Journal of Research Administration
Society of Research Administrators International

THE ROLE OF E-BUREAUCRACY WITH POLITICAL RISK AS MODERATION VARIABLE IN SUPPORTING GREEN SMART CITY INITIATIVE: EVIDENCE FROM BATU CITY

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Abstract. The green smart city initiative is a program that harnesses technology and digital innovation to improve urban living and the overall quality of life for citizens. This initiative encompasses a range of solutions such as smart energy management, traffic management, waste management, and efficient city planning. Smart cities utilize information and communication technology to capture and analyze data, provide real-time insights, enhance decision-making capabilities, and optimize city operations. The goal of a green smart city is to create a sustainable, cost-effective, and citizen-centered urban environment that enables growth and innovation. The smart city initiative has gained momentum globally, with cities worldwide embracing digital innovation to transform their urban environment. This study aims to investigate the role of e-bureaucracy and environmental sustainability influences the Batu green smart city initiatives. Using the partial least square structural equation modeling (PLS-SEM), this paper also examines the political risk perception that has been moderating the relationship between the role of e-bureaucracy and the Batu green smart city initiative.

1. Introduction

The concept of green smart cities has become increasingly relevant in recent years as urban environments become more crowded and complex. Batu City in East Java, Indonesia is famous for its many exciting tourist villages, which offer unique cultural, natural, and culinary experiences that attract tourists' attention. The development of tourist villages in Batu City continues to grow in line with the increasing interest of tourists. The local government and community are working to develop infrastructure, promote tourism villages, and improve services to tourists to create a better experience. However, the development of tourist villages often requires utilizing natural resources around them, such as land, water, and forests. If not managed properly, excessive, or unsustainable use can cause ecosystem damage, water quality decline, and land degradation. Unplanned tourism village development can result in uncontrolled spatial changes, such as irregular construction, land use changes, deforestation, and increased infrastructure development. Therefore, it is important to have a sustainable management plan and maintain a balance between tourism needs and environmental preservation. Local governments, local communities, and related parties should work together to address these issues through policy development, good planning, close supervision, and the implementation of sustainable practices in the development of tourism villages in Batu City. Then, it will help maintain the balance between tourism development and environmental sustainability.

Batu City, one tourism destination city in East Java Province, faces carbon emissions that are major contributors to climate change and needs special attention from local governance to overcome and anticipate those environmental issues. According to a previous study, East Java is one of the largest CO2 emitters in Indonesia from the transportation sector and energy use in industry. In 2007, CO2 emissions produced by East Java Province from the transportation sector and energy use in industry amounted to 8,999,000 tons of CO2. Meanwhile, according to polluting carbon emissions in East Java, every day reaches 7,544.485 grams of CO2-ek/cap/day (Kominfo Jawa Timur, 2018). The pollution comes from the transportation and industrial sectors. Besides that, Bappeda Tulungagung reported that the achievement of reducing greenhouse gas emissions in East Java Province in 2018 amounted to 9,166,578.24 CO2 eq or 7.53% of the year's emission reduction target. However, the most recent data on carbon emissions in East Java has not been found in this search result. In addition, Batu City also faces various natural disasters. According to data from the Central Bureau of Statistics (BPS), 109 natural disasters occurred in Batu City in 2019, with total damage amounting to IDR 1,526.05 million (Table 1.1).

Table 1.1. Natural disaster types occurred in Batu City in 2019

Type of Disaster	Amount of Disaster	Total Damage		Number of Casualties		Property Loss (IDR)
		Houses	Facilities (Unit)	Injuries	Deceased	
Landslide	20	3	-	-	-	-
Strong winds	25	585	12	-	1	300.000.000
Flood	15	28	-	-	-	65.200.000
Earthquake	-	-	-	-	-	-
Tornado	-	-	-	-	-	-
Conflagration	22	7	1	-	4	1.090.700.000
Forest fire	23	-	-	-	-	70.150.000
Sink	4	3	-	-	-	-

source: BPS Kota Batu, 2019

One key aspect of smart city implementation is the use of e-bureaucracy, which involves the use of digital technologies to improve administrative processes and public services, especially in supporting the Batu green smart city project. E-bureaucracy enables citizens to access government services online, thus reducing the need for physical interactions and reducing bureaucratic red tape. This is a critical component in creating a more efficient and sustainable urban community as a part of smart city objectives. E-bureaucracy also allows governments to collect better data, which can be used for planning and decision-making purposes [1]–[3]. As smart city technologies continue to evolve, it is expected that e-bureaucracy will become even more important, ensuring that tourist villages can manage their growth responsibly while continuing to provide a high level of service to their citizens.

Despite the potential advantages of e-governance, such as faster and more convenient services, the implementation of digital solutions could create new inefficiencies and obstacles due to bureaucracy and resistance to change. The introduction of new systems and processes, especially in building a smart city concept for instance, may require extensive training for employees, and some citizens may not have the necessary skills or access to technology to use e-government services. One of the major challenges in implementing the green smart city concept is political risk [1], [2], [4]. Political instability, changes in government policies, and bureaucratic red tape can make it difficult to implement smart city initiatives. Different political parties and leaders may have different priorities, which might not align with the goals of green smart cities. Thus, changes in government leadership [5]–[7] can lead to disruption at a critical time, causing delays and disrupting the continuity of green smart city initiatives. This unpredictability can cause uncertainty among stakeholders, including investors, citizens, and businesses.

Another political risk is bureaucratic red tape. Many smart city initiatives require significant coordination among different government agencies [8], which can be challenging to navigate. Getting the necessary permits and approvals can take longer than expected, causing delays, and increasing costs. Moreover, the complex regulatory environment can make it difficult for businesses to enter the market and offer innovative solutions. Governments need to establish clear policies and regulations that can attract private sector investment and encourage innovation while ensuring that these initiatives align with the city's overall goals. It can be a daunting task, especially in less developed countries where the legal and regulatory frameworks may be weak. Nonetheless, overcoming political risk is crucial to realizing the full potential of the smart city concept. As a result, this e-bureaucracy paradox [8] highlights the need for a balance between technology and bureaucracy in achieving effective and inclusive public services. Therefore, this study aims to investigate how the e-bureaucracy influences environmental sustainability and green smart city initiatives, especially in Batu City. Additionally, this study also examines the moderating effect of political risk perception on the association of e-bureaucracy with green smart city initiatives.

2. Literature review

The analysis of the theoretical background included in this section has involved different research topics around the creation of sustainable value. A study that is related to green smart cities is recently gaining attention from academics. Several researchers work interdisciplinary and combine IT knowledge [2], [9], and ecosystem issues [10]–[12] in green smart city initiatives. Some previous studies [13], [14] have been invented, including the utilization of biotechnology and the Internet of Things for green smart city applications, and the innovation ecosystem for green smart city building in China and Malaysia [15]–[17]. Other studies such as Sigma's technological innovation ecosystem for implementing the strategy of the green smart city [18], [19], cloud infrastructure design model for the green smart city [20], [21], and deep interpretation of environmental governance for the green smart city [22], [23] have also contributed on the green smart city initiatives. The smart cities initiative is often suggested as a means of reducing CO2 emissions in urban areas. Nevertheless, the technology behind these systems can have adverse environmental effects, including the release of greenhouse gases, through direct, indirect, and rebound impacts. Studies that evaluate the environmental benefits of information and communication technology (ICT) primarily concentrate on direct effects, with little consideration given to indirect and rebound effects.

Issues about governance's role in smart city initiatives [24], [25] have been focused on and highlighted the crucial role of governance in ensuring all related actors' involvement in the smart city initiative. Additionally, the study views governance in smart cities as a strategizing process. [16] suggest cooperation and co-creation strategies, whereas [26] advocate for a comprehensive strategy to guide collaboration choices and innovation processes in smart city projects. Other studies [1], [19], [27] are aimed at developing the concept of a green smart city model. [28], [29] stated that there is an urgent need to direct municipalities toward combining the benefits arising from the use of digital tools with attention to solutions that serve the environment. This paper emphasizes the model of eco-transformation processes for a green smart city, or it may be called an evaluation of the municipality's activity toward its ecological maturity and environmental sustainability. Furthermore, to execute the strategies, several values (e.g., education, cognitive aspects, implications, and guidelines) needed to be added in pursuit of ecological maturity. The implementation of innovative solutions to urban environmental challenges in smart cities is only possible with such strategies for innovation and collaboration. An effective governance system is essential for the success of smart city ecosystems due to the involvement of a diverse range of partners. To achieve the environmental sustainability objective, it is a critical prerequisite that all stakeholders, including citizens, could collaborate and create innovative solutions for the smart city.

Furthermore, a green smart city can be implemented through an ecosystem. [30] found that setting up an innovation ecosystem may help develop a green smart city (GSC). His study explored the rules of building an innovation ecosystem and how Sigma's open innovation effectively promotes international technology transfer and regional innovation development, which drives local innovation and industry development in China. In developing a digital governance model that can activate and align all relevant actors within a smart city ecosystem, this paper draws on insights from various strands of literature that have examined collaboration and governance. Our analysis begins with an examination of ecosystem literature [10], [12], [31] and then extends to the smart city literature [3], [27], [32]. While the importance of governance in smart city literature has been acknowledged, it is not yet fully understood. In contrast, ecosystem literature has explored governance in greater depth. Therefore, combining insights from both bodies of literature can enhance our understanding of governance within a smart city context.

All studies suggest that the innovation of technology and environmental sustainability may have a positive contribution to a green smart city. However, the explanation effect of the political risk in moderating the relationship between e-bureaucracy with a green smart city hasn't been discussed. Thus, this study aims to analyze the relationship between those latent variables regarding supporting a green smart city initiative, as well as to examine the effect of moderation variables on the proposed research structural model. The proposed conceptual framework is developed by the following diagram:

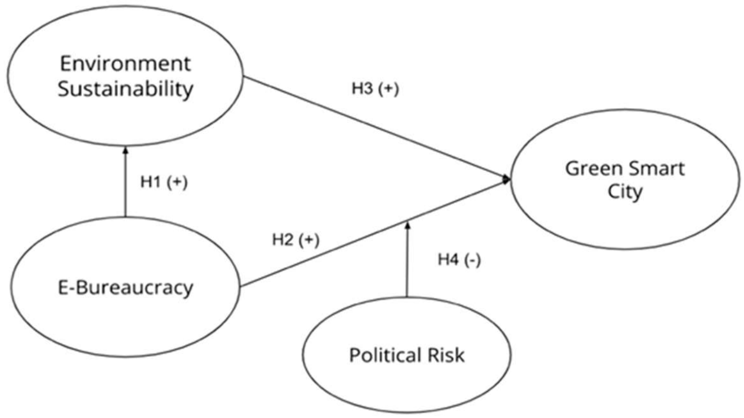

Figure 2.1 Conceptual framework

From that structural model, then we could develop 5 (five) hypotheses which are:

H1: Does e-bureaucracy have a significant influence on environmental sustainability?

H2: Does e-bureaucracy have a significant influence on green smart city initiatives?

H3: Does environmental sustainability have a significant influence on green smart city initiatives?

H4: Does political risk perception have been moderating significantly to the e-bureaucracy influence on green smart city initiatives?

3. Method

This study uses a quantitative approach, which can describe in detail the topics raised and measure the output value objectively. The population of this study is a government officer in Batu City and the sample consists of a government officer in Batu City as many as 98 respondents. The purposive sampling technique used in this study by looking for respondents in accordance with the research topic. More narrowly, this study applies a survey as a research methodology by distributing questionnaires to civil servants and government employees with at least a year of work experience in government agencies.

In general, researchers must consider such the background of the model, the research objectives, the distributional data characteristics, the psychometric properties of latent variables, and the magnitude of their relationships when determining sample size. [33] suggest that sample size can be driven by the following factors in a structural equation model design: (1) The significant level; (2) The statistical power; (3) The minimum coefficient of determination (R2 values) used in the model; and (4) The maximum number of arrows pointing at a latent variable.

In practice, a typical psychological and social study would have a significance level of 5%, a statistical power of 80%, and R2 values of at least 0.25. Using such parameters, the minimum sample size required can be looked up from the guidelines suggested by [34], [35], which is depending on the maximum number of arrows pointing at a latent variable as specified in the structural equation model (see Table 3.1):

Table 3.1 Suggested sample size in typical behavioral research

The minimum sample size required	Maximum # of arrows pointing at a latent variable in the model
52	2
59	3
65	4
70	5
75	6
80	7
84	8

Source: Marcoulides & Saunders (2006) in [34]

Although PLS is well known for its capability of handling small sample sizes, it does not mean that the research goal should merely fulfill the minimum sample size requirement. Previous research suggests that a sample size of 100 to 200 is usually a good starting point in carrying out path modeling [36]. Please note that the required sample size will require to be increased if the research objective is to explore low-value factor intercorrelations with indicators that have poor quality. Therefore, the study determined to use 98 respondents as a sample size, after distributing 100 questionnaires in which there are 2 (two) respondents had not returned.

The analysis technique used in this study is partial least square structural equation modeling (PLS-SEM), a set of statistical techniques used to measure and analyze the relationships between observed and latent variables. PLS involves the construction of a model to represent how various aspects of an observable or theoretical phenomenon are thought to be causally and structurally related to one another. Two main components of models are distinguished in PLS-SEM: the structural model showing potential causal dependencies between endogenous and exogenous variables, and the measurement model showing the relations between latent variables and their indicators. PLS-SEM is a powerful multivariate analysis technique that is widely used in the social sciences, and its applications range from the analysis of simple relationships between latent variables to complex analyses of measurement equivalence for first and higher-order constructs.

The reason this paper uses the PLS-SEM method is that its analysis does not assume that the data is normally distributed, and it can work for models with limited samples [37]. Moreover, this research develops a structural model where e-bureaucracy is an exogenous variable associated with environmental sustainability and green smart city initiatives as endogenous variables. The research model also involves a moderating variable, namely perceived political risk, where it is hypothesized that political risk moderates the effect of e-bureaucracy on green smart city initiatives.

4. Results

4.1 Respondent characteristics and descriptive statistics

As a small city located in the East Java province of Indonesia, Batu City is one of the popular tourist destinations due to its stunning natural beauty and rich cultural heritage. The city is surrounded by lush green forests, beautiful mountains, and pristine beaches, making it an ideal place for outdoor activities such as trekking, hiking, and water sports. Batu City is also home to several historical landmarks, including ancient temples and palaces that offer a glimpse into the city's rich history. Additionally, the city is famous for its delicious local cuisine and traditional handicrafts, which can be found in the local markets.

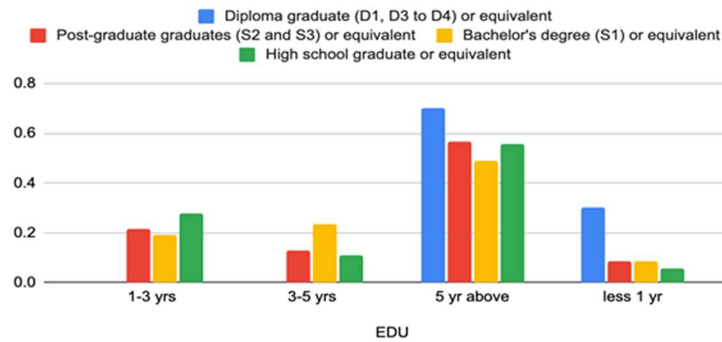

Figure 4.1 Profile of respondents based on working experience and education (in %)

Overall, Batu City is a must-visit destination for anyone looking to experience the beauty and culture of Indonesia. Table 4.1 shows the characteristic of respondents as a unit analysis of the study, while the profile of respondents based on working experience and education are in Figure 4.1.

Table 4.1 Descriptive statistics

	SEX		
EDU	Male	Female	Grand Total
Diploma graduate (D1, D3 to D4) or equivalent	6	4	10
Post-graduate graduates (S2 and S3) or equivalent	15	8	23
Bachelor's degree (S1) or equivalent	30	17	47
High school graduate or equivalent	16	2	18
Grand Total	67	31	98

Source: Calculated

4.2 Evaluation of measurement models

Researchers must distinguish between notions that are formatively stated and those that are reflectively specified while analyzing measurement models. PLS-SEM's confirmatory tetrad analyses can be used for a preliminary evaluation to aid in differentiating between the formative and reflective modes [38], [39]. The indicator loadings should be examined if a researcher used reflectively assessed constructs. Above 0.70 standard loadings are preferred [39]. Researchers can subsequently investigate the internal consistency reliability by ensuring that Cronbach's α, ρA, and composite reliability are higher than 0.70 and below 0.95 [39].

Table 4.2 Outer loadings of indicators

Indicators	Outer Loadings	Remarks
EGO1 <- EGO	0.669	Not Valid
EGO2 <- EGO	0.611	Not Valid
EGO3 <- EGO	0.780	Valid
EGO4 <- EGO	0.886	Valid
EGO5 <- EGO	0.800	Valid
EGO6 <- EGO	0.845	Valid
EGO7 <- EGO	0.829	Valid
EGO8 <- EGO	0.846	Valid
EGO9 <- EGO	0.814	Valid
ENV1 <- ENVI	0.869	Valid
ENV2 <- ENVI	0.851	Valid
ENV3 <- ENVI	0.917	Valid
ENV4 <- ENVI	0.875	Valid
ENV5 <- ENVI	0.588	Not Valid
ENV6 <- ENVI	0.552	Not Valid
ENV7 <- ENVI	0.347	Not Valid
ENV8 <- ENVI	0.494	Not Valid
GSC1 <- GSC	0.274	Not Valid
GSC2 <- GSC	0.133	Not Valid
GSC3 <- GSC	0.305	Not Valid
GSC4 <- GSC	0.932	Valid
GSC5 <- GSC	0.943	Valid
GSC6 <- GSC	0.931	Valid
SOC1 <- SOC	0.791	Valid
SOC2 <- SOC	0.786	Valid
SOC3 <- SOC	0.771	Valid
SOC4 <- SOC	0.811	Valid
SOC5 <- SOC	0.865	Valid
SOC6 <- SOC	0.787	Valid
SOC7 <- SOC	0.750	Valid

*Valid if outer loadings' value > 0.7 (Hair et al., 2021)

From Table 4.2 above, we found 9 (nine) indicators are not valid due to the outer loadings' values are below 0.7 [39]. Therefore, those indicators are excluded from the model and then the estimation procedure is recalculated. The results of recalculated outer loadings, Cronbach's alpha, composite reliability, and AVE are shown in Table 4.3 below as follows:

Table 4.3 Outer loadings, Cronbach's alpha, Composite reliability, and AVE

Variables	Indicators	Outer Loadings	Cronbach's alpha	Composite reliability	AVE
e-Bureaucracy	EGO3	0.727	0.927	0.942	0.698
	EGO4	**0.868**			
	EGO5	0.807			
	EGO6	0.861			
	EGO7	0.865			
	EGO8	**0.876**			
	EGO9	0.834			
Environment Sustainability	ENV1	0.927	0.936	0.954	0.838
	ENV2	0.897			
	ENV3	**0.935**			
	ENV4	0.902			
Green Smart City	GSC4	0.958	0.957	0.972	0.920
	GSC5	**0.962**			
	GSC6	0.958			
Political Risk	SOC1	0.784	0.903	0.923	0.632
	SOC2	0.777			
	SOC3	0.775			
	SOC4	0.807			
	SOC5	**0.871**			
	SOC6	0.792			
	SOC7	0.752			

While Cronbach's alpha is the most conservative criterion, composite reliability is the most liberal, and ρA is a roughly exact reliability measure of the PLS-SEM composites, the outcomes of these three reliability tests show that all latent variables have no discriminant validity issues. Researchers should also evaluate the convergent validity. For this use, the average variance extracted (AVE) criterion is appropriate. The construct accounts for an average of at least 50% of the variance of its elements if the AVE is greater than 0.50. [37].

From Table 4.3 it can be concluded that the e-bureaucracy variable is measured by 7 (seven) valid indicator items, where the outer loadings value lies between 0.727 - 0.876 which shows that the seven measurement items are strongly correlated in explaining the e-bureaucratic variable. The reliability level of the e-bureaucracy variable can be accepted with a composite reliability value of 0.942 and Cronbach's alpha of 0.927 above 0.7 and convergent validity shown by EVA 0.698 > 0.50. Among the seven valid measurement items, the e-bureaucratic variable looks stronger reflected by the EGO8 (LF=0.876) and EGO4 (LF=0.868) indicators.

Likewise, the environmental sustainability variable is measured using 4 (four) valid indicator items where the outer loadings value lies between 0.897 - 0.935. The level of reliability of environmental sustainability can be accepted with a composite reliability value of 0.954 and Cronbach's alpha 0.936 above 0.7 and convergent validity (AVE=0.838) above 0.5 with the ENV3 indicator (LF=0.935) being the strongest in reflecting environmental sustainability variables. Thus, Table 4.3 indicates that all indicators of the rest variables (green smart city with AVE=0.920 and political risk perception with AVE=0.632 which are above 0.5) have no reliability and convergent validity issues on the model construct.

Moreover, researchers also suggest evaluating discriminant validity to assure that theoretically the variables are different and empirically proven with statistical testing. When examining discriminant validity, most studies use the Fornell-Larcker criterion and cross-loadings [39]. However, [38] has demonstrated that these criteria perform poorly in terms of revealing discriminant validity issues.

Table 4.4 The Fornell-Larcker criterion

	ENV	GSC	SOC	EGO
Environment Sustainability (ENV)	**0.928**			
Green Smart City (GSC)	0.737	**0.959**		
Political Risk (SOC)	0.813	0.738	**0.795**	
e-Bureaucracy (EGO)	0.811	0.704	0.753	**0.835**

Evaluation of discriminant validity needs to be done by looking at the Fornell and Larcker criteria [40]. Discriminant validity is a form of evaluation to ensure that variables are theoretically different and empirically proven/statistical testing. The Fornell and Larcker criterion [41] is that the root AVE of the variable is greater than the correlation between the variables. The environmental sustainability variable has the root AVE (0.928) which is greater than the correlation of the green smart city variable (0.737), greater than the correlation of political risk (0.813), greater than the e-bureaucracy correlation (0.811) (see Table 4.4).

4.3 Evaluation of structural models

PLS-SEM examines linear causal relationships among latent variables while simultaneously calculating for measurement error. PLS-SEM is commonly used to analyze data with limited participants, and it enables researchers to test complex models with many variables. PLS-SEM is composed of the measurement model and the structural model evaluation. A measurement model evaluation measures the latent variables or composite variables, while the structural model tests all the hypothetical dependencies based on path analysis. In a PLS-SEM, the researcher specifies a theoretical model that describes the relationships between the variables of interest. The model is represented using a path diagram depicting the hypothesized causal relationships between the variables. The researcher then fits the model to the data using specialized software, which estimates the values of the model parameters and tests the model's goodness of fit to the data.

Table 4.5 Inner VIF

	VIF
ENV -> GSC	4.0770
SOC -> GSC	3.4670
EGO -> ENV	1.0000
EGO) -> GSC	3.2420
SOC x EGO -> GSC	1.3510

Before testing the structural model hypothesis, conducting a multicollinear test between variables, namely with the statistical measure of inner VIF is necessary. In Table 4.5 the estimation results show that the inner VIF value < 5, so the multicollinear level between variables is low. These results confirm that parameter estimation in structural models is robust (unbiased).

Table 4.6 Hypothesis tests

	Coefficients (N=98, df=0.5)	T statistics (N=98, df=0.5)	P values (N=98, df=0.5)	f-square
H1: e-Bureaucracy -> Environment Sustainability	0.811***	21.798	0.000	1.921
H2: e-Bureaucracy -> Green Smart City	0.172	1.157	0.247	0.025
H3: Environment Sustainability -> Green Smart City	0.309***	2.136	0.033	0.060
H4: Political Risk x e-Bureaucracy -> Green Smart City	- 0.106***	2.583	0.010	0.056

Note: *** is significant

In general, an explanatory research method is a methodical approach that uses PLS. This is because in this method there is hypothesis testing. Testing the hypothesis can be seen from the t-statistic value and the probability value. For hypothesis testing using statistical values, for alpha 5% the t-statistic value used is 1.96. So that the criteria for accepting or rejecting the hypothesis is Ha is accepted and H0 is rejected when the t-statistic > 1.96. To reject or accept the hypothesis using probability, Ha is accepted if the p-value is <0.05.

Table 4.6 shows that hypothesis one (H1) which e-Bureaucracy has a significant positive effect on environmental sustainability as indicated by the t-statistics value greater than the t-table value (21.798 > 1.96). It means that the higher the e-Bureaucracy created by the government, the higher the environmental sustainability. However, hypothesis two (H2) shows that e-Bureaucracy has no significant effect on the green smart city initiative, which implies that the lower the e-Bureaucracy created by the Batu City government, the lower the green smart city initiative. Furthermore, hypothesis three (H3) of which environmental sustainability has a significant positive effect on green smart city initiatives is accepted, indicated by the t-statistics value greater than the t-table value (2.136 > 1.96). It means that the higher the environmental sustainability created by the Batu City government, will give the higher effect on the green smart city initiative.

Finally, hypothesis four (H4) reveals that political risk as a moderating variable significantly weakens the relationship between e-Bureaucracy and green smart city initiative, indicated by t-statistics greater than the t-table (2.583 > 1.96). At the structural level, the effect of political risk in moderating the influence of e-bureaucracy on green smart city initiatives is relatively high (f-square = 0.056). Thus, [39] states that the f-square value of the moderation test is more than 0.025 including groups that have high influence. Detailed path analysis and the significant effect of variables are shown in Figure 4.2.

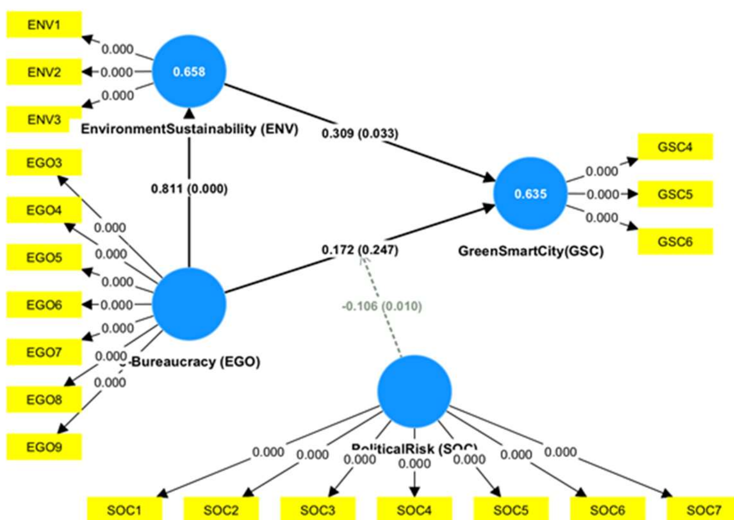

Figure 4.2 Result of the conceptual framework

The statistical size of the R-square describes the magnitude of variation of endogenous variables that can be explained by other exogenous variables in the model. According to [37] the qualitative value of R square interpretation is 0.19 (low), 0.33 (moderate), and 0.66 (high). Based on the results of this PLS processing, it can be said that the magnitude of the e-bureaucracy determined the environmental sustainability is as much as 65.8% (close to high influence). Moreover, the magnitude of variation of green smart city variable that can be explained by e-bureaucracy and environment variables is considered moderate (63.5 percent).

The Q square value describes a measure of prediction accuracy, i.e., how well each change in an exogenous/endogenous variable can predict an endogenous variable. This measure is a form of validity in PLS to express the predictive relevance of the model. As a rule of thumb, Q2 values higher than 0, 0.25, and 0.50 depict small, medium, and large predictive relevance of the PLS-path model, the results of this study, thereby indicating a higher predictive accuracy.

Table 4.7 Standardized Root Mean Square Residual (SRMR)

SRMR	0.071
d_ULS	1.06
d_G	0.99
Chi-square	514.363
NFI	0.758

The SRMR value is a measure of model fit, which is the difference between the data correlation matrix and the model estimate correlation matrix [37]. In [39], SRMR values below 0.08 indicate a fit model. However, in [37], SRMR values between 0.08 – 0.10 indicate an acceptable fit model. In table 4.7 the model estimation result is 0.071, which means that the model in this study has a less fit match.

5. Conclusion

After all analysis and the hypothesis assessment are conducted to answer the research problem, the following conclusion describes follows: (1) Green smart city initiative has been significantly influenced by environmental sustainability, which is supporting to the previous research, while e-bureaucracy has positively influenced the green smart city initiative even not significant; (2) Moreover, the effect of political risk in moderating the influence of e-bureaucracy on green smart city initiatives is relatively closed to high or moderate; and (3) the magnitude of the e-bureaucracy determined the environmental sustainability is closed to high, while the magnitude of variation of green smart city variable that can be explained by e-bureaucracy and environment variables is considered moderate explanatory power. In addition, the result of this study also confirmed that the structural model indicates an acceptable fit model. The policy implications of this study are for the local government of Batu administration must consider the environmental sustainability issues and political risks when adopting and implementing the green smart city initiatives.

The limitation of this study is that the questionnaire return rate is only 98 percent due to some of the respondents getting assignments so the questionnaire could not be filled in optimally. For further research, the other determinants, such as civil society engagement or cultural intelligence issues that may improve environmental sustainability and green smart city policies should be considered in the future.

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