

Smart Governance Towards Quality of Life Standards

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Abstract

The rapidly growing population that is concentrated in urban areas requires rapid adjustment of government services to achieve a decent standard of living for urban communities. The United Nation projects that around 55% of the world's people live in urban areas. Innovation, creativity and development planning are needed to accommodate people's needs due to the complexity of the city. In this context, Smart City is the answer in dealing with changes in urbanization trends in big cities. The Smart City concept positions the city as an ecosystem of many connected subsystems in supporting the city to remain sustainable (sustainable cities). Smart City is an alternative problem solving to accommodate the need for fast service along with the increasing population density of Medan City which currently reaches 9,283 people/km² in 2022 with a growth rate of 9-10% per year. This study aims to contribute to the lack of empirical studies by analyzing the influence of Smart Governance factors on Quality of Life in the context of Smart City in Medan City, Indonesia. In this study we define five research hypotheses that analyze the effect of Transparency (TRANS) and Collaboration (COL) on quality of life (QL) in Smart City. This research was conducted in the city of Medan using a quantitative correlation approach with SEM (Structural Equation Modeling) analysis techniques operated through the AMOS program. Sampling using nonprobabilistic sampling with random sampling. Based on the results of the analysis, it was found that the variables Transparency (TRANS) and Collaboration (COL) have a positive effect on Quality of Life with a CR value of 3.821 respectively; -3.475; which is greater than ± 1.96 and the probability is smaller than 0.05. Thus it can be concluded that the two hypotheses can be accepted

Key words: Smart City, Quality of Life, Sustainable City, ICT.

INTRODUCTION

The rapidly growing population that is concentrated in urban areas requires rapid adjustment of government services to achieve a decent standard of living for urban communities. The United Nation projects that around 55% of the world's people live in

urban/urban areas. This percentage will continue to increase along with changes in the trend of life in the capital. The report released by the United Nations in World Urbanization Prospects projects that by 2050 more than two-thirds of humans will live in urban areas (United Nation, 2018). The new direction towards the phenomenon of change in people who choose to live in urban areas has implications for economic, social and cultural aspects (Harahap, 2013; Thuzar, 2011; Oktaria, 2017). The city government has the responsibility to accommodate all the needs of the multidimensional urban community. In responding to this social challenge, the government is encouraged to use innovation, creativity and comprehensive planning in order to achieve a decent standard of living for all levels of society (Pereira, Parycek, Falco, & Kleinhans, 2018; Mooij, 2003; Scholl & Scholl, 2014).

Innovation, creativity and development planning are needed to accommodate people's needs due to the complexity of cities, cities can be defined as ecosystems inhabited by diverse interests that can be encouraged to collaborate with each other in achieving a sustainable environment and decent quality of life standards. Adequate quality of life is interpreted as a positive situation that produces prosperity. This positive situation arises through attitudes, behaviors and empathy that can increase socialization among people, reduce violence, broaden networks and strengthen friendship, support, which makes people happier and healthier. In this context, Smart City is the answer in dealing with changes in urbanization trends in big cities. Smart City is a smart city concept in supporting convenience for the community by managing existing resources more efficiently and effectively and by providing appropriate information needs for the community. The Smart City concept positions the city as an ecosystem of many connected subsystems in supporting the city to remain sustainable (sustainable cities). There is six main components namely: First; renewable energy and energy efficiency (smart energy); Second, management of clean water and waste water (smart water); Third, green transportation and logistics (smart transportation); Fourth, products and services that are environmentally friendly (green products and services); Fifth, green building and interior (green building); Sixth, green information and communication technology or information communication and technology/ICT (green ICT).

Smart City is an alternative problem solving to accommodate the need for fast service along with the increasing population density of Medan City, which currently reaches 2.5 million people/km² in 2020 with a growth rate of 9-10% per year (BPS, 2020). This demographic bonus also provides its own challenges for the Medan city government, the need for services must be supported by advances in information systems

and technology in the field of public services in order to create a more comfortable, orderly, healthy and efficient life in every aspect of city life. Medan.

Currently the city of Medan has a variety of services that support the improvement of the standard of living of the people in the city of Medan. In the Smart Governance dimension, there are licensing applications, e-devplan, command center, JDIH Pemko Medan, Simpeg, LPSE, Sibisa, Online Media Recommendations, PPID, SiRup Medan city, Sinobu Metrology and smart-wan. Several information technology-based services are already available on the Google Playstore.

Even though the Medan City government has started prioritizing information technology-based service programs in Medan City in the agenda and strategic plans initiated by stakeholders, the Medan City Government still has to try hard enough to be included in the top five cities in the 2021 Indonesia Digital Transformation and Smart Cities Rating category. (RKCI & RTDI). Based on the results of research by the ITB City Innovation Center and Smart Community (PIKKC) team by assessing indicators such as the readiness and ability of cities to provide security, comfort, and ease of accessing public services such as education, health, mobility, population announcing the 5 best cities in the big city category namely: Bandung, Semarang, Surabaya, Bogor, and Tangerang City.

Communities have an important role as subjects in supporting the progress of Smart City, communities are expected to become Smart Users in using information and actively participating in government actions, development plans and future policies. Smart City Succession is built on the aspirations, suggestions, participation and feedback of the community in the government process. The Smart City Initiative is the driving force for creating policies that contribute to a better society which in turn will increase the standard of quality of life.

An important component in Smart City is a harmonious blend of Human Capital, social capital and information with the use of information technology to produce economic development, improve people's welfare and quality of life. Therefore quality of life is a major component in the development of Smart City.

De Jong et al. (2015) and Wolfram (2018) explain that the impact of implementing the Smart City concept on people's quality of life has received little attention. Most publications relate Smart City governance as a technical or managerial issue. In addition, evaluation studies regarding the impact of Smart City governance on the realization of economic growth and other public values are still lacking.

According to Ruhlandt (2018), research on Smart City lacks a systematic understanding of the various components of Smart City governance. Meijer & Bolivar, (2015) and Meijer et al. (2015) emphasized the need for in-depth empirical research that provides answers and academic understanding between technology and governance, the role of leadership in government, participatory governance structures and collaborative media that encourage the development of Smart Cities.

Based on the problems described above, this study aims to contribute to the scarcity of empirical studies by analyzing the influence of the Smart factor Governance on Quality of Life in the context of Smart City in Medan City. In this study we define two research hypotheses that analyze the effect of Transparency (TRANS), Collaboration (KOL) on quality of life (QL) in Smart City.

LITERATURE ANALYSIS AND METHODOLOGY

Smart City

Smart City was originally used in the 1990s which refers to cities that use Information and Communication Technology (ICT) which aims to cut bureaucratic flows and simplify services (Albino, Berardi, & Dangelico, 2015). However, the Smart City concept is not limited to the diffusion and adoption of ICT but to meet the needs of society (Kummitha and Crutzen, 2017). From this perspective, Smart City is defined as a complex ecosystem, surrounded by innovation and creativity, which aims to maintain and develop a sustainable environment and with a better Quality of Life for its people.

Therefore, the government and public institutions quality of life for their citizens (Shen et al., 2018) Caragliu (2011) and Trindade et al., (2017) found that Smart City has main characteristics which are divided into 6 (six) components such as; Administrative Effectiveness and Economic Efficiency, Business Oriented, Goal Oriented, High Technology and Creative Industries, Goals and Partnership Social Capital, social and environmental sustainability. Other researchers (Lee, Hancock, & Hu, 2014); also focuses on Smart City management, such as: (a) smart mobility, (b) smart economy, (c) smart living, (d) smart environment, (e) smart government, (f) and, smart people. Quality of life becomes an important component in the context of Smart City (Hall, 2000; Giffinger et al., 2007; Nam and Pardo, 2011; Thuzar, 2011). In this context, Hall (2000), Nam and Pardo (2011) and Thuzar (2011) emphasize that efforts made for sustainable development and urban economic growth aim to offer an increased quality of life for its citizens. Therefore, the Smart City concept goes beyond technological issues, including concern for the welfare of citizens, such as infrastructure for education and innovation, business-

government partnerships, community-driven innovation and service quality (Bibri and Krogstie, 2017).

Research Hypotheses

Transparency

Transparency is needed as an instrument for community empowerment that can help fight corruption and represent the commitment of public officials with accountability in decision making (Odendaal, 2003; Mooij, 2003; Schware and Deane, 2003. Albino et al. (2015) emphasize that the design of Smart City has an impact on people's quality of life. Communities have a fundamental role in the management of smart cities. In addition to exercising citizenship, the task of monitoring and managing data is carried out in a transparent manner (TRANS) which affects the reduction of corruption.

H1 : Transparency has a positive effect on quality of life

Collaboration

Collaboration is community and government collaboration in finding solutions to overcome problems that occur (Lam, 2005; Luna- Reyes et al., 2007; Chourabi et al., 2012). Therefore, an approach that is considered important relates to collaboration by empowering communities, through collaborative contexts and interconnection and systematization of data used to improve people's lives, turning them into healthy and happy environments (De Jong et al., 2015), where people can learn and develop with a better quality of life.

H2 : Collaboration has a positive effect on quality of life

Research Framework

In accordance with the theoretical basis above, the framework of thought can be seen in the following figure 1.

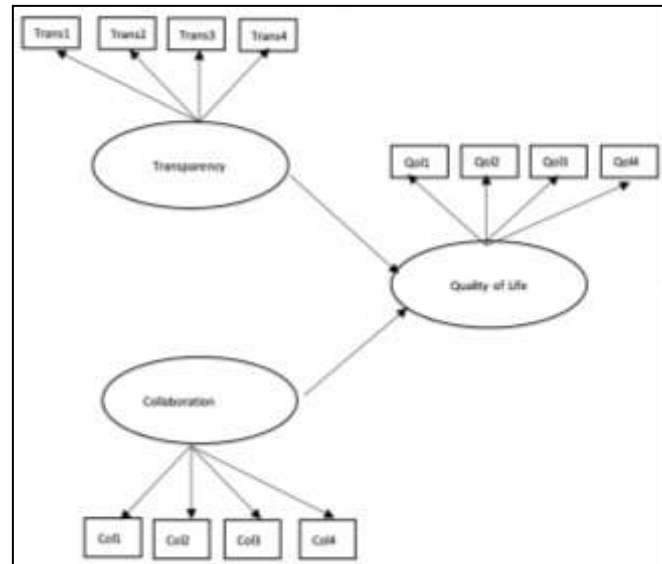


Figure 1 Research Framework

METHOD

The type of research used is causality research, with the aim of seeking explanations in cause-effect relationships between several variables). The method used is quantitative using SEM (Structural Equation Modeling) with the AMOS version 22 software package.

This study used a non-probabilistic sampling technique, The samples used in the study is 324 respondents, the samples were randomly selected (Hair et al., 2010). The questionnaire is the instrument used in this study. Respondents were approached in person, via email and via social media using the Google Form. For online data collection, the Snowball method was used, where the Google form was initially sent to the researcher's contact, which was then sent to other respondents. The Snowball method is used as a way to obtain a larger and more homogeneous sample, in which the researcher sends invitations to some respondents to participate in research and this spreads invitations to other respondents (Hair et al., 2010).

RESEARCH AND RESULTS

Data collection lasted for 2 months and then descriptive data analysis was carried out. This analysis is used to describe the condition of the respondents' answers for each variable. Questionnaires distributed by respondents as many as 324 questionnaires. Questionnaires that returned and fulfilled the sample criteria were 324 questionnaires.

The results of the answers from the questionnaire are then used to get the tendency of respondents' answers regarding the conditions of each research variable.

Data analysis used in this study is Structural Equation Modeling (SEM) by first testing the dimensions with confirmatory factor analysis. Evaluation of the SEM model will also be analyzed to obtain and evaluate the suitability of the proposed model. After knowing all the results of data processing, then it will be discussed and the last is drawing conclusions based on the results of the analysis of these results.

Model Development

Modeling in SEM analysis is carried out by developing a measurement model and a structural causality model. The measurement model will produce an assessment of convergent validity and discriminant validity. Meanwhile, the structural model will provide an assessment of predictive validity.

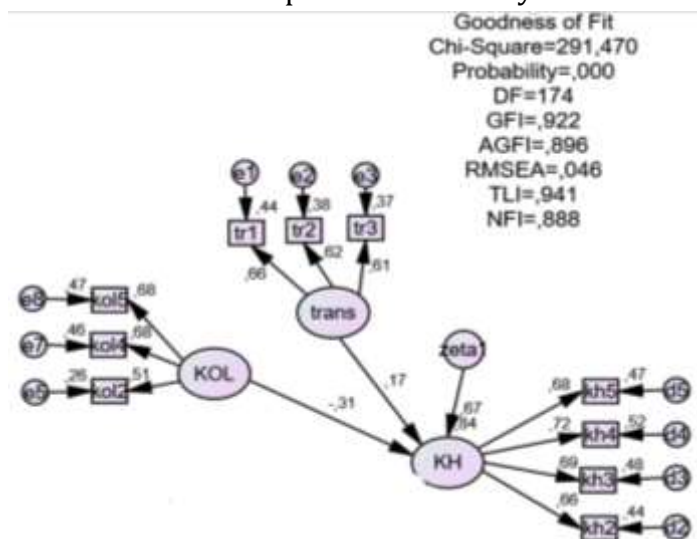


Figure 2. result of Structural Equation Model (SEM)

Validity Test

Test the validity of the validity convergent test, namely testing the construct (indicator) has a high proportion of variance or not. The measurement criteria are met if the Loading Factor or Standardized Loading Estimate > 0.5.

Table 1. Result of Variance Extracted (AVE) dan Discriminant Validity ($\sqrt{\text{AVE}}$)

Variabel	Estimate	(Estimate) ²	1-(Estimate) ²	Σ (Estimate) ²	Σ (1-(Estimate) ²)	AVE (Syarat > 0,50)	$\sqrt{\text{AVE}}$ (Syarat > 0,70)
Kualitas Hidup	0,66	0,32	0,44	1,92	1,92	0,57	0,75
	0,58	0,24	0,34	1,47	3,39		
	0,62	0,29	0,39				
	0,62	0,30	0,39				
	0,61	0,32	0,37				
Transparansi	0,66	0,58	0,43	1,20	1,20	0,53	0,73
	0,67	0,28	0,45	1,06	2,26		
	0,57	0,21	0,32				
Kolaborasi	0,52	0,22	0,27	1,59	1,59	0,62	0,79
	0,51	0,20	0,26	0,98	2,57		
	0,69	0,30	0,47				
	0,77	0,26	0,59				

Reliability Test

Reliability test with construct reliability test that is testing the reliability and consistency of data. Meets the criteria if Construct Reliability > 0.7.

Table 2. Construct Reliability (Cr) Test Result

Variabel	Estimate	(Estimate) ²	Σ Estimate	Σ (Estimate) ²	CR (Syarat > 0,70)
Kualitas Hidup	0,66	0,32	9,59	9,59	0,87
	0,58	0,24	1,47	11,06	
	0,62	0,29			
	0,62	0,30			
	0,61	0,32			
Transparansi	0,66	0,58	3,57	3,57	0,77
	0,67	0,28	1,06	4,63	
	0,57	0,21			
Kolaborasi	0,52	0,22	6,17	6,17	0,86
	0,51	0,20	0,98	7,15	
	0,69	0,30			
	0,77	0,26			

Hypothesis Test

After all the assumptions can be fulfilled, then the hypothesis testing will be carried out as proposed in the previous chapter. Testing the 2 hypotheses of this study was carried out based on the Critical Ratio (CR) value of a causality relationship from the results of SEM processing as shown in table 3 below.

Table 3. Regression Weight Structural Equational Model

	Estimate	S.E.	C.R.	P	Label
KH <--- trans	,222	,058	3,821	***	par_5
KH <--- KOL	-,300	,086	-3,475	***	par_6

1. Hypothesis Testing 1

The estimation parameter for testing transparency on quality of life shows a CR value of 3.821 and with a probability of 0.001. The two values obtained meet the requirements for acceptance of H1, namely a CR value of 3.821 which is greater than ± 1.96 and a probability smaller than 0.05. Thus it can be concluded that hypothesis 1 (H1) which states that transparency has a positive effect on quality of life, can be accepted.

2. Hypothesis Testing 2

The estimation parameter for testing the effect of Collaboration on quality of life shows a CR value of 3.475 and with a probability of 0.001. The two values obtained meet the requirements for acceptance of H1, namely a CR value of 3.475 which is greater than ± 1.96 and a probability smaller than 0.05. Thus it can be concluded that hypothesis 2 (H2) which states that Collaboration has a positive effect on quality of life, can be accepted.

CONCLUSION AND RECOMMENDATIONS

There are five hypotheses proposed in this study. The conclusions of the five hypotheses are as follows:

1. Conclusion regarding Hypothesis 1

H1: Transparency has a positive effect on quality of life

The hypothesis testing conducted proved that transparency has a positive effect on quality of life. Thus the higher the level of transparency in public services, the higher the quality of life of the people.

From the results of the study it was found that indicators of technology use had a greater influence than other indicators on the Quality of Life dimension. By looking at the relatively high effect of the use of technology on quality of life, the supporting factors for the use of technology such as the provision of digital-based services and commitment to data openness with the use of technology need to be increased.

2. Conclusion regarding Hypothesis 2

H2: Collaboration has a positive effect on Quality of Life

The hypothesis testing was carried out to prove that there is a positive influence between Collaboration and Quality of Life. This shows that good collaboration can improve the quality of life, in other words, the higher the collaboration, the higher the quality of life. From the results of the study it was found that the collaboration indicator between the government and the community had the greatest contribution compared to other indicators on the quality of life dimension. By looking at the effect of the highest collaboration between the government and the community on the quality of life, in order to improve the quality of life, continuous efforts are needed so that the level of quality of life is getting better.

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