition of slum is imposed by the national regulatory framework as a mode of institutional arrangement. The top-down designation creates an unbalanced power relation between the state and citizens.

Instead of using a local interpretation of slums, the Indonesian government adopts the internationally recognized definition of slums. The United Nations (UN)Habitat (2007) defines a slum as a household or a group of individuals living under the same roof in an urban area that lacks one or more of the following: (1) durable housing; (2) sufficient living space; (3) water access; (4) sanitation; (5) security of tenure that prevents forced evictions. Adopting the definition of the UN, the Indonesian government legalized Law No.1 Year 2011. It defines slums as uninhabitable settlements due to building

irregularities, high building density, inadequate building quality, and other inadequate primary public services (including water access and sanitation). To operationalize this law, KemenPUPR elaborates on the technicality of slums. Through the Minister regulation No.14 Year 2018 on Quality Improvement toward Slum, the Magelang City government validates the characteristics of slums. The criteria consist of seven dimensions and 16 indicators.

Figure 27 Slum Aspects and Criteria Defined by Central Government

Building condition	building density building quality (below standard)
Road condition	inadequate service coverage low quality
Drinking water	inaccessible inadequate
Drainage condition	unavailable drainage water puddles Low quality drainage
Waste water management	unstandardized system unstandardized technical infrastructure
Waste management	unstandardized system unstandardized technical infrastructure
Fire protection	unavailability of fire protection infrastructures unavailability of fire protection facilities

Source: Visualized by Author
based on Regulation No.14 Year 2018

In addition to the above aspects, socio-cultural and economic potential including the legality of land, strategic location, and population density have also been included in the slum assessment framework. Detailed criteria made by the government can be seen in Appendix 5.

The technocratic interpretation of the slum by the government differs from what local residents think about their neighborhood. Of the seven dimensions, only three aspects, namely wastewater management condition, waste management condition, and drainage condition overlap with the resident's perception of their neighborhood. Four other aspects were not perceived as slum dimensions by the local community. The kampung residents did not consider the condition of the building, the condition of the road, the provision of drinking water, and the fire protection condition as an important aspect of adequate settlement or a livable neighborhood.

The kampung residents emphasized their conception of the slum from physical and visual attributes. They mostly labeled slums with the following conditions: dirtiness, messiness, and poverty. Dirtiness refers to unclean and unhealthy environmental conditions. A native resident of Bogeman Wetan as a participant shared his insights as follows:

> "If we talk about slum, I will start first with cleanliness. The slum is caused by unhealthy behaviors. A family with hygiene behaviors is more able to maintain the cleanliness of the house; thus, I would say that we have been freed from slums. Second, how people neatly organize their house. I would not say that you should have a large and luxurious house. The small and old house is OK, as long as you could maintain its cleanliness and neatly organized. Some of the rich people here park their motorbikes in front of their houses recklessly. I hate it, since it is chaotic and disturbs pedestrians." (Interview, 11 March 2021).

In the statement, the participants designated this issue as ways in which residents maintain the cleanliness of their home and its surrounding areas. As such, it also relates to the institution and human behavior that deals with waste management. In addition to dirtiness, the settlement should be clean. A slum is characterized by messiness, according to the kampung residents. This insight means that cleanliness and tidiness are interrelated in conceptualizing a livable settlement and environment.

An interview with another participant highlighted the general practice of animal husbandry in the urban kampung. It is a fact that many kampung residents still raise livestock and have pets, especially chickens, doves, and birds. As for chickens and doves, they free their pets during the day and put them in cages at night. The birds are likely to be put in cages all the time. Animal husbandry practiced by the kampung residents makes settlement relatively dirty and messy due to cages and animal waste.

> "In my opinion, the slum condition is caused by pets. People here still have chickens, doves, and birds for consumption or as a hobby. While chickens are mostly for consumption, doves and birds are for hobby. I also have more than 10 chickens, but I put the cages in our backyard all the time. Therefore, people cannot often see them. I also clean them regularly. However, many people here put the cages in front of their house. Animal waste is everywhere. It is very disgusting." (Interview, 17 April 2021).

Besides dirtiness and messiness, poverty appears to be one of the characteristics of the slums, according to the locals. This concept cannot be found in the regulation as the official criteria of slums. For the locals, slums are identical to poverty, since poor people cannot afford a better quality of public services. In addition, it also relates to their improved neighborhood which could not be afforded when they are in poor condition. For

instance, many people in the kampung could not buy or subscribe to clean water from the Local Drinking Water Service (PDAM) since this service is not affordable to them. Kampung residents could not adequately obtain other public service provisions that need payment.

> "It is very hard to escape from slums, why? Due to our socio-economic condition. I read the minister's regulation on the management of slums that has been used to assess urban slums. Many indicators including building condition, density, quality of building material, building standard, building height, and many more. We have no money to meet the qualification standards; even most of the residents did not apply for building permits to renovate and build houses. Let me continue with other aspects, access to clean water, for instance, I knew some neighbors who cannot afford the clean water subscription from the local provider. They consumed (water) from their wells that are polluted. Another aspect is about fire protection which is unthinkable for us. It is beyond our priority and unaffordable, for sure." (Interview with the head of Kampung Bogeman Wetan, 24 February 2021).

During fieldwork, I compiled expressions and phrases associated with slum conditions[74]. Some of the most common and chatted words include: *kotor* [dirty], *barang berserakan* [scattered scap], *jorok* [slop], *semak belukar* [shrubs], *kotoran hewan* [animal waste], *hewan peliharaan* [pet], *kandang hewan peliharaan* [pet cages], *jemuran pakaian* [clothesline], *kabel listrik yang tidak tertata* [disorganized electricity installation] and *genangan air* [floaded water].

Figure 28 Resident Interpretation of Slums

Dirtiness	Messiness	Poverty
garbage trash slop animal waste	pets pet cages scattered scrap clothesline disorganized electricity installation	lack drinking water access inadequate clean water lack of sanitation infrastructure inadequate waste management infrastructure
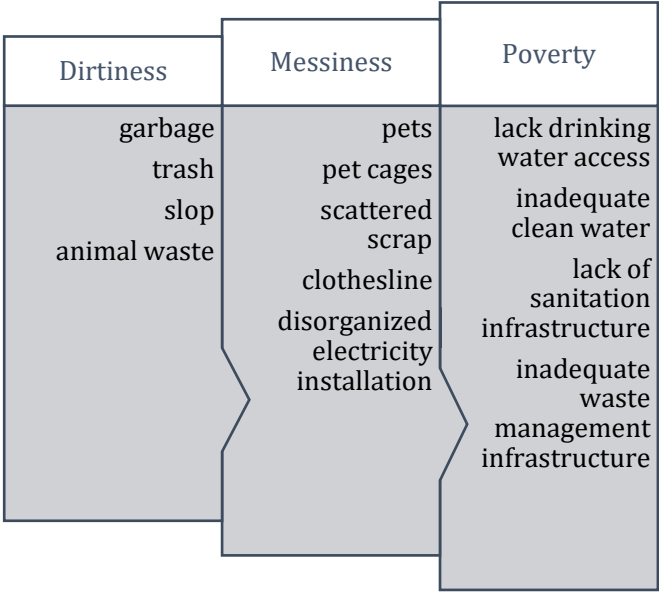
Source: Visualized by Author Based on interviews and observations

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[74] I put together the associated words from conversations and semi-structured interviews with participants.

When I had conversations about the settlement and its surrounding, they not only described the slums characteristics, but also showed me the areas in their neighborhoods that represent, or at least are regarded as slum conditions (see Fig. 29).

Figure 29 Slum characteristics referred by Participants

Clothesline   surrounding' messiness

Pets and animal wastes   Garbage

Source: Author's documentation (2021)

6.4 Assessing the Implementation Dynamics

The dynamics of the Kampung Teduh project was characterized by contestation, collaboration, and competition. This section illustrates these dynamics from three temporal perspectives: the design of the Kampung Teduh, the implementation of the Kampung Edukasi, and the construction of the Bogeman Public Park.

Figure 30 Implementation Dynamics in Three Proceedings
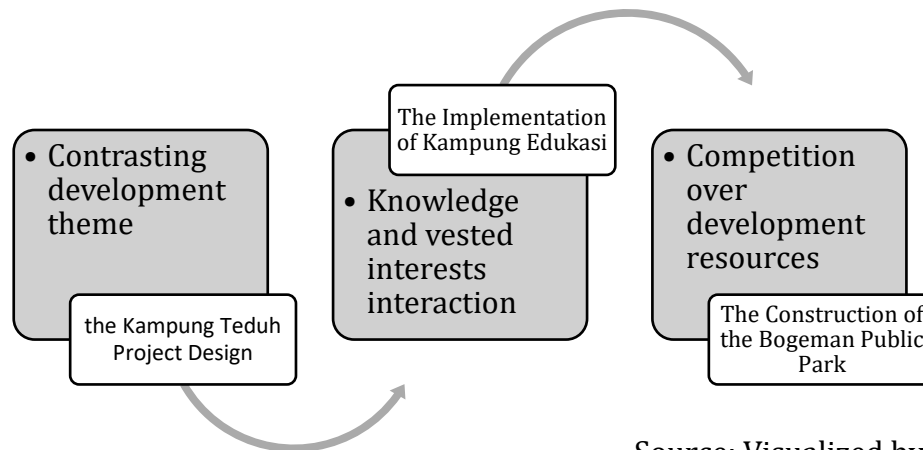
Source: Visualized by Author

Kampung *Tenong* vs Kampung *Edukasi*

Prior to project execution, the City Development Planning Agency conducted a preliminary study in Kampung Bogeman Wetan. A team consisting of civil servants from Bappeda and Disperkim surveyed the neighborhood to assess the socio-economic potentials, challenges, and opportunities. During the project design processes, the dispute over the theme of slum upgrading emerged between the city government and the kampung residents. The theme of the Kampung Teduh entails a suitable theme embedded in the socio-economic characteristics and geospatial conditions of the kampung.

The city government officials argued that Kampung Bogeman Wetan is best developed as a *Kampung Edukasi*. Edukasi is the adaptation of the word education/*Pendidikan*, since the development relates to educational purposes in the slum upgrading initiatives. This proposal is based on field surveys that assess socioeconomic and geo-spatial potentials (Bappeda Kota Magelang, 2019, 2021). According to the survey and assessment, Bogeman Wetan is mostly suitable to be developed as a kampung that provides informal educational facilities and inspirations for environmental management and socioeconomic development. The kampung has successfully managed sanitation issues that improve the quality of life. The SPAL-DT constructed in the kampung can

provide wastewater disposal and treatment to up to 100 households. In addition, urban aquaculture and urban gardening initiatives can provide an alternative source of food. Although they operate on a small scale, the products can cater the family consumption, thus minimizing the budget for vegetables or dishes. These can be presented as best practices that other neighborhoods may follow.

Unlike the city government proposal, residents aspired to develop their kampung as a new tourism destination in Magelang City. They wanted to realize Bogeman Public Park as a tourist attraction. Represented by local community leaders during the meeting with the city bureaucracy, they proposed *Kampung Tenong* as the thematic approach. *Tenong* refers to a traditional Javanese utensil made of woven bamboo (mostly round shapes) and commonly used as a container to place traditional Javanese cakes. The name indicates socio-economic interests through which kampung residents want to attract people from neighboring urban villages to visit the neighborhood. As such, they are able to market their home industry in producing traditional Javanese cuisine. This sector has potential since there are many small-scale traditional food industries in the kampung.

In this case, a different understanding of the social field and the interests of the government and kampung residents have shaped the decision-making processes. On the one hand, bureaucrats who do not reside in the kampung rely on the perception and understanding of slums based on the technical and legalistic approach. They follow the KemenPUPR guideline using checklist criteria to define and specify slums. This interpretation has driven the ways the city government designs the project. Additionally, the initial proposal is consistent with the bureaucratic interest in dealing with the regulatory and administrative framework. The *Kampung Edukasi* theme may incorporate several city government bureaucracies to participate in this project rather than *Kampung Tenong,* which only focuses on the traditional food home industry.

> "The local aspiration is also good, but our proposal to invite more parties to participate in the project is better, I think. As you can see, we follow THIS approach [thematic, holistic, integrative, and spatial] in designing the project, which makes this innovative than the previous project. If the program only supports the home industry alone, the approach of THIS could not be met. However, we also accommodated what they [the kampung residents] wanted to facilitate their home [culinary] industry" (Interview with a civil servant from Bappeda, 4 February 2020).

This statement implies the effort made by the city government to achieve the administrative and paper-work requirements. The project needs to involve more sectors

to comply with the city government's participatory approach in the Kampung Teduh project. By integrating various sectors, the project emphasizes task-function and key performance indicators set by technocratic processes.

On the other hand, kampung residents emphasized their perception of slums and problem-solving ideas based on their temporal-spatial experiences that manifest in dirtiness, messiness, and poverty. Kampung resident's slum conceptualization was slightly different from the official slum definition set by the government, consisting of seven dimensions and 16 indicators. This leads to pragmatic problem-solving by improving environmental management and minimizing poverty. The former can be achieved by changing the face of kampung, while the latter is best realized by fostering economic opportunities to combat poverty. In this case, residents aspire to develop their small-scale businesses to improve their economies. In other words, they prioritize the economic sector to escape from slum issues.

To address this debate, the city government facilitated a participatory urban planning approach by organizing public meetings and consultations. The city government then discussed the theme of slum upgrading for Kampung Bogeman Wetan with the kampung community leaders. According to one of the community leaders[75], he attended two meetings at the city government office before the mayor inaugurated the project. An interview with a kampung resident who lives near the public park has revealed the initiation processes.

> "I participated in meetings with the city government. I was also one of the representatives who made a field visit to Sleman, Yogyakarta, at that time. We had a slightly different concept with the city government when designing the Kampung Teduh project. While the government wants to endorse education as the theme, we wanted to promote our small-scale businesses. As you know, many of us, here, run the traditional Javanese culinary business. At the community meeting, it came to our mind that 'kampung tenong' was our unique and typical trademark. We also manually draw and sketch the design of a public park with *Tenong* characteristics in its buildings. In short, I do not know that the planning document mentions 'Kampung edukasi' instead of 'Kampung Tenong'. But we were not really dissatisfied at all, since the small-scale business was accommodated and, more importantly, the development project is allocated to our kampung. I am OK with whatever theme the government decides." (Interview with one of the kampung leaders, 17 February 2021).

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[75] Conversation with participants that were documented in my fieldnotes.

This statement reflects the fact that authority and resource ownership construct the power relation between actors. The city government, which owns development resources and authority, is in a powerful position and can steer policy directions. While kampung residents were likely to hold their inferiority, hoping the resources from the government flow to them via development projects. Beyond this power imbalance, public consultation allowed local procedural participation and tokenism. Finally, the final official planning document has accommodated the desire of kampung residents to include the traditional food home industry in Bogeman Wetan[76] (Bappeda Kota Magelang, 2021). However, this can be regarded as an additional sub-theme complemented the main theme proposed by the city government.

Knowledge Translation and Conflicting Interests

After the inauguration of the Kampung Teduh project in September 2019, various city government offices were involved in the slum upgrading mission. From 2019 to 2021, three socio-economic and public health initiatives were part of the Kampung Teduh project in Kampung Bogeman Wetan, funded by the Magelang City government. These initiatives comprised urban gardening, aquaculture, and health behavior and sanitation campaigns. The city government implemented these projects to improve the kampung's living conditions. Each initiative employed extensionists who act as development brokers or intermediaries. They mediate between city government bureaucracies as benefactors and the citizens as the beneficiaries. Knowledge and interests induced the ways in which the initiatives were implemented.

As an illustration, the contested understanding regarding fish feeding and fish health treatment emerged in the urban aquaculture project. Through the aquaculture project, Disperpa provided aquaculture supplies[77] and technical assistance to a group named *Mina Lestari,* consisting of 11 community members. As beginners in applying land-based fish farming using irrigated ponds, the *Mina Lestari* members decided to maintain catfish farming due to its convenience and practicality. To support catfish farming, two

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[76] According to the project proposal, the facilitation of the traditional food home industry will be optimized after the construction of the Bogeman Public Park. Since the construction of the public park was delayed due to the COVID-19 pandemic, the project related to the traditional food home industry has not been implemented during my fieldwork.

[77] The aquaculture supplies consist of five fiber fishponds located in the Bogeman Public Park, fish seeds, net, and other appliances. As such, each fiber fishpond is occupied by two participants. These appliances were given free of charge as part of the city government's financial assistance to promote urban aquaculture in Bogeman Wetan.

extensionists provided technical assistance such as pond maintenance and fodder, financial administration and reporting, and marketing strategies to the group.

The contested knowledge between extensionists and *Mina Lestari* members emerged in the fish feeding. The extensionists recommended feeding the catfish with fish pellets or other similar alternatives. Addressing the increased price of pellets, the extensionists trained and facilitated the members in making vegetarian maggots as an alternative to fish feeding. The reason behind this suggestion was that the maggot is scientifically proven for fish growth and health (see, for instance: Saurin HEM, 2011). In practice, project participants still feed the fish with unhealthy feedings such as household food waste and chicken carcasses.

Another contended knowledge has also arisen regarding the maintenance of the pond when the fish diseases spread. Contrary to the extensionists' suggestion to give specific drugs, the *Mina Lestari* members utilized a specific plant as a fish medication and health treatment. A fisheries extensionist shared her experience regarding the overlay of knowledge and interest as follows.

> "Yesterday, there was a 75 kg order from one of the fish sellers in the Magelang Utara. I was afraid that the buyer would be disappointed and complained because the catfish were not in good conditions. They were unhealthy. Some of the fish vomited chicken feathers during the quarantine processes. From that, I know that the project participants never hear and apply my recommendation. They still practice the old habit that catfish breeders feed the fish with anything." (Interview with one of the fisheries extensionists on 3 March 2021).

A response came from a member of *Mina Lestari*, highlighting the pragmatic impetuses that drive their aquaculture practices in a catfish farm:

> "From the beginning, I feed my fish with fish pellets and other alternative feed sources such as food waste from plants and household. The city government through the extensionists also recommended feeding the fish with maggots, which is cheaper and more economical. We were also trained to do this. However, the machine is located at the Disperpa Office. We are free to use it, but it was an inconvenience as we should travel there. We believe that it is okay to feed them without pellets. Previously, in the conventional fish pond, our fishes are healthy... When the fishes are unhealthy, I give those specific plant leaves (while pointing the plant that grows near the ponds). I refuse to use chemical prescriptions that cost a lot of money. This leave is free and effective, anyway." (Interview, 27 February 2021).

The participants were aware of the benefit for organic fish feeding. However, they also believe that catfish can eat anything without harmful effects. They based their

comprehension on their long-standing practice using non-irrigated conventional fish farming. Economic rationality has probably driven their interest and behavior. They still do old practices since they faced limited access to pellets due to increasing prices.

A similar situation also happened in the urban gardening project, P2L where divergent interests between kampung residents and the city bureaucracy interact. The P2L granted a total funding IDR. 55 million (EUR 3.680) for the kampung residents. The money was used to provide seeds, gardening tools, and other administrative support. As a consequence, the city government required the kampung to have 30 plants (mostly vegetables) per household with total product of 100 kg in a three months period of funding[78]. Here, the city government emphasized results-based performance, while kampung residents accentuated process-based activities.

The disjointed objective has led to formalized technical assistance characterized by administrative paperwork and reporting. Instead of facilitating the knowledge and techniques, the agricultural extensionists were busy with assisting the proposal writing, budgeting, accounting, and bookkeeping, monitoring sheets, and other office administration. In response to the goals set by Disperpa, the kampung residents improvised to do the job done. This was similar with many development projects in the context of limited resources (Kumar, 2021), where actors cope and extemporize under difficult situations. A recorded fragment of conversation during the P2L meeting on 19 April 2021 has shown the improvised and result-driven implementation.

> A: "Once the funding is disbursed, we need to provide and hand over the report to the office including budget and expenditure. Additionally, in a period of three months, we also need to report the garden agricultural production as targeted by the government."
> B: "100 quintals, right?"
> C: "No, too much! 100 kgs"
> B: "Sorry 1 quintal [equal to 100 kgs]"
> A: "Yes Sir, 100 kgs"
> C: "Let me report the progress. Nowadays we have around 50 households who participate in P2L. If we can produce 2 kgs per household, we can achieve that."
> D: "Yes, but we should choose the heavy vegetables that can yield in a short period, like: eggplants."
> E: "Cucumber."
> F: "Tomato, long beans."

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[78] According to my observation and conversation with participants during fieldwork, the target was stated in the funding contract. The beneficiary of P2L also obligated to report their activities in the end of funding period. In practice, the agricultural extensionists assisted the kampung residents including technical and administrative processes.

B: "Chili and White Mustard"
(A: agricultural extensionist, B, C, D, E, F: Participants in the P2L project).

This conversation signifies that pragmatic attempts have been made to respond to the city government's target. Plant choice, for instance, was primarily driven mainly by the amount of production rather than the households' preference. An elaboration outside the meeting has revealed that some households prefer to plant flowers or fruits rather than vegetables[79]. This may limit citizen aspirations and diffract the main objectives into agricultural productions.

Figure 31 Sustainable Food Garden Program (P2L)

Source: Author's own documentation

Unlike aquaculture and urban gardening, health behavior and sanitation campaigns faced relatively fewer challenges in dealing with knowledge denials and disputes. To communicate and promote healthy behaviors and sanitation, the sanitarians worked closely with local volunteers who organized as a group of colleagues known as the local cadre. Some main activities relate to defecation practices or the ODF campaign, hand washing behavior, waste management, and COVID-19 health measures. The USAID IUWASH PLUS and the KOTAKU secretariat supported these activities. Both NGOs contributed to the campaign approaches by exploiting participatory methods and communication strategies. Dinkes has cooperated with the USAID since the ODF program

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[79] My own conversation with a meeting participant recorded in field note. He admitted that rather than vegetable he preferred to grow trailing plant such as grape or strawberry.

in 2017. Their cooperation continued during the Kampung Teduh Project with the involvement of the KOTAKU secretariat in promoting healthy sanitation.

The USAID IUWASH PLUS program provided some training and workshops about campaign strategy for health promotion for sanitarians and local volunteers. These activities benefited both sanitarians and local volunteers, especially equipping them with skills and competencies to promote health and sanitation. One of the eminent campaign techniques is DATAMASITA, an acronym of Datang (Come), Tanya (Ask), Amati (Observe), Promosi (Promote) and Catat (Record). This technique was trained by USAID IUWASH PLUS to sanitarians and local volunteers. A sanitarian shared her experience during her everyday tasks in Bogeman Wetan.

> "We had several meetings with the USAID. I remember that the meetings were mostly held in the Disperkim office. I learned a lot from them, how to talk to locals, how to persuade, how to attract people's attention to a specific issue, how to teach them what they don't understand, etc. For instance, I used a simple explanation why should we stop open defecation? I explain in a simple answer: The most common cause of diarrhea is a bacteria called E. Colli. This bacterium is carried by human waste. When using contaminated water, you may have diarrhea. The question continues as follows: Why should we have a septic tank at least 10 meters (in distance) from our toilet? This is because the bacteria (E. Colli) can survive for three days, and it can move one meter per day. Not only us, local volunteers have also learned these campaigns and communication model, which really help us in promoting health sanitation (Interview with a sanitarian, 2 March 2021).

Public campaigns for health behavior and sanitation show that intermediaries consisting of street-level bureaucrats and locals were able to translate evidence-based information and scientific knowledge into everyday languages. Knowledge translation has been relatively integrated into health behaviors and sanitation campaigns and practices. Aside from the local language they used, the common interest in improving health and sanitation has spurred a collective behavioral change. Kampung residents were probably more receptive since respected community members and local cadres supported the sanitarians.

The ways in which extensionists provide technical assistance also facilitate campaign processes. The involvement of the locals tends to smoothly incorporate codified knowledge into tacit everyday practices. Here, the extensionists assigned a local cadre group consisting of respected local kampung residents who helped them integrate into society. In contrast, the lack of local involvement inclines divergent understanding and

practices between extensionists and local people. This finding complements previous research on the importance of street-level bureaucrats as development brokers (Berenschot, Hanani and Sambodho, 2018; Hönke and Müller, 2018; Pot, 2019). However, the role of civil servants as development brokers alone is not enough. The multi-level brokerage that positions local community members as intermediaries for street-level bureaucrats and community is needed. In the case of health behavior and sanitation campaigns, the local cadre as intermediary helps to catalyze the dialogue between the expert and the locals.

The Struggle for Development Resources

The construction of Bogeman Public Park was regarded by the city government as the featured and influential activity of the Kampung Teduh project. Not only can this open green space construction change the face of the kampung, but it can also be a showcase that reflects the socio-economical dimensions of Kampung Teduh project. The construction demonstrates the creative infrastructure development, exploiting a waste processing area that commonly abandoned, as an urban public space. Like other state-funded construction projects, the development of Bogeman Public Park has also taken place through a public procurement system. PT Patra Padma (urban planner consultant), CV Nusantara Jaya (construction contractor), PT Asri Granada Muda (construction inspector) won the government procurement with the total budget of IDR 584,250,000 (EUR 390,190) for a 90-day working contract. In total, there were 11 professionals consisting of supervisors, foreman, architects, and construction auditors, who oversaw the construction.

The slum upgrading program is earmarked by a common phenomenon in Indonesian development commonly called *bagi-bagi*[80]. Jakimow (2018) researched community-driven urban development in Medan, Indonesia, showing that the maneuvers of social actor to gain access to development resources from the state are shaped by a moral atmosphere labeled as development as a share or *bagi-bagi* (p.47). Similar to Jakimow's findings, the Kampung Teduh project also illustrated the unwritten norm of *bagi-bagi* or the sharing of development resources. What makes it different from the previous study by Jakimow is that the development as a share in Kampung Bogeman Wetan occurred

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[80] Bagi-bagi is the Indonesian terminology for sharing. In the development project, it refers to the ways in which development shares the resources they get from the governments or donors.

between residents via kampung elites as development liaisons. While in Jakimow's study the *bagi-bagi* was performed between government officers or contractors and citizens.

During construction, kampung residents provided labor and logistical support, including accommodation, and catering services for the construction companies. To do so, they approached respected members of the community, known as kampung elites who had access to these companies' representatives. There were two possibilities: the residents had no access to make a business deal with the construction company directly or were reluctant to apply by themselves. For instance, one should apply to one of the kampung elites to work in construction as a casual worker. Here, the kampung elite acts as the representative of the project beneficiaries.

> "We have agreed to prioritize the local people in this construction project. Some of the kampung residents asked me to be recruited as casual worker. They are reluctant to apply directly to the manager since they do not know each other. Then I spoke to the project foreman and the supervisors. We had many applications that exceeded the quota. To accommodate everyone, I proposed a rotation system so everyone could work." (Interview, 7 April 2021).

From the company's point of view, collaborating with kampung elites is safer and more convenient than organizing open recruitment for casual workers. A foreman argued that the kampung elite had helped the recruitment processes. *'For our convenience, I work closely with one of the kampung elites, Pak X [anonym], since he knows this place better and helps me deal with the residents'.* (Interview, 24 April 2021). My conversation with a construction supervisor[81] has also revealed that one of the kampung elites helped project contractors minimize potential conflicts on the construction site, since he could consolidate various kampung interests.

The kampung residents competed to obtain development resources from the construction project. Competition for resources was somehow latent rather than manifest. To illustrate covert rivalry, I expose the experience of Mas Anto[82]. He is a 33-year-old native who works as a technician in one of the automotive industries in Magelang City. Due to the pandemic, he was temporarily laid off, and thus mostly stayed at home before the

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[81] During our conversationhe stated that there is an unwritten agreement to involve local people in the current project and in many projects in which he was in charge. He needed a local person, mostly respected community members, who could bridge companies' and local people's interests. (Field notes, 24 April 2021).

[82] Mas is the word to refer to a peer or the way to honor someone older. According to the participant's consent, the name is a pseudonym. I curated his experience in dealing with construction projects through conversation, observation, and interaction on a daily basis.

company called him back. During his waiting time, he was involved in the construction project. Previously, he intended to actively participate in the project. He then changed his mind because he sensed latent competition by residents close to kampung elites. He felt uncomfortable participating in the project, as it entailed contention among community members in his neighborhood.

Kampung elites tend to accommodate those who have a close relationship with them. Residents affiliated with certain elites had more opportunities to participate in the project, whether they were working as casual workers, providing accommodation, or selling food for the company's staffs. For example, one of the kampung residents in RT 4, the neighborhood near the construction site, provided accommodation for the company staff, since the family had a close relationship with one of the kampung elites. Those who do not have a close relationship with kampung elites tend to be apathetic since they have no access to project liaisons. According to Mas Anto, this fact was indicated by the domination of elites in the project, thus it engenders latent conflict between kampung residents (Chapter 6.5).

Figure 32Bogeman Public Park Construction

Source: Author

6.5 The Double-edged Sword: Between Project Triumphant and Fallouts

Recent findings of smart city research have shown that smart city projects often create tensions, especially between technological-economic gain and human well-being (Joss *et al.*, 2019; Chib, Alvarez and Todorovic, 2021). Likewise, the Kampung Teduh project engendered both positive and negative consequences. This section identifies the immediate outcomes of the Kampung Teduh project. Despite the fact that the project has

achieved its main policy goals, polarization has transpired as a side effect of the competition between the local actors who struggle for development resources.

Escape From Slum Status

In February 2021, Magelang City Mayor issued decree Number 050/117/112- 2021 about slums location in Magelang City. According to the decree, the Magelang City slums area decreased significantly by 39.91 acres from 67.41 acres in 2018 (Disperkim Kota Magelang, 2022). The decree is based on the 2020-2021 slum assessment coordinated by the KOTAKU secretariat using the Public Works and People Housing Minister Regulation No.14 Year 2018. Two years into the slum upgrading project, Kampung Bogeman Wetan village was then free of slum status.

Since the launching of the Kampung Teduh Project in 2019, the Magelang City government bureaucracies have initiated several development initiatives including socio-economic development schemes (Chapter 6.4) and physical development projects. The urban infrastructure project aimed to improve the life condition in slums. It corresponds to the Minister of KemenPUPR's regulation No.14 Year 2018 consisting of seven dimensions and 16 indicators. Of the seven indicators, the city government focused on five slum indicators, including improving road and drainage conditions, wastewater and waste management, and fire protection through the construction of SPALDT, cash for work program[83] (*padat karya)* and equipment procurement.The SPALDT, which has been operating since 2018, has leveraged sanitation facilities and services in the Kampung Bogeman Wetan. The system served up to 100 households in processing domestic waste disposal. Interviews with a civil servant from Disperkim and one of Kampung residents reveal that the SPALDT was a game changer in eradicating ODF and improving healthy sanitation.

> "In Kampung Bogeman Wetan, we consider the complex sanitation and drainage problem. In the 2017 fiscal year, we allocated a budget for SPALDT installation in the kampung. In collaboration with Dinkes, Dinas PUPR, DLH and the USAID IUWASH PLUS, we can now see the improvement in sanitation. More than 40 households have connected their toilets and open defecation in the area can be reduced, even eradicated" (Interview, 8 February 2021).

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[83] The cash for work program, known as *Padat karya,* is a labor-intensive activity sponsored by government agencies. The labors mostly come from local society and are given direct cash wage daily or weekly. It also aims to improve people participation and job creation (Sumarto, Suryahadi and Widyanti, 2002, p. 7).

"After connecting to IPAL[84] my wells become cleaner. I consume water for drinking, cooking, and washing from my own well since I do not subscribe to the PDAM. I am not worry anymore about being polluted in my own toilet." (Community Meeting, 28 February 2021).

The communal installation of wastewater disposal from households addressed the waste water management and drainage condition indicator specified in the Minister of KemenPUPR Regulation. Improving household waste water disposal may increase the slum assessment score, which, in turn, increases the chance getting non-slum status.

To address the inadequate road condition and waste water management indicators, the city government implemented cash-for-work (*Padat Karya*) activities in Kampung Bogeman Wetan. Padat Karya activities focused on the environment cleanliness and the simple rehabilitation of urban facilities such as sewage systems, urban village roads, and other public infrastructure. Padat Karya in Bogeman Wetan has been conducted twice in the 2020 and 2021 fiscal year. According to the representative from Disnakertrans, the activity generated double impacts for the kampung resident. It not only supported the Kampung Teduh Project by cleaning the kampung neighborhood, but also created a job opportunity for residents who lost their job due to the pandemic. *"The main activity of Padat Karya [in Bogeman wetan] was cleaning the neighborhood which supports Kampung Teduh and also helps those who lost their job during the pandemic."* (Interview, 8 February 2021).

In the 2021 fiscal year, the KOTAKU secretariat administered Padat Karya activity in Panjang Urban village, of which Kampung Bogeman Wetan is part of. The 2021 Padat Karya was specifically designed to maintain the infrastructure of urban villages with the total budget of IDR 300 million (EUR 20,000)[85]. The six-working-hour activity in cash for work program was conducted for two months, from 1 April 2021 to 30 May 2021. The head of the KOTAKU secretariat unveiled that Padat Karya in the Panjang urban village has focused on renovating moderately or lightly damaged urban infrastructures such as the urban village roads, garbage disposal sites, street lights, and mosques[86]. Furthermore, Disperkim provided fire extinguisher kits at some of the meeting points and public spaces in Kampung Bogeman Wetan. This addressed the last

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[84] IPAL is the abbreviation of *Instalasi Pengolahan Air Limbah Domestik*. It is the other terminology of SPALDT that is widely known for kampung residents.

[85] The information was retrieved from the community meeting between kampung representatives and the KOTAKU secretariat, which was held at the Panjang Urban Village Office 15 March 2021.

[86] Head of KOTAKU secretariat's Speech in the community meeting 15 march 2021.

indicator of the slum assessment instrument. Successfully managing such initiatives, Kampung Bogeman Wetan was freed from its slum status in 2021.

From Organizational Silo to Collaborative Urban Governance

The Kampung Teduh project in Kampung Bogeman Wetan has transformed the ways in which city bureaucracies plan and implement urban development projects. Coordinated by Bappeda, the Kampung Teduh Project represented a collaborative urban planning initiative that brings multi-actors and multi-sectors engagement. At some point, it successfully integrated various development actors into slum upgrading scheme. The collaborative actions in the Kampung Teduh project addressed the inter-agency and inter-governmental coordination deficit as the main challenges in Indonesian urban governance practices (Salim and Hudalah, 2020, p. 179). In this sense, previous common realities in urban governance, such as organizational silo and uncoordinated policy processes, were diminished.

How did this transformation come into being? The decision of the mayor to assign Kampung Teduh as one of the featured smart city projects may serve as a departure point. After this decision, the Head of Economic and Regional Development in Bappeda coordinated the organizations involved from the beginning of the project design. These organizations consisted not only of internal city government bureaucracies, but also external organizations such as the KOTAKU secretariat and USAID IUWASH PLUS. Active participation from the beginning of the project has allowed information exchange and improved trust between parties. A civil servant from Dinkes shared her experience in the project:

> "This thematic and integrative approach allows actors to share their data and information on sectoral authorities. For example, in public health sector we exchange information with IUWASH [USAID IUWASH PLUS], Bappeda and Urban Village Office. We then collaborated with other sectors, such as sanitation, with Disperkim to synchronize our project. Collaborative planning accommodates cross-sectoral interaction and creates more trust and cooperation to improve the quality of living in slum area with the support of people participation." (Interview, 24 February 2021).

The statement shows that the collaboration occurred between offices within the Magelang city government and between city government bureaucracies and NGOs. The sectoral ego that is entrenched inside the government bureaucracy diminished in line with the multi-sector and multi-actor collaboration.

Collaboration activities have also been reflected during project execution. For example, the campaign for health behavior and sanitation brought a wide range of organizations with varying levels. This includes: Dinkes, DLH, Disperkim, USAID IUWASH PLUS, and KOTAKU secretariat. At the managerial level, the leaders of these organizations collectively designed the campaign effort. At the operational level, the front- line staffs executed it collaboratively. The city government, volunteers from international NGO, the KOTAKU secretariat, and the local cadre group members synergically contributed to the effort to achieve better health behavior and sanitation in Kampung Bogeman Wetan.

The Divided Society: Players and Spectators in Kampung Teduh Project

Despite achieving policy objectives, an unintended consequence also emerged. The covert competition and struggle over development resources between local actors have created a partition within the kampung community. Since the inauguration of the Kampung Teduh project, the kampung residents were divided into two separate factions. They were those who earned benefits and those who did not receive any personal advantages from the project. The former can be regarded as 'players' since they actively participated in the Kampung Teduh project, while the latter seemed to be 'spectators' who only watched their colleagues in the competition for developmental resources. This relates to the weakened social cohesion[87] in the kampung.

Extensive discussions with youth activists in the kampung indicated the domination of kampung elites. During my fieldwork, I observed that only certain names actively engaged in Kampung Teduh project, such as urban gardening, aquaculture, and health behavior and sanitation campaign, were involved. These can be regarded as kampung elites who had access to other development actors involved in the project. On the one hand, they acted as liaisons between kampung residents and development actors outside the kampung. However, on the other hand, they also constrained local participation by restricting direct interactions between actors, especially between kampung residents and development benefactors. The kampung elite's role paradox then shaped the typical pattern of local (un) participation in Kampung Teduh Project.

Departing from this fact, I further scrutinized the pattern and proposed a typology of local participation in the Kampung Teduh project. The social relations and spatial

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[87] There are many definitions of social cohesion. In this thesis, I follow Schiefer & van der Noll (2017, p. 592), who identify togetherness, connectedness and orientation to common goods the social cohesion core attributes.

dimension matter in competing for the development resources. The relationship with kampung elites and the distance between the kampung residents' house to the Bogeman Public Park may predict the role pattern. The relationship with the kampung elites means the extent to which one has a connection with the kampung elites. In the case of Kampung Bogeman Wetan, this could be a family relationship or friendship[88]. The spatial dimension refers to the extent to which one's house distances from the public park as the center of the Kampung Teduh project. The measurement did not depend on the distance unit, instead it depended on the location of the neighborhood (RT). In Kampung Bogeman Wetan, there are five neighborhoods named in numerical notation from RT.1 to RT.5. RT 3 and RT 4 are the nearest neighborhoods from the Bogeman Public Park compared to the other RT. RT 3 and RT.4 are known as lower kampung since they are located below the slope near Bogeman Public Park, while RT.1, RT.2, and RT.5 are called upper neighborhoods since they are located above RT.3 and RT.4.

Figure 33 Sketch on Neighborhood Spatial Mapping
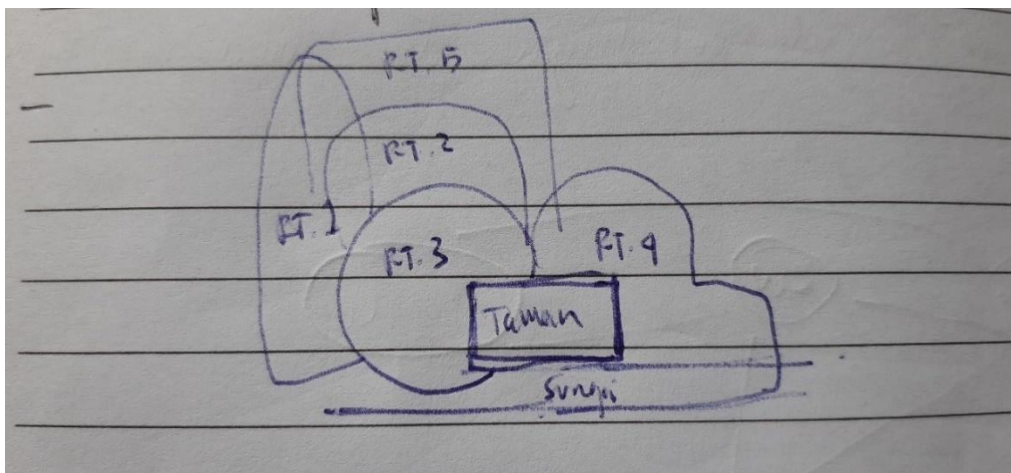
Source: Fieldnotes 9 April 2021

The first typology is the core player. It denotes the kampung resident who has close relationships with the kampung elites and lives near the public park. The core player actively participated in the Kampung Teduh project and enjoyed relatively good benefits from the project. Most of the core players reside in RT.3 or RT.4 and become active members of local groups such as P2L in urban gardening and *Mina Lestari* in urban aquaculture. Some worked as casual workers in the Bogeman Public Park reconstruction.

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[88] According to a participant, a neighborhood in Bogeman Wetan consists of a big-extended family who lives as a neighbor. This happens because they inherit land from the same ancestor and build houses on those lands.

They could easily access the project by approaching the kampung elites. Their house position near the Bogeman Public Park has also induced the role as a core player since it eases participation due to its convenience and practicality.

The second role is as a reserve player to designate the kampung resident who has a close relationship with the kampung elites but lives farther from the Bogeman Public Park. As a reserve player, one may actively engage in the project but not be as active as a core player. A member of P2L shared his experience by stating his level of participation in the project.

> "My brother organized the urban gardening movement in this kampung supported by Disperpa. Therefore, it is easier for me to participate and access the technical assistant of the city government. Besides, I am also a member of the Mina Lestari aquaculture group. However, I could not actively participate on a daily basis since I lived in RT. 5" (unstructured interview on 19 April 2021).

Those who did not have a close relationship with the kampung elites but live near the Bogeman public park can be classified as the active spectators. The active spectators could not get personal benefits from the project but were relatively able to observe and (sometimes) criticize the project. This happened because they could see the activities near their neighborhood but, at the same time, could not participate and access the project. They presumed that the kampung elites limit the project information by centering their position as the network node that links development benefactors and beneficiaries. A statement from RT.4 members amplifies this fact *"I can only watch the project since the one who have access keep quiet about the project, and share to his own circle"* (Interview, 24 April 2021).

The last typology is the passive spectator. It designates those who were apathetic towards the Kampung Teduh Project. Passive spectators are in line with non-participation in smart city development, known as the 'absent citizen'(Shelton and Lodato, 2019). They seemed to have no interest in the project. Most of the passive spectators did not have a close relationship with kampung elites and lived in RT.1, RT.2, and RT.5, which were not directly adjacent to Bogeman Public Park construction. One of the reasons for their disengagement was the upper-lower kampung dichotomy. A statement from the RT.1 members showed the dichotomy:

> "Due to the contour and convenience factor, we are often lazy to go to the public park. In various activities, for example, the 17th of August celebration, our RT has

its own event and does not join the lower neighborhoods. It is all about spatial accessibility, not social issues." (Interview, 21 April 2021).

Besides the social relationships with the kampung elites, the geographical segregation hindered direct participation in the project.

Table 12 Local Participation Typology

	Reside near public park	Reside further public park
Close relationship with elites	Core player	Reserve player
Distance relationship with elites	Active spectator	Passive spectator

Source: Author

Reflecting on the typology, the Kampung Teduh project cannot address the issues of citizen participation in urban development practices. Not all community members in Kampung Bogeman Wetan have participated or actively engaged in the project. This finding is consistent with the complexity of 'citizen-centric' hype, which is rarely articulated in real-world policy within smart city projects (Cardullo and Kitchin, 2019). The covert competition in and between local actors has further generated a divided society in the kampung. In this sense, citizen exclusion and elite domination occurred in the project as a side effect of the project. Additionally, the player-spectator dichotomy has weakened social cohesion in the kampung. Unequal distribution of development resources, attachment and participation issue, skepticism, and distrust are some of the social cohesion dimensions (Raudenbush, 2016; Schiefer and van der Noll, 2017) that concerned during the project implementation.

6.6 Chapter Summary

This chapter has demonstrated the dynamics process of the Kampung Teduh project. Ideally, the project adopts holistic and integrative urban planning principles to address slum issues. These principles integrate both physical and non-physical interventions supported by collaborative actions from development actors. In practice, what have been planned in the master plan could not be perfectly executed. The social interface between actors (re)shaped the ways in which the project was designed and executed. Contestations, collaborations, and competitions occurred as the main countenance of implementation dynamics. These dynamics engendered mixed policy outcomes. The policy objectives were achieved to some extent, but it also left a hidden social issue in the kampung.

The actor configuration analysis shows that the politicians and bureaucrats in the city government still dominate the project, despite the promise of applying a citizen-centered approach. Procedurally, the project accommodates the local community through various kinds of public consultations. However, in substance, the city bureaucracy was still dominant in determining the content of policies and slum upgrading projects. Political and administrative interests remained apparent during project design and implementation. The city government bureaucracy was positioned as the project principal who owned knowledge, authority, and power in managing development project resources.

The slum's mechanical view from the city government has put the local interpretation aside, creating technocratic reality of the slum in the Kampung Teduh project. At the social interface, this discrepancy interacted with the actor interests and power relations. Contestation between the city government and kampung residents emerged during the design, where the city government's conception overshadowed the local aspiration. Here, the contestation uplifted due to the domination the city government bureaucracy who owned the authority and development resources. During project implementation, collaboration and competition emerged as the manifestation of social interface involving the interplay of interest, knowledge, and power between actors.

Besides effectively alleviating Kampung Bogeman Wetan from slum status in three consecutive budget years (2019-2021), the Kampung Teduh project encouraged collaborative actions among urban development actors. The project not only diminished organizational silos in and between city government bureaucracies, but it also integrated multi-sector and multi-actor engagement involving NGOs and private sectors. Collaboration often emerges when various actors can negotiate their interests and convey their (differing) knowledge at the social interface.

However, the smart city development project may also catalyze societal polarization and weakened social cohesion due to unproductive competition over development resources. In the Kampung Teduh project, competition occurred, albeit it has not caused (violence) conflict. However, the local residents of Bogeman Wetan polarized into two typologies, which may impact social cohesion. First, locals who involved and gained benefits from the project, so called players. Second, the project also created the spectators to refer those who were not involved in the project, thus were not able to access

development resources. Therefore, the reflective point emphasizes the importance of inclusiveness and citizen-centric approaches in the smart city project exclusively and, more generally, in urban planning and governance.

Chapter 7 Conclusion

This thesis has presented an ethnographic account of smart city development in Magelang City, Indonesia from 2013 to 2021. It frames the smart city development from the process perspective, highlighting smart cities' policy-making and implementation dynamics from the socio-political dimensions. Reiterating the main inquiry in analyzing how smart city policy in Magelang City is made and implemented in everyday life, I build a conceptual framework that integrates Long's social interface and Hill & Hupe's multiple governance approach. Applying the framework, I consider how life-worlds of actor interplay with interests, knowledge, and power during the smart city development in Magelang City. The framework allows to unpack the 'black box' of the policy process and analyze its dynamics during Magelang Smart City policy-making and project implementation.

This study concludes that the dynamics at the social interface constituted the ways in which smart city actors interact and play their role in Magelang Smart City development. From the social interface perspective, when the development projects are introduced, the external conceptualization from policy-makers, city government bureaucrats, technology experts, IT industries, academia, and other development actors interact with the existing life-worlds of citizens as the target group. The lifeworld shapes how actors perceive and view the smart city projects as social realities. The social interface then forms an intersection, enabling the interaction between lifeworld and social field in which interest, knowledge, and power interplay. The dynamics at the interface may transform social differences into a negotiated socio-political space.

At the social interface, actors negotiate through compromising and bargaining in order to accommodate their interest. Within negotiation processes, smart city actors maneuver in such ways as to accommodate their benefits or minimize loss. In some cases, they also oppose through resistance to minimizing loss. Social actors who dominate knowledge processes and possess more power and development resources tend to exploit smart city development projects for their interests. Smart city projects often imply actor latent pursuits such as the quest for prestige-symbolic politics, overclaiming successful projects, and the glorification of technologies.

In practice, smart city actors 'ride' the projects for their own benefit. Politicians are keen on smart cities for their political currency. By legitimizing the projects, they may

obtain recognition from the successful project implementation. Bureaucrats also benefit from smart city projects, especially by improving and elevating their key performance achievement for their career. IT companies are mostly at the forefront of smart city projects because through smart city projects they make profits by selling their products. In this way, many smart city projects entail prestige-symbolic politics, overclaiming successful projects, and the glorification of technologies.

The Indonesian bureaucratic and state-citizen culture amplified the knowledge-power domination. The patrimonial and quasi-feudalistic culture leads to the patron-client relationships inside government bureaucracy and between government and citizen. Inside the city bureaucracy, latent distinctions between mid-level and street-level bureaucrats emerged, while in the government-citizen relationship, it was apparent that the patronage exists in day-to-day administration. This cultural attribute has widened the power distance and hindered the distribution of power between smart city actors. It thus accelerates the domination and sub-domination as well as superior-inferior interactions at the social interface.

Referring to the sub-research questions, I will elaborate the findings in three inseparable elucidations. Firstly, how the social interface shapes the policy design of smart cities at the city level. Secondly, how the social interface shape agenda setting and implementation dynamics at the project level. Thirdly, I will summarize the policy outcomes and unintended consequences of the smart city projects.

In the case of Magelang Smart City development, the dynamics manifested as contestation, resistance, negotiation, collaboration, and competition. These dynamics took place in both policy making and implementation. The Magelang Smart City policy-making was dominated by bureaucrats-consultant alliance. The administrative-technical-based articulations and less citizens' conception of the urban everyday life likely constructed the Magelang Smart City policy design. Bappeda and Diskominsta defined the policy agenda by guiding the debate on smart cities discourses, gaining scientific and technical legitimacy, and influencing political authorities. Given the lack involvement of city residents in the policy-making processes, the contestation and negotiation occurred inside government bureaucracy. Contestations on policy content, debating cyber city versus innovative city as the backbone of Magelang Smart City were apparent during policy formulation. During the decision-making process, smart city actors within the city

government compromised to resolve these issues. The master plan was a meeting point of negotiation portraying the ideal vision of Magelang Smart City. The urban diagram that consists of five narratives signifies the vision interpreting the concept of smart city adopted by the Magelang City. For Magelang City, the smart city concept means different ideas to those stated by the mainstream literature. While typical smart cities' ideal models rely on advanced technological solutions, Magelang Smart City accentuates smartness as the capability of a city to utilize its resources in addressing urban problems using innovative solutions.

At the level of policy implementation, two smart city projects in Magelang City have changed social interactions and social practices in the context of urban development. Mediated by the digital technology, the e-retribusi has transformed the levy collection system from cash to cashless, while Kampung Teduh Project has shifted the slum upgrading approach from sectoral-fragmented to multisectoral and holistic strategy. Contestations, negotiations, resistance, collaborations, and competitions transpired and reproduced through interactions between actors at the social interface. Different actors' life-worlds engender the discrepancy in the meaning-making of social fields as the arena of development. At both ethnographic field sites, the traditional market and the slum posed multiple realities according to certain actors. This entangles contested knowledge, conflicting interests, and unbalanced power relations. To achieve their objectives in the arena of development, smart city actors maneuvered in such a way to either gain benefits or minimize loss.

E-retribusi is a smart city solution designed for small-medium businesses in Magelang city's traditional markets. In the e-retribusi project, non-collective resistance from the small-scale merchants emerged. The small-scale merchants expressed their resistance through signaling and maneuvering. They did signaling strategy to communicate their discontent via allusion to the levy collectors and social media posting to reach wider audience. Maneuvering was done by obfuscating the project's smartness. In doing so, small-scale merchants deposit their e-money using cash through which cash transactions happen on a daily basis. This minimized the merchants' advance payment for their levy and evaded the ideal mechanism of the e-retribusi.

Kampung Teduh was one of smart city projects that address slum issues faced by Magelang City. Contestation, collaboration, and competition emerged during

implementation. The project design was preceded by disagreement on the thematic area of the slum upgrading initiative between local and Magelang City government. Due to asymmetric power relations, the city government prevailed and dominated in the project design contestation. As such, the promise to adopt participative urban planning was likely not fulfilled. Another form of contestation can also be found between kampung residents and extensionists regarding the expert-local knowledge discrepancy in urban gardening and aquaculture initiative. During the institutional arrangement, collaboration between actors occurred, in which various offices from the local government, NGO, and private sectors engaged and cooperated during project implementation. Beside contestation and collaboration, competition between local actors also emerged as they struggled over development resources, especially when construction project being executed.

Evidence drawn from the two smart city projects has shown mixed results. In some degree, smart city projects achieved the policy objectives. However, at the same time, the projects also created unintended consequences. In e-retribusi project, for instance, the cashless levy collection through digitalization successfully diminished the potential fraud in levy collection, but it could not fulfill its promise to bring 'smartness' and improve good governance. Similar circumstance has also been found in the Kampung Teduh project. Despite the project has spurred collaborative urban governance and improved the living conditions of Kampung Bogeman Wetan, it also divided the kampung residents into players and spectators of the development project.

This thesis makes two distinct contributions to the literature. First, it develops a conceptual framework to better understand the smart city development process from the socio-political dimension. The framework provides an analytical tool to investigate policy process from formulation and agenda setting at the city level and policy implementation at the project level. By considering human agency, the thesis advocates the 'agency turn' in policy scholarships (*inter alia* Moulton and Sandfort, 2017; Carnevale and Stivers, 2020; Sullivan, 2022). Secondly, this thesis offers an in-depth and ample investigation of smart city development realities based on actors lived-experiences through multi-sited ethnography and interdisciplinary perspective. It provides an alternative view on smart cities, moving beyond metrics-based and macro-quantitative assessments.

Given the smart city's top down and technocratic approach in the research sites, this study advocates to bring the citizens back as the main actor in urban development.

Therefore, it suggests a combination of top down and bottom-up strategy or mixed technocratic-participative approaches in smart city development. This articulation is in line with 'people-centered smart cities' as a flagship program of UN-Habitat (2020) in response to smart city's policy fad and its misconceptions. To address mixed policy outcomes, the city government should consider an ex-ante evaluation before the implementation of smart city projects. Ex-ante evaluation is beneficial to mitigate the unintended consequences resulting from the smart city project. It serves as a risk-based assessment through which the city government can anticipate and identify policy scenarios during the implementation of the smart city project. Future research may address this issue by formulating and developing ex-ante evaluation model and framework for smart city project implementation.

I acknowledge that my research has limitations. First, the present study focused its investigation on the smart city initiatives that have just been implemented. The idea of a smart city in Magelang City first emerged in 2013 and was officially launched in 2016, with the projects just started in 2019. As such, it reported the dynamics of smart city development from 2013 to 2021, thus, it could not capture the impact of smart city projects in the long run. The evaluation of policy outcomes and the project outputs, as well as their unintended consequences, is limited to the specific time, primarily when I conducted the fieldwork. Second, since I only illustrated the investigation drawn from two featured smart city projects, the results cannot be generalized to other smart city projects in Magelang City. The findings cannot also be generalized to similar projects in other cities since they may have different contextual factors and localities. This research shares the reliability and generalization issues that are common to qualitative research approaches. Third, as I presented my positionality and reflexivity, my interpretation can also be influenced by my position as an observant participator as well as a resident of Magelang City. Admitting the subjective standpoint from both research participants and the researcher, the interpretation of this study may contain cultural bias.

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Appendix 1 Themes and projects of Magelang smart city 2016-2021

Themes	Projects	Description
Information technology infrastructure	Data-Go	Integrative data management in a web-based operation that integrates sectoral data from various government offices in order to present real-time, open, and updated statistical data. This project is administered by the Office of Communication, Informatics, and Statistics. https://datago.magelangkota.go.id/frontend/
	SIMDA	SIMDA is the abbreviation Regional Management Information System. It is a computer-based information system comprising the development conditions such as financial aspects, assets, apparatus, and public services that can be used for performance appraisal of local government. This project is administered by the Secretariat of City Government and Local Development Planning Agency.
Human resource and IT governance	SIMPEG	SIMPEG is computer-based personnel information system. It is used for managing civil service personnel in the city government. This project is administered by Local Personnel Agency.
	DJIH	DJIH is the computer-based information system that organizes legal documents in an orderly, integrated and sustainable manner, as well as a means of providing complete legal information services. This project is administered by the Secretariat of City Government
Smart economy	SIPO	SIPO is the abbreviation of online company information system. It is an online-based application for business license. This project is administered by the Office for Management of Revenue, Finance and Assets (BPKAD).
	E-retribusi	E-retribusi is an online-based traditional market levy payment. It is aimed to optimize city income and reduce fraud. This project is administered by the Office for Management of Revenue, Finance and Assets (BPKAD).
	SISMIOP	SISMIOP is a computer-based land and building taxes administration system. This project is administered by the Office for Management of Revenue, Finance and Assets (BPKAD).
	SIRUP	SIRUP is the abbreviation of Procurement Plan Information System. It is a Web-based application where companies and enterprises as bidders compete for government

		procurement. This project is administered by the Secretariat of City Government and supervised by National Public Procurement Agency (LKPP).
	SIMPAD	SIMPAD is the abbreviation of Regional Revenue Management Information System. it is a computer-based regional revenue information system that manage local government revenue. This project is administered by the Secretariat of City Government
Education	Dapodikpaudikmas	Dapodikpaudikmas is information system that provides the data regarding school system and recruitment from early childhood education to high school. This project is administered by the Office of Education and Culture.
Industry and Tourism	Magelang Cerdas	Magelang Cerdas is a mobile Apps in Android operating system that provides one stop public service and information portal. The app was developed in 2017 and continuously upgraded since the inception. It has 23 features include health services, civil administration and services, licensing services, education services, data portals, complaint services (*Monggo Lapor*) ask doctors, commodity prices, tax services, statistics and information services. The project is administered by the Office of Communication, Informatics, and Statistics supported by all offices and Magelang city government agencies.
	OSS apps	OSS is an electronically integrated business licensing that facilitate business licensing in the city jurisdiction. The project is administered by the office of One-Stop Integrated Service and Investment (DPMPTSP).
Labor	Magelang Cerdas	Magelang Cerdas is a mobile Apps in Android operating system that provides one stop public service and information portal. The app was developed in 2017 and continuously upgraded since the inception. It has 23 features include health services, civil administration and services, licensing services, education services, data portals, complaint services (*Monggo Lapor*), ask doctors, commodity prices, tax services, statistics and information services. The project is administered by the Office of Communication, Informatics, and Statistics supported by all offices and Magelang city government agencies.
Security and disaster mitigation	Public Safety Center	Public Safety Center is an integrated emergency management to provide immediate medical assistance to the community before receiving treatment at the hospital. The project is administered by the office of Health.

	Command Center	Command Center is a special room with integrated system that built to manage multiple city service operations and monitoring city conditions in real-time. The logic of this project is the process by which the system facilitates integrative data for a better decision making especially in the case of emergency by improving data management quality drawing from real time data. It involves all the office units of municipal government lead by the Office of Communication, Informatics, and Statistics.
Health	E-puskesmas/RSUD	E-puskesmas/RSUD is an application that provides data for local public health center and hospital including the application, doctors' schedule, bed availability etcetera. The project is administered by the office of Health.
Transportation	Traffic Management Center	An integrated management system to manage effective and efficient traffic in the urban area using real-time traffic information. This includes Auto E-City (Automatic Emergency Car Priority) based on Intelligent Transportation System (ITS) installed at highway intersections. The project is administered by the office of Transportation.
	Traffic Information Control Devices	Traffic Information Control Device is a solar-powered traffic information control devices are placed at road intersections, pedestrian crossings, and other areas to control traffic flow. The project is administered by the office of transportation.
Administrative services	E-KTP	e-KTP is national citizen identity registry project. It is operationally delegated to local government to administer the transition from paper-based national identity card to electronic identity card. The project is administered by the office of Population and Civil Registration, supervised by Indonesian Ministry of superior.
	SIAK	SIAK is a national project related to citizen registration delegated to local government to manage the civil registration such as birth, death, marriage, and immigration. It uses IT and web-based technology to integrate national civil registration in one database. The project is administered by the office of Population and Civil Registration, supervised by Indonesian Ministry of superior.
Social and Community	Rojak	Rojak is the abbreviation of Ronda Jam Kerja or loosely translated as community patrolling during working hours. It is non-IT smart city project that allows house wife in the urban village patrol their environment while their husbands are working outside of their house.

Energy	Renewable energy Generator from locally-adapted technology	The renewable energy Generator from locally-adapted technology cover several aspects of projects including the use of organic waste as compost, the use of plastics as handy crafts. The projects are supported by the Office of environment.
Spatial planning	GIS for Planning	The City of Magelang utilizes geographical information system in urban planning, especially in the regional spatial planning process. The project is administered by City of Magelang Development Agency.
Environment	Kampung Teduh	Kampung Teduh is non-IT smart city project that aims totransform slum into liveable neighborhood. Kampung is the Indonesian term to describe a neighbourhood in the rural or sub-urban area. In another context, Kampung also refers to slums in the urban area that are inhabited by rural peoples who have migrated in search of better employment. Teduh is the acronym of Tematik (in English: thematic), Terpadu (integrated), and Hijau (green). Thematic means the branding transformation of Kampung which should be corresponding with socio-economic potentials in the slum area. This also means that the project should consider localities and local wisdom of Kampung. Integrated denotes to the collaborative efforts involving various stakeholders who engage in the project. Lastly, green signals the environmentally-based development to support sustainable urban development in the Magelang city area.
	Kampung Organik	Kampung Organik is non-IT smart city project that aims to facilitate community-based waste management and developing urban gardening/agriculture to sustain food supply in the urban area. Its main activities are the operationalization of 'waste bank' through which community transforms organic waste into compost and utilizes the compost they produced to the urban gardening/agriculture.

Sources: Author's elaboration

225

Appendix 2 Data Collection Methods

Theme: The emergence and development of smart city policies and programs in city of Magelang

Governance level: Constitutive and Directive

Methods	Who?	When?	How?	Where?	How long?	Why?
Expert interview	Prof. Suhono Supangkat [89](Bandung Institute of Technology) Code: EX_INT_1	04/09/20	Telephone Call	Bandung	32 minutes	As an academic and consultant who advice Magelang smart city project since 2015, Prof. Suhono Supangkat can inform the emergence of smart city initiative in the city of Magelang.
	Dr. Yun Arifatul Fatimah (University of Muhammadiyah Magelang) Code: EX_INT_2	14/09/20	Face to face	Universitas Muhammadiyah Magelang	40 minutes	As an academic who involves as the smart city committee in the Magelang smart city, Dr. Fatimah can inform the emergence of smart city initiative in the city of Magelang.
Total	2 interviewees				1 hour 12 minutes	
Semi-structured Interview	Code: ST_INT_1 (Balitbang)	28/09/20	Face to Face	Balitbang Office	52 Minutes	The office plays an important role as a Research and Development unit and think-thank group. In regards to smart city development, it studies the innovation to support smart city initiatives.
	Code: ST_INT_3 (Diskominsta)	05/10/20	Face to face	Diskominsta Office	1 hour 22 minutes	Diskominsta is one of the focal points that facilitates infrastructure in digital and IT application for smart city project.
	Code: ST_INT_4 (Bappeda)	05/10/20	Online meeting	Zoom meeting	1 hour 10 minutes	Bappeda is the unit of city government that facilitates urban planning process. The interview informed internal government bureaucracy's perception on smart city
	Code: ST_INT_4 (mayor of Magelang city)	18/10/20	Face to Face	Perum Korpri Ngembik	19 Minutes	Mayor of Magelang city is an important actor of smart city initiative in the city as he is a primary decision maker in the initiation and implementation of Magelang smart city projects.

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[89] The interview can also be read at: Pratama, A. B. (2021) "Smart is not Equal to Technology": An Interview with Suhono Harso Supangkat on the Emergence and Development of Smart Cities in Indonesia', Austrian Journal of South-East Asian Studies, 15(1), pp. 1–7.

	Code: ST_INT_8 (DPRD)	06/11/20	Face to face	Magelang city People's Representative Council office	1 hour 3 minutes	DPRD member is one of political actors as the representative of city residents in the smart city development projects. The interview informed political actors' perception on smart city
	Code: ST_INT_9 (DPRD Member)	23/11/20	Face to face	DPRD office	1 hour 8 minutes	DPRD member is one of political actors as the representative of city residents in the smart city development projects. The interview informed political actors' perception on smart city
	Code: ST_INT_12 (Gama techno, smart cities enterprise)	25/01/21	Online meeting	Zoom meeting	1 hour 12 minutes	Gama techno is one of the smart city enterprises that collaborate with the city of Magelang in the smart city development. The interview informed private sectors' perception on smart city development.
Total	7 interviewees				7 hour 6 minutes	
Documentation	6 policy paper and 2 city regulation					

Note: to keep anonymity the interviewees' identity are presented in Code

Theme: The dynamics of the e-retribusi project

Governance level: Operational

Methods	Who?	When?	How?	Where?	How long?	Why?
Semi-structured Interview	Code: ST_INT_2 (Disperindag)	30/09/20	Online meeting	Zoom meeting	1 hour 17 Minutes	Traditional markets and their levy management system is managed by Disperindag through UPTs. In regards to the smart city project of 'e-retribusi', the office involves in managing the operational of the e-retribusi project.
	Code: ST_INT_6 (BPKAD)	20/10/20	Face to face	BPKAD	1 hour 6 minutes	BPKAD initiated the 'e-retribusi' project that aims to optimize city income from traditional market levy and minimize fraud.
	Code: ST_INT_7 (UPT of Cacaban and Kebonpolo traditional market)	05/11/20	Face to face	UPT Office	44 minutes	The UPT of Cacaban and Kebonpolo traditional market acted as the spearhead of' e-retribusi' since it managed the operationalization of the project.
	Code: ST_INT_10 (the information technology consultant)	18/10/20	Online meeting	Zoom meeting	1 hour 4 minutes	The information technology consultant played an important role since it developed the electronic-based levy payment.
	Code: ST_INT_11 (Magelang city government internal auditor)	12/01/21	Face to face	Magelang city government internal auditor office	58 minutes	As one of the objectives of e-retribusi is minimizing fraud of city finance, the perspective of internal auditor may inform how the project contribute to the financial accountability.
	Code: ST_INT_12 (External auditor from the Audit Board of the Republic of Indonesia)	03/02/21	Email Communication	Email	-	As one of the objectives of e-retribusi is minimizing fraud of city finance, the perspective of external auditor may inform how the project contribute to the financial accountability.
Total	6 interviewees				5 hour 9 minutes	

Unstructured informal interview	UNST_1 (Levy collector)	17/10/20	Face to face	UPT Office	1 hour 10 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_2 (Civil servant from the Disperindag)	26/10/20	Face to face	Kebonpolo traditional market	3 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_3 (Employee of Central Java Bank)	26/10/20	Face to face	Kebonpolo traditional market	13 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_4 (Levy collector and small-scale merchants)	26/10/20	Face to face	Kebonpolo traditional market	40 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_5 (Small-scale merchant)	27/10/20	Face to face	Cacaban traditional market	15 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_6 (Small-scale merchant)	27/10/20	Face to face	Cacaban traditional market	12 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_7 (Small-scale merchant)	27/10/20	Face to face	Cacaban traditional market	4 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_8 (Small-scale merchant)	27/10/20	Face to face	Cacaban traditional market	8 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_9 (Levy collectors)	28/10/20	Face to face	UPT Office	14 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_10 (Levy collectors)	28/10/20	Face to face	UPT Office	15 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_11 (Small-scale merchant)	28/10/20	Face to face	Kebonpolo traditional market	43 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_12 (Small-scale merchant)	28/10/20	Face to face	Kebonpolo traditional market	14 minutes	Actor's experiences of 'e-retribusi' project in their daily lives

	UNST_13 (Small-scale merchant)	28/10/20	Face to face	Kebonpolo traditional market	24 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_14 (Small-scale merchant)	02/11/20	Face to face	Kebonpolo traditional market	24 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_15 (Small-scale merchant)	02/11/20	Face to face	Kebonpolo traditional market	30 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_16 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	13 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_17 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	7 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_18 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	4 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_19 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	13 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_20 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	20 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_21 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	9 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_22 (Small-scale merchant)	03/11/20	Face to face	Cacaban traditional market	33 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_23 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	5 minutes	Actor's experiences of 'e-retribusi' project in their daily lives

	UNST_24 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	19 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_25 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	7 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_26 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	12 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_27 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	10 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_28 (Levy collectors)	04/11/20	Face to face	UPT Office	13 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_28 (Levy collectors)	04/11/20	Face to face	UPT Office	17 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_29 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	15 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_30 (Small-scale merchant)	04/11/20	Face to face	Kebonpolo traditional market	15 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_31 (Small-scale merchant)	05/11/20	Face to face	Kebonpolo traditional market	24 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_32 (Small-scale merchant)	05/11/20	Face to face	Kebonpolo traditional market	39 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_33 (Small-scale merchant)	05/11/20	Face to face	Kebonpolo traditional market	20 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_34 (Small-scale merchant)	05/11/20	Face to face	Kebonpolo traditional market	20 minutes	Actor's experiences of 'e-retribusi' project in their daily lives

	UNST_35 (Levy collectors)	06/11/20	Face to face	UPT Office	16 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_36 (Levy collectors)	06/11/20	Face to face	UPT Office	17 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_37 (Levy collectors)	07/11/20	Face to face	UPT Office	49 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_38 (Levy collectors)	07/11/20	Face to face	UPT Office	1 hour 11 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_39 (Levy collectors)	07/11/20	Face to face	UPT Office	7 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_40 (Levy collectors)	07/11/20	Face to face	UPT Office	2 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_41 (Levy collectors)	07/11/20	Face to face	UPT Office	4 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_42 (Levy collectors)	07/11/20	Face to face	UPT Office	3 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_43 (Levy collectors)	07/11/20	Face to face	UPT Office	7 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_44 (Small-scale merchant)	09/11/20	Face to face	Cacaban traditional market	27 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_45 (Small-scale merchant)	09/11/20	Face to face	Cacaban traditional market	3 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_46 (Small-scale merchant)	09/11/20	Face to face	Cacaban traditional market	5 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_42 (Small-scale merchant)	09/11/20	Face to face	Cacaban traditional market	41 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_47 (Levy collectors)	09/11/20	Face to face	UPT Office	29 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_48 (Levy collectors)	09/11/20	Face to face	UPT Office	2 minutes	Actor's experiences of 'e-retribusi' project in their daily lives

UNST_49 (Levy collectors)	09/11/20	Face to face	UPT Office	5 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_50 (Levy collectors)	09/11/20	Face to face	UPT Office	23 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_51 (Levy collectors)	10/11/20	Face to face	UPT Office	38 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_52 (Small-scale merchant)	10/11/20	Face to face	Kebonpolo traditional market	4 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_53 (Small-scale merchant)	10/11/20	Face to face	Kebonpolo traditional market	15 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_54 (Small-scale merchant)	10/11/20	Face to face	Kebonpolo traditional market	1 hour 8 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_55 (Small-scale merchant)	10/11/20	Face to face	Kebonpolo traditional market	6 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_56 (Levy collectors)	10/11/20	Face to face	UPT Office	3 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_57 (Small-scale merchant)	11/11/20	Face to face	Kebonpolo traditional market	11 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_58 (Small-scale merchant)	11/11/20	Face to face	Kebonpolo traditional market	48 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_59 (Levy collectors)	11/11/20	Face to face	UPT Office	37 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_60 (Small-scale merchant)	19/11/20	Face to face	Kebonpolo traditional market	38 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
UNST_61 (Small-scale merchant)	1711/20	Face to face	Kebonpolo traditional market	37 minutes	Actor's experiences of 'e-retribusi' project in their daily lives

	UNST_62 (Small-scale merchant)	17/11/20	Face to face	Kebonpolo traditional market	10 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_63 (Levy collectors)	17/11/20	Face to face	UPT Office	3 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_64 (Levy collectors)	17/11/20	Face to face	UPT Office	42 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_65 (Small-scale merchant)	17/11/20	Face to face	Kebonpolo traditional market	1 hour 18 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_66 (Small-scale merchant)	18/11/20	Face to face	Cacaban traditional market	36 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_67 (Small-scale merchant)	20/11/20	Face to face	Kebonpolo traditional market	1 hour 29 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_68 (Small-scale merchant)	26/11/20	Face to face	Kebonpolo traditional market	11 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_69 (Small-scale merchant)	26/11/20	Face to face	Kebonpolo traditional market	40 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_70 (Levy collectors)	26/11/20	Face to face	UPT Office	8 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
	UNST_71 (Small-scale merchant)	26/11/20	Face to face	Kebonpolo traditional market	30 minutes	Actor's experiences of 'e-retribusi' project in their daily lives
Total	71 unstructured interviews				26 hours 57 minutes	
Focus Group Discussions	Code: FGD 1 (12 participants from the Disperindag, Diskominsta, BPKAD, UPT, Bank Jateng)	25/11/20	Face to face	Atria hotel meeting room	3 hour 31 minutes	The FGD facilitated various actors to sit together and discuss about the project they implement. In this event I could investigate the social interfaces between actors in the context of group discussion.

	Code: FGD 1 (12 participants from the Disperindag, Diskominsta, BPKAD, UPT, Bank Jateng)	25/11/20	Face to face	Atria hotel meeting room	2 hour 8 minutes	The FGD facilitated various actors to sit together and discuss about the project they implement. In this event I could investigate the social interfaces between actors in the context of group discussion.
Total	2 FGD				5 hour 39 minutes	
Official meeting participation	OM_1	12/11/20	Face to face	Disperindag	1 hour 47 minutes	The official meeting allowed me to investigate group dynamics and interactions regarding the project implementation,
	OM_2	12/01/21	Face to face	Disperindag	48 minutes	The official meeting allowed me to investigate group dynamics and interactions regarding the project implementation,
Total	2 official meetings				2 hour 35 minutes	
Observant participation	Observant participation was held between October 2020-Januari 2021. During observation I jotted fieldnotes and diary. The field notes then further interpreted and organized into 52 consolidated notes.					

Theme: The dynamics of Kampung Teduh project

Governance level: Operational

Methods	Who?	When?	How?	Where?	How long?	Why?
Semi-structured Interview	Code: ST_INT_14 (Bappeda)	04/02/21	Face to face	Bappeda Office	38 Minutes	Bappeda in collaboration with the Disperkim initiated the project and labelled Kampung Teduh as the flagship intervention to transform slum area into livable neighborhood.
	Code: ST_INT_15 (Disperkim)	08/02/21	Face to face	Disperkim Office	58 minutes	Disperkim in collaboration with Bappeda the initiated the project and labelled Kampung Teduh as the flagship intervention to transform slum area into livable neighborhood.

	Code: ST_INT_16 (Disnakertrans)	08/02/21	Face to face	Disnakertrans Office	34 minutes	The Disnakertrans was one of the participating agencies that deals with job creation in Kampung Teduh project.
	Code: ST_INT_17 (USAID Indonesia Urban Water, Sanitation and Hygiene Penyehatan Lingkungan untuk Semua (IUWASH PLUS)	15/02/21	Face to face	Kampung Dudan, City of Magelang	1 hour 10 minutes	USAID-IWASH Plus was an aid international organization from USA that supports Magelang city government to improve sanitation and water access. Kampung Bogemen Wetan (as one of the hotspots for open defecation) was one of the working areas of USAID IUWASH Plus.
	Code: ST_INT_18 (Community leader)	17/02/21	Face to face	Kampung Bogeman Wetan	2 hours	Community leaders in Kampung Bogeman Wetan play important roles in the process of Kampung Teduh development. In most cases, community leaders represent community in dealing with other actors in urban development.
	Code: ST_INT_19 (Community leader)	18/02/21	Face to face	Kampung Bogeman Wetan	46 minutes	Community leaders in Kampung Bogeman Wetan play important roles in the process of Kampung Teduh development. In most cases, community leaders represent community in dealing with other actors in urban development.
	Code: ST_INT_20 (Head of urban village)	18/02/21	Face to face	Kampung Bogeman Wetan	37 minutes	Head of urban village is a civil servant who has authority to lead the urban village. He/she also acts as the liaison officer between city government and Kampung inhabitants.
	Code: ST_INT_21 (Dinkes)	24/02/21	Face to face	Dinkes	44 minutes	The Dinkes one of the participating agencies that deals with the issue of public health and sanitation in Kampung Teduh project.
	Code: ST_INT_22 (Head of Kampung Bogeman Wetan)	24/02/21	Face to face	Kampung Bogeman Wetan	1 hour 4 minutes	Head of Kampung Bogeman Wetan (hamlet) is a community leader who leads Kampung/hamlet. In most cases, community leaders represent community in dealing with other actors in urban development.
	Code: ST_INT_23 (Cities without Slums [Kota Tanpa Kumuh]/KOTAKU)	25/02/21	Face to face	Office of KOTAKU	1 hour 13 minutes	KOTAKU is executing agency hired by Indonesian Ministry for Public Work and People Housing to assist the local government in the

						effort to eliminating the slum area status in the urban area.
	Code: ST_INT_24 (Sanitarian)	02/03/21	Face to face	Public Health office of Magelang Tengah	58 minutes	Sanitarian is professional staff working at the Dinkes. In this case he/she acts as street level bureaucrat who promote public health and sanitation to Kampung inhabitants.
	Code: ST_INT_25 (Sanitarian)	03/03/21	Face to face	Public Health office of Magelang Tengah	57 minutes	Sanitarian is professional staff working at the Dinkes. In this case he/she acts as street level bureaucrat who promote public health and sanitation to Kampung inhabitants.
	Code: ST_INT_26 (Fisheries extensionist)	03/03/21	Face to face	Kampung Bogeman Wetan	57 minutes	Extensionist is professional staff working at the Office of Food and Agriculture. In this case he/she acts as street level bureaucrat who promote and facilitate urban agriculture especially in urban aquaculture.
	Code: ST_INT_27 (Community leader)	17/03/21	Face to face	Kampung Bogeman Wetan	49 minutes	Community leaders in Kampung Bogeman Wetan play important roles in the process of Kampung Teduh development. In most cases, community leaders represent community in dealing with other actors in urban development.
	Code: ST_INT_28 (Community leader)	17/03/21	Face to face	Kampung Bogeman Wetan	54 minutes	Community leaders in Kampung Bogeman Wetan play important roles in the process of Kampung Teduh development. In most cases, community leaders represent community in dealing with other actors in urban development.
Total	15 interviewees				14 hour 19 minutes	
Unstructured informal interview	UNST_72 (Kampung inhabitant)	18/02/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_73 (Kampung inhabitant)	18/02/21	Face to face	Kampung Bogeman Wetan	3 minutes	Actor's experiences of Kampung Teduh project in their daily lives

UNST_74 (Kampung inhabitant)	18/02/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_75 (Kampung inhabitant)	18/02/21	Face to face	Kampung Bogeman Wetan	11 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_76 (Kampung inhabitant)	23/02/21	Face to face	Kampung Bogeman Wetan	15 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_77 (Kampung inhabitant)	23/02/21	Face to face	Kampung Bogeman Wetan	16 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_78 (Sanitarian)	23/02/21	Face to face	Public Health Office of Magelang Tengah	13 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_79 (Kampung inhabitant)	24/02/21	Face to face	Kampung Bogeman Wetan	27 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_80 (Kampung inhabitant)	24/02/21	Face to face	Kampung Bogeman Wetan	33 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_81 (Kampung inhabitant)	24/02/21	Face to face	Kampung Bogeman Wetan	29 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_82 (Kampung inhabitant)	24/02/21	Face to face	Kampung Bogeman Wetan	6 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_83 (Kampung inhabitant)	27/02/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
UNST_84 (Kampung inhabitant)	28/02/21	Face to face	Kampung Bogeman Wetan	19 minutes	Actor's experiences of Kampung Teduh project in their daily lives

	UNST_85 (Staff of KOTAKU)	27/02/21	Face to face	Office of KOTAKU	13 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_86 (Kampung inhabitant)	28/02/21	Face to face	Kampung Bogeman Wetan	26 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_87 (Staff of KOTAKU)	01/03/21	Face to face	Office of KOTAKU	29 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_88 (Staff of KOTAKU)	01/03/21	Face to face	Office of KOTAKU	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_89 (Staff of KOTAKU)	01/03/21	Face to face	Office of KOTAKU	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_90 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	6 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_91 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_92 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	15 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_93 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	6 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_94 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	5 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_95 (Kampung inhabitant)	03/03/21	Face to face	Kampung Bogeman Wetan	1 hour 13 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_96 (Kampung inhabitant)	04/03/21	Face to face	Kampung Bogeman Wetan	8 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_97 (Kampung inhabitant)	04/03/21	Face to face	Kampung Bogeman Wetan	1 hour 14 minutes	Actor's experiences of Kampung Teduh project in their daily lives

	UNST_98 (Kampung inhabitant)	04/03/21	Face to face	Kampung Bogeman Wetan	32 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_99 (Kampung inhabitant)	09/03/21	Face to face	Kampung Bogeman Wetan	6 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_100 (Kampung inhabitant)	09/03/21	Face to face	Kampung Bogeman Wetan	11 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_101 (Kampung inhabitant)	11/03/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_102 (Kampung inhabitant)	11/03/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_103 (Kampung inhabitant)	11/03/21	Face to face	Kampung Bogeman Wetan	8 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_104 (Kampung inhabitant)	11/03/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_105 (Kampung inhabitant)	11/03/21	Face to face	Kampung Bogeman Wetan	5 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_106 (Kampung inhabitant)	17/03/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_107 (Kampung inhabitant)	17/03/21	Face to face	Kampung Bogeman Wetan	7 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_108 (Kampung inhabitant)	17/03/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives

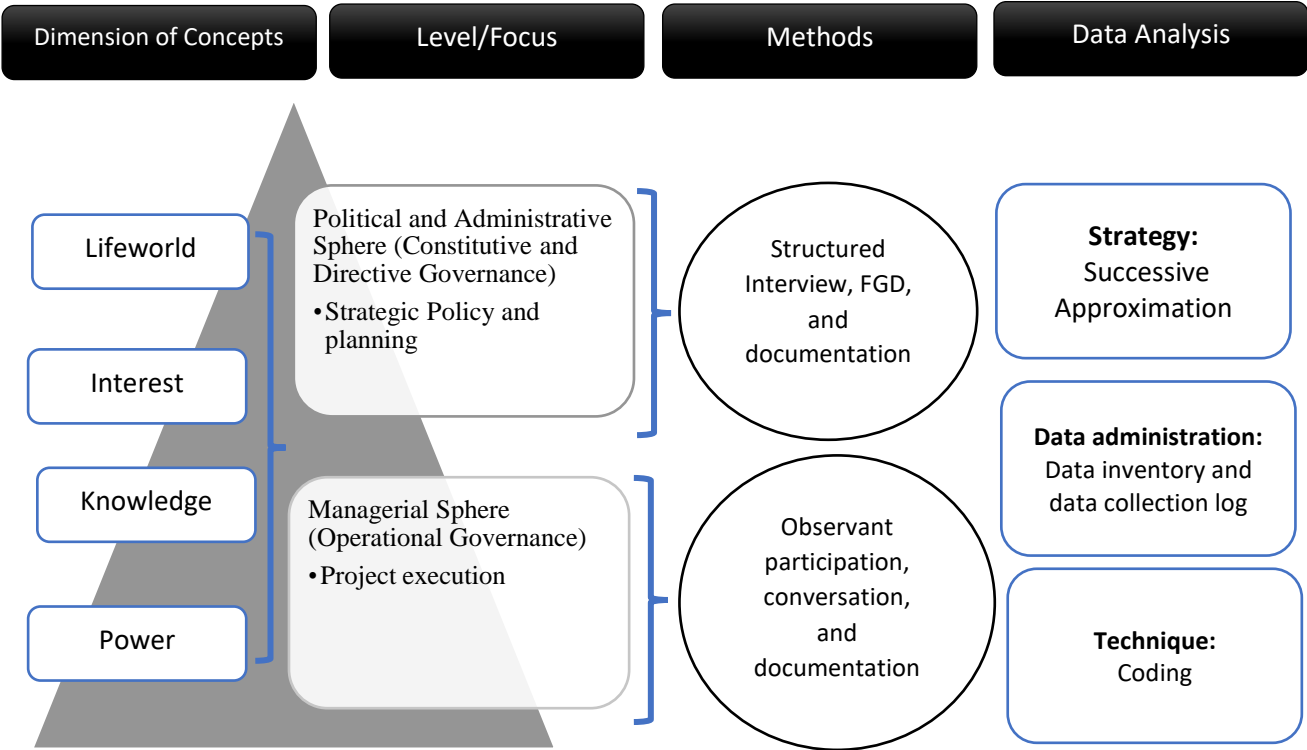|	UNST_109 (Kampung inhabitant)	17/03/21	Face to face	Kampung Bogeman Wetan	14 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_110 (Kampung inhabitant)	19/03/21	Face to face	Kampung Bogeman Wetan	12 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_111 (Kampung inhabitant)	19/03/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_112 (Kampung inhabitant)	19/03/21	Face to face	Kampung Bogeman Wetan	9 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_113 (Kampung inhabitant)	20/03/21	Face to face	Kampung Bogeman Wetan	3 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_114 (Kampung inhabitant)	22/03/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_115 (Kampung inhabitant)	24/03/21	Face to face	Kampung Bogeman Wetan	3 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_116 (Kampung inhabitant)	25/03/21	Face to face	Kampung Bogeman Wetan	10 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_117 (Kampung inhabitant)	29/03/21	Face to face	Kampung Bogeman Wetan	11 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_118 (Kampung inhabitant)	31/03/21	Face to face	Kampung Bogeman Wetan	5 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_119 (Kampung inhabitant)	01/04/21	Face to face	Kampung Bogeman Wetan	3 minutes	Actor's experiences of Kampung Teduh project in their daily lives

	UNST_120 (Kampung inhabitant)	01/04/21	Face to face	Kampung Bogeman Wetan	14 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_121 (Kampung inhabitant)	07/04/21	Face to face	Kampung Bogeman Wetan	4 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_122 (Kampung inhabitant)	13/04/21	Face to face	Kampung Bogeman Wetan	5 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_123 (Kampung inhabitant)	21/04/21	Face to face	Kampung Bogeman Wetan	6 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_124 (Kampung inhabitant)	21/04/21	Face to face	Kampung Bogeman Wetan	10 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_125 (Kampung inhabitant)	21/04/21	Face to face	Kampung Bogeman Wetan	26 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_126 (Kampung inhabitant)	21/04/21	Face to face	Kampung Bogeman Wetan	27 minutes	Actor's experiences of Kampung Teduh project in their daily lives
	UNST_127 (Kampung inhabitant)	21/04/21	Face to face	Kampung Bogeman Wetan	39 minutes	Actor's experiences of Kampung Teduh project in their daily lives
Total	71 unstructured interviews					
Community meeting participation	OM_3	28/02/21	Face to face	Kampung Bogeman Wetan	1 hour 9 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_4	28/02/21	Face to face	Kampung Bogeman Wetan	16 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I

						could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_5	06/03/21	Face to face	Kampung Bogeman Wetan	40 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_6	15/03/21	Face to face	Kampung Bogeman Wetan	1 hour 37 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_7	17/03/21	Face to face	Kampung Bogeman Wetan	32 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_8	20/03/21	Face to face	Kampung Bogeman Wetan	58 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
	OM_9	26/03/21	Face to face	Kampung Bogeman Wetan	1 hour 4 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.

	OM_10	19/04/21	Face to face	Kampung Bogeman Wetan	1 hour 59 minutes	Community meeting participation allowed me to scrutinize the insights, opinions, and perception about Kampung Teduh project. In addition, I could also mitigate and capture group dynamics among actors in the context of community meeting.
Total	8 official meetings				8 hour 50 minutes	

Observant participation	Observant participation was held between 1 February to 23 June 2021. During observation I jotted fieldnotes and diary. The field notes then further interpreted and organized into 45 consolidated notes.

Appendix 3 The linkage between concept, level of analysis, methods, and data analysis

Dimension of Concepts	Level/Focus	Methods	Data Analysis

- Lifeworld
- Interest
- Knowledge
- Power

Political and Administrative Sphere (Constitutive and Directive Governance)
- Strategic Policy and planning

Managerial Sphere (Operational Governance)
- Project execution

Structured Interview, FGD, and documentation

Observant participation, conversation, and documentation

Strategy: Successive Approximation

Data administration: Data inventory and data collection log

Technique: Coding

Source: Author

Appendix 4 List of News about the e-retribusi Project

File	Web	Main Message
News 1	http://www.magelangkota.go.id/home/detail/261020Prokompim4/pemkot-magelang-luncurkan-e-retribusi-pedagang-pasar-kebonpolo	The e-retribusi aims to improve transparency and cashless transaction within the city's financial management
News 2	https://jatengprov.go.id/beritadaerah/dorong-pembayaran-nontunai-penerapan-e-retribusi-diperluas/	After successful implementation of the e-retribusi, the Magelang City government expand the project to other traditional markets.
News 3	https://magelangekspres.com/pedagang-pasar-kebonpolo-mulai-gunakan-e-retribusi/	The successful implementation of the e-retribusi project in Kebon Polo traditional market.
News 4	https://www.antaranews.com/berita/1980468/wali-kota-magelang-retribusi-pasar-makin-efisien-dengan-e-retribusi	The e-retribusi project in Magelang City achieve efficiency.
News 5	https://radarjogja.jawapos.com/magelang/2020/10/27/kurangi-kebocoran-terapkan-e-retribusi/	The e-retribusi successfully implemented in Kebon Polo and Cacaban traditional market by diminishing fraud in levy collection.
News 6	https://jogja.tribunnews.com/2020/10/26/e-retribusi-diterapkan-di-pasar-di-kota-magelang-untuk-cegah-kebocoran	The objective to diminish fraud in levy collection has been achieved by implementing e-retribusi
News 7	https://ne-np.facebook.com/RadioTidarFM/posts/pemerintah-kota-magelang-meluncurkan-retribusi-elektronik-e-retribusi-bagi-pedag/4976240029053577/	The e-retribusi supports the cashless transaction on the local government business process.
News 8	https://borobudurnews.com/optimalkan-pembayaran-non-tunai-pasar-di-kota-magelang-terapkan-e-retribusi/	The Magelang City government utilized technology to improve the levy collection system.
News 9	https://www.suaramerdeka.com/ekonomi/pr-04151049/pedagang-pasar-kebonpolo-terapkan-retribusi-elektronik	The implementation of e-retribusi in Kebon Polo traditional market
News 10	https://www.tagar.id/bayar-nontunai-2-pasar-di-magelang-terapkan-eretribusi	The e-retribusi successfully implemented in Kebon Polo and Cacaban traditional market.
News 11	https://suaramerdekakedu.id/e-retribusi-siap-diterapkan-di-pasar-tradisional-magelang/	Magelang City government are ready to expand the e-retribusi project.

News 12	https://www.posjateng.id/warta/pasar-tradisional-kota-magelang-terapkan-retribusi-el-b1XpJ9cyW	The e-retribusi project is collaborative initiative between the Magelang City government and Bank Jateng.
News 13	https://humas.magelangkota.go.id/pasar-sidomukti-kota-magelang-mulai-terapkan-e-retribusi/	After successful implementation of the e-retribusi, the Magelang City government expand the project to Sido Mukti traditional market.
News 14	https://www.youtube.com/watch?v=o6ohoHchPT8	The video depicts the launch of e-retribusi in Kebon Polo traditional market in which the Magelang City mayor try to operate the levy collection using EDC and e-money.

All Data were accessed on 01/06/2022 and re-checked on 28/11/2022

Appendix 5 Aspect, Criteria, and Indicators for Slum

Aspects	Criteria	Indicators
Building Condition	Building irregularity	The building does not comply with the provisions of building layout in spatial planning, including setting the shape, size, placement, and appearance of buildings in a zone; and / or
		Failure to comply with the provisions on building layout and environmental quality systems including setting the environmental blocks, lots, buildings, floor heights and elevations, the concept of environmental identity, the concept of environmental orientation, and road faces
	Building density	Exceed the provision of spatial planning
		High building density at the location: • for metropolitan cities and big cities> 250 units / Ha • for medium cities and small towns> 200 units / Ha
	Unqualified building quality	Building quality that does not meet the requirements: • environmental impact control • construction of buildings above and / or under the ground, water and / or infrastructure / public facilities • building safety • building health • building comfort • ease of building
Road Conditions	Road service coverage	Some housing or settlement locations are not served by roads in accordance with technical provisions
	Road surface quality	Part or all of the neighborhood roads are damaged
Provision of drinking water	Unavailability of safe access to drinking water	Communities in housing and settlement locations cannot access drinking water which is colorless, odorless, and tasteless
	unfulfilled drinking water needs	The community's need for drinking water in a housing or settlement location does not reach a minimum of 60 liters / person / day
Drainage conditions	Inability to discharge water runoff	The drainage network is unable to drain runoff, causing puddles with a height of more than 30 cm for more than 2 hours and occurring more than 2 times a year

	Unavailability of drainage	The unavailability of drainage channels in the housing or settlement environment.
	Disconnection with urban drainage systems	Drainage channels are not connected to channels in the hierarchy above, causing water to not flow and causing stagnation
	Unmaintained drainage	There is no routine and or periodic maintenance
	Drainage construction quality	The quality of drainage construction is poor, because it is excavated without any coating or covering material or because damage has occurred
Waste water management conditions	Wastewater management system does not comply with technical standards	Wastewater management at residential or residential locations does not have an adequate system, toilets that are not connected to the septic tank either individually / domestically, communally or centrally.
	Wastewater Management Infrastructure and Facilities Incompatible with Technical Requirements	The condition of infrastructure and facilities for wastewater management in a housing or settlement location: unavailability of a centralized or local sewage treatment system
Waste management conditions	Solid waste infrastructure and facilities do not comply with technical requirements	- No trash bins with waste sorting on a domestic or household scale - No garbage collection point (TPS) or 3R (reduce, reuse, recycle) at an environmental scale; - No garbage carts and / or garbage trucks at an environmental scale - No integrated waste treatment plant (TPST) at an environmental scale
	Solid waste management system that does not appropriate technical standards	- No domestic sorting and sorting; - No waste collection; - No transport; - No environmental processing
	Non-maintenance of solid waste Management Facilities and Infrastructure	There is no routine and or periodic maintenance
Fire protection conditions	Unavailability of fire protection infrastructure	- water supply; - roads; - means of communication; - environmental fire protection system data; and - fire post building

| | Unavailability of fire protection facilities | • Light Fire Extinguisher (APAR);
• car pump;
• stairs as needed; and
• other supporting equipment |

Appendix 6 List of Law and Government Regulations

English	Indonesian
Government Regulation No. 26/2008 on the National Spatial Plan	Peraturan Pemerintah Nomor 26 tahun 2008 tentang Rencana Tata Ruang Wilayah Nasional
Central Java Provincial Regulation No. 6/2010 on the Central Java Spatial Plan 2009-2029	Peraturan Pemerintah Provinsi Jawa Tengah Nomor 6 Tahun 2010 tentang Rencana Tata Ruang Wilayah Jawa Tengah 2009-2029
Law No.25 Year 2004 on national Development Planning System	Undang-Undang Nomor 25 Tahun 2004 tentang Sistem Perencanaan Pembangunan Nasional
Presidential Regulation No.58 Year 2014 on Borobudur Spatial Plan	Peraturan Presiden Nomor 58 Tahun 2014 tentang Rencana Tata Ruang Kawasan Borobudur dan Sekitarnya.
Presidential Regulation No.3 Year 2016 on Acceleration of National Strategic Project Implementation.	Peraturan Presiden Nomor 3 Tahun 2016 tentang Percepatan Pelaksanaan Proyek Strategis Nasional.
Law No.1 Year 2011 on Housing and Settlement	Undang-Undang Nomor 1 Tahun 2011 tentang Perumahan dan Kawasan Permukiman
Minister of Housing and Public Work Regulation No.14 Year 2018 on Quality Improvement toward Slum	Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 14 Tahun 2018 tentang Pencegahan Dan Peningkatan Kualitas Terhadap Perumahan Kumuh Dan Permukiman Kumuh
Magelang City Mayor Regulation Number 79 Year 2017 on General Services Levies	Peraturan Walikota Magelang Nomor 79 Tahun 2017 tentang Retribusi Jasa Umum
Magelang City Regulation Number 3 Year 2017 on General Services Levies	Peraturan Daerah Kota Magelang Nomor 3 Tahun 2017 tentang Perubahan atas Peraturan Daerah Kota Magelang Nomor 17 Tahun 2011 tentang Retribusi Jasa Umum.
Magelang City Mayor Decree Number 050/105/112 Year 2018 about slums location in Magelang City 2018	Keputusan Walikota Magelang Nomor 050/105/112 Tahun 2018 tentang Penetapan Lokasi Kawasan Perumahan dan Permukiman Kumuh di Kota Magelang tahun 2018
Magelang City Mayor Number 050/117/112 Year 2021 about slums location in Magelang City 2021	Keputusan Walikota Magelang Nomor 050/117/112 Tahun 2021 tentang Penetapan Lokasi Kawasan Perumahan dan Permukiman Kumuh di Kota Magelang tahun 2021
Magelang City Mayor Decree Number 050/153/112 on Magelang Smart City Council	Keputusan Walikota Magelang Nomor 050/153/112 Tahun 2019 tentang Pembentukan Dewan Smart City Kota Magelang