Applications of Structural Equation Modeling (SEM) in Effective Urban Management

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Abstract: *Approaching the Sustainable Urban Development (SUD) goal, this research based on the theoretical and practical basis for analyzing the factors reflecting the urban management effectiveness according to the sustainable urban development goal, whence it can support managers to improve quality of life. Structural equation modeling (SEM) is an extremely flexible linear-in-parameters multivariate statistical modeling technique. Therefore, we collected data for seeking practical evidence for the model, sample size is 306 values. The content of the article focuses on 2 main issues: Research design, data collection procedure theoretical framework of the quantitative model and the results of the application for building effetive urban management model. The reliability and value of the scale are determined by Confirmatory factor analysis (CFA), the results of Structural equation modeling (SEM) show that effitive urban management is influenced by 5 factors: Govmance (GO), Participation and Partnership (PP), Infomation (IT), Socio-economic, political and cultural Conditions (CO) and Civil servant (CS).*

Keywords: *SEM, sustainable development, urban management, effective urban management*

I. INTRODUCTION

Vietnam's impressive growth is coupled with intensive urban transition. Since 2010, Vietnam's urban population has been growing about 3% per year, placing it well above the Southeast Asian average of 2.5%. As a result, in 2021 the urbanization rate of the country reached 38% with around 37.1 million of total population lived in the cities. From around 500 cities and urban centres in 1990, Viet Nam currently has 888 cities and urban areas including 02 special cities (Ha Noi and Ho Chi Minh City); 22 central cities or provincal cities as Class-I urban centres; 33 provincial cities as Class-II; 47 provincial cities or towns as Class-III ; 94 towns and townlets as Class-IV and 690 townlets as class-V urban centres, distributed throughout the country. By the end of September 2023, the country has 902 urban areas. Achievements in urban development, such as: VietNam urban system has strong development in terms of scale, quantity and quality; Urban architecture is innovative and model; Many cities has been constructed according to urban planning; Several cities have been recognized by the international community that contribute to enhancing their attractiveness and competitiveness; The living conditions of the urban people have been gradually improved; The infrastructure system is gradually being modernized in the direction of modernization and synchronization. However, increased urban sprawl associated with social, environmental, and economic effects, has led to pollution, environmental destruction, poor land use management, unsuitable urban design. These problems have caused public disruption, ineffectual movement, transportation congestion, general well-being, and increase health risks. Through extensive literature review, it is clear that the urban management in Vietnamese cities still has much such shortcomings and limitations as follows: lack of Govemance supervision, lack of fixed policy, lack of procedural review, lack of participation, lack of coordination with serious lack of integrity and transparency in the handing violation, lack of proffesional staff, lack of urban databas… This rapid urbanization along with technological advancement and changing life styles have resulted in a number of urban problems asserting more pressure on urban managers how to manage effectively. The overview issues which have been simulated the factors affecting urban management effectiveness will be summarized in Table 1 below.

Table 1. Factors affecting effective urban management

Conditions (CO)	CO1	Sustainable Economic development	Giffinger et al., 2010; Francesco et al., 2013; Suridechakul, 2015; Chiara Garau et al., 2018; Sharifi, 2019
	CO2	Education level	Srichuae et al., 2015; Anand et al., 2017
	CO3	Urban lifestyle	Srichuae et al., 2015; RyoSakurai et al., 2015; Anand et al., 2017
	CO4	Stable political system	Suridechakul 2015; Chiara Garau et al., 2018
Govmance (GO)	GO1	Legal Framewwork	Francesco et al., 2013; Anand et al., 2017, Fernandez-Anez et al., 2017; Chiara Garau et al., 2018; Gil et al., 2019; Mabona et al., 2019; Liua et al., 2020;
	GO2	Accountability	Sayer et al., 2000; Mooij, 2003; Healey, 2006; Jonga et al., 2009; Chourabi et al., 2012; Alnsour, 2014; Suridechakul, 2015; Zhuang et al., 2016; Liua et al., 2020
	GO3	Transparency	Odendaal, 2003 ; Mooij, 2003; Harrison et al., 2012; Liua et al., 2020;
	GO4	Suppervision	Zhuang et al., 2016; Chiara Garau et al., 2018; Gil et al., 2019
	GO5	Communication	Odendaal, 2003; Luna-Reyes et al., 2007; Chourabi et al., 2012; Maheshwari et al., 2014; Capdevila, 2015; Fernandez-Anez et al., 2017; Mabona et al., 2019
Participation and Partnership (PP)	PP1	Compliance with Law	Odendaal, 2003; Gifefinger et al., 2010; Harrison et al., 2012; Chourabi et al., 2012; Kiptoo et al., 2014; Suridechakul, 2015; Fernandez-Anez et al., 2017
	PP2	Propagate and disseminate the Legal system	Nare et al., 2011; Akhondzadeh-Noughabi et al., 2012; RyoSakurai et al., 2015; Suridechakul, 2015; Zhuang et al., 2016; Horganv et al., 2016; Chiara Garau et al., 2018
	PP3	Public meeting	Nare et al., 2011; RyoSakurai et al., 2015; Chiara Garau et.al, 2018; Gil et al., 2019; Mabona et al., 2019
	PP4	Sharing and advocacy	Koppenjan, 2009; Akhondzadeh-Noughabi et al., 2012; Johnson ett al., 2014; RyoSakurai et al., 2015; Horgan et al., 2016; Mabona et al., 2019; Sharifi, 2019
Information Technologies (IT)	IT1	Improving of marking decision processes	Akhondzadeh-Noughabi et al., 2012; Saniei, 2014; Gil et al., 2019; Horgan et al., 2016;
	IT2	Saving time and cost	Saniei, 2014; Chiara Garau et al., 2018
	IT3	Communication	Saniei, 2014; Horgan et al., 2016; Sharifi 2019; Gil et al., 2019
	IT4	Mitigate risks	Akhondzadeh-Noughabi et al., 2012; Saniei, 2014; Horgan et al., 2016; Sharifi, 2019
Civil Servant (CS)	CS1	Skills	Jonga et al., 2009; Nhamo et al., 2013; Francesco et al., 2013; Zhao, 2013
	CS2	Traits	Zhao, 2013
	CS3	Attitude	Zhao, 2013
	CS4	Ability	Alnsour, 2014
	CS5	Knowledge	Jonga et al., 2009; Nhamo et al., 2013; Zhao, 2013

II. METHODOLOGY

In carrying out this study, we have been implemented the research process that can be simplified using the diagram below:
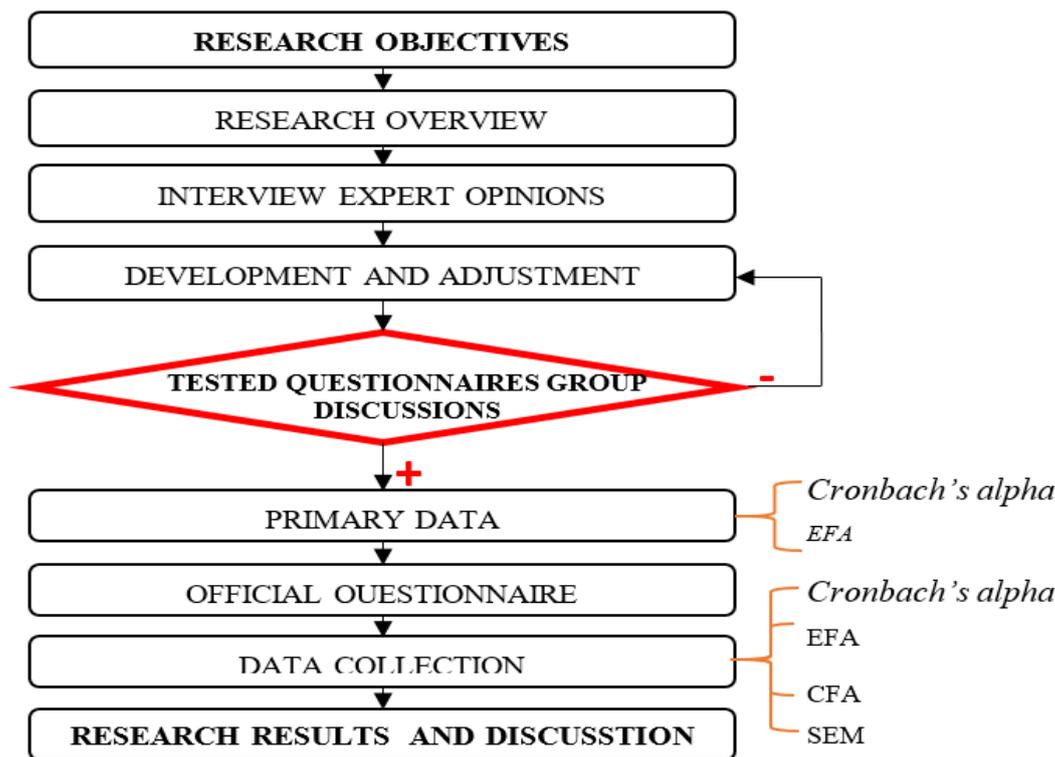
Fig 1. Research Process

To supplement into the theoretical basis and propose measures to improve the quality of urban management, authors really appreciate and acknowledge the advatages of the analyzing the factors affecting the effective urban management and those factors which impact the satisfaction of urban residents for urban management. This analysis factors has meaning both scientific and practical. This will help managers to be able to recognize the influence of the factors. And so, this paper will suggest measures to improve the quality of urban management through the analysis of the factors base on the SEM model.

In order to meet the purpose of the study, this section discusses the sample selection procedure, variables selection, the model used for the research and the statistical techniques. Firrst of all, The selection of questionnaire items was initially decided through two research group discussions. After expert consultation, some items were merged and some were deleted. Authors conducted a small pre-survey of urban leader and professional officials in Ha Noi capital to improve the questionnaire and finally refined the questionnaire items. as a result, we reached the conclusion that the survey was structured in three parts, with a total of 30 questions. Secondly, the extent of existence for all variables in the research area was measured on a five-point likert scale ranging from Strongly Agree to Strongly Disagree. Ranging from 1 to 5: (1) Strongly Agree, (2) Agree, (3) Neutral, (4) Disagree, (5) Strongly Disagree. After that, the source of data for this study is primary data acquired through questionnaire. This study mainly concentrated in paper questionnaires. urban citizens use paper questionnaires, and investigators would assist them in completing the survey. investigators distributed 350 questionnaires and recovered 320 questionnaires. The response rate of the questionnaire was 95.6%. After removing incomplete and illogical questionnaires. Eventually, investigators got 308 valid questionnaires. The respondents answered the questionnaire anonymously and their privacy was protected.

The next steps of the reseach process, authors implemented Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) and applicated Structural equation modeling (SEM) model to try to determine factors affecting urban management effectiveness (Hair et al., 2016, Jörg Henseler et al., 2015, Tzeng Yih et al., 2012; Wynne et al., 1995).

So, authors gave the proposed research hypotheses as following:

"Hypothesis 1. There is a positive impact of Governance on effective urban management .

"Hypothesis 2. There is a positive impact of Information Technology on effective urban management.

"Hypothesis 3. There is a positive impact of Civil Servant on effective urban management.

"Hypothesis 4. There is a positive impact of Participation and Partnership on effective urban management.

"Hypothesis 5. There is a positive impact of Socio-economic, political and cultural Conditions on effective urban management.

All hypotheses and factors are showed as Fig. 2
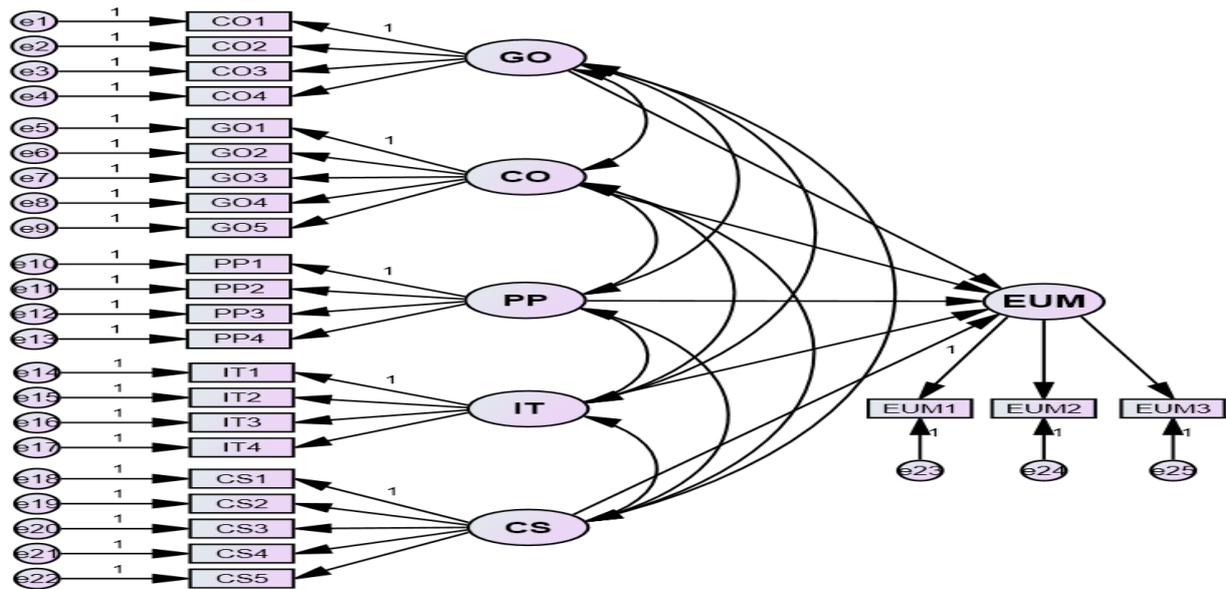
Fig 2. Theoretical model proposed – Framework

Authors used Excel 2016 software to input data, SPSS 22.0 software and AMOS 20.0 to analyze it. Authors also used statistical description to obtain the data profile, chi-square to identify the influencing factors, correlation analysis to analyze the relationship between sub-aspects of satisfaction, and factor analysis to extract common factors. The significant level was 0.05.

III. RESULTS AND DISCUSSIONS

Findings of the study are discussed, consist of: Data analysis and discussion; Reliability of the scale reliability of total items; Reliability of Total Items; Reliability of individual items; Model Summary; Coefficient & Hypothesis Testing (Hair et al., 2016.

The scale was administered to the respective sample in order to collect the data for the study. The scoring was done as per the instructions set by the respected authors in the manual.

The reliability of the questionnaire was checked, and the Cronbach's Alpha value was 0.606 >0.6 (see Table 2) (Hair et al. 2010; Hair et al., 2016). Authors found the correlation between overall satisfaction and sub aspects satisfactions was significant. Authors also used exploratory factor analysis to extract potential factors.

In this reflective model convergent validity is tested through composite reliability or Cronbach's alpha. Composite reliability is the measure of reliability since Cronbach's alpha sometimes underestimates the scale reliability. There is GO5 variable (Cronbach's Alpha =0.81 >0.6 but Corrected Item-Total Correlation (Pvc) =0.257<0.3), so GO5 variable should be excluded from this model. Table 2 shows that composite reliability varies from 0.606 to 0.862 which is above preferred value of 0.5. This proves that model is internally consistent. To check whether the indicators for variables display convergent validity. Cronbach's alpha is used. From Table 2, it can be observed that all the factors are reliable (Cronbach's alpha > 0.60 and Pvc > 0.3).

Table 2. Item-Total Statistics; Cronbach's Alpha: .862; N of Items: 24

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Cronbach's Alpha: .810; N of Items: 4			Cronbach's Alpha: .707; N of Items: 4		
GO1	.644	.754	CO1	.554	.606
GO2	.617	.767	CO2	.525	.624
GO4	.669	.741	CO3	.473	.656
GO3	.581	.783	CO4	.423	.687
Cronbach's Alpha: .803; N of Items:4			Cronbach's Alpha: .789; N of Items: 4		
PP1	.561	.780	IT1	.549	.761
PP2	.636	.744	IT2	.628	.722
PP3	.648	.740	IT3	.611	.731
PP4	.628	.749	IT4	.604	.734
Cronbach's Alpha: .796; N of Items: 5			Cronbach's Alpha: .839; N of Items: 3		
CS1	.632	.740	EUM1	.679	.798
CS3	.467	.793	EUM2	.734	.746

	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CS2	.597	.751	EUM3	.695	.785
CS4	.621	.743			
CS5	.575	.759			

The KMO value (Kaiser-Meyer-Olkin, $0,5 \leq KMO \leq 1$, measures the strength of relationship among the variables) is 0.849 >0.5 (Table 3), therefore it is suitable for factor analysis. The value of Bartlett's sphericity test is 2566.618 (p=0.000<0.005), which meant there is a correlation between variables and potential factors can be extracted (see Table 3). (Hair et al. 2016, Wynne et al., 1995)

Tabel 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.849**
Bartlett's Test of Sphericity	Approx. Chi-Square	2566.618
	df	276
	Sig.	**.000**

Finally, six potential factors were extracted because the extraction of each variable was sufficient and each potential factor has a clear meaning. The amount of Information extracted was 62.409% (Table 4), which was relatively sufficient. The rotation correlation matrix was presented in Table 5. Then Authors identified potential factors of urban citizens satisfaction and obtained factor scores.

Model summary was shown in Table 4. Value of RSquare is 50.346 showed that 50.346%>50% variation in Effective urban management due to the independent variables

Table 4. Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.931	24.711	24.711	5.460	22.749	22.749	3.505
2	2.469	10.287	34.998	2.015	8.396	31.144	2.972
3	1.899	7.912	42.909	1.339	5.581	36.725	3.349
4	1.761	7.337	50.246	1.250	5.206	41.932	3.296
5	1.653	6.887	57.133	1.162	4.841	46.773	3.597
6	1.266	5.276	**62.409**	.857	3.573	**50.346**	2.301

Extraction Method: Principal Axis Factoring.

Table 5. Pattern Matrix[a]

Factor	1	2	3	4	5	6
CS4	.747					
CS1	.730					
CS2	.658					
CS5	.645					
CS3	.529					
GO1		.760				
GO4		.751				
GO2		.702				
GO3		.636				
PP2			.780			
PP3			.710			
PP4			.708			
PP1			.607			
IT2				.737		
IT3				.720		
IT4				.709		
IT1				.617		

EUM2				.826	
EUM3				.757	
EUM1				.733	
CO2					.710
CO1					.677
CO3					.562
CO4					.509

Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser Normalization;a. Rotation converged in 6 iterations
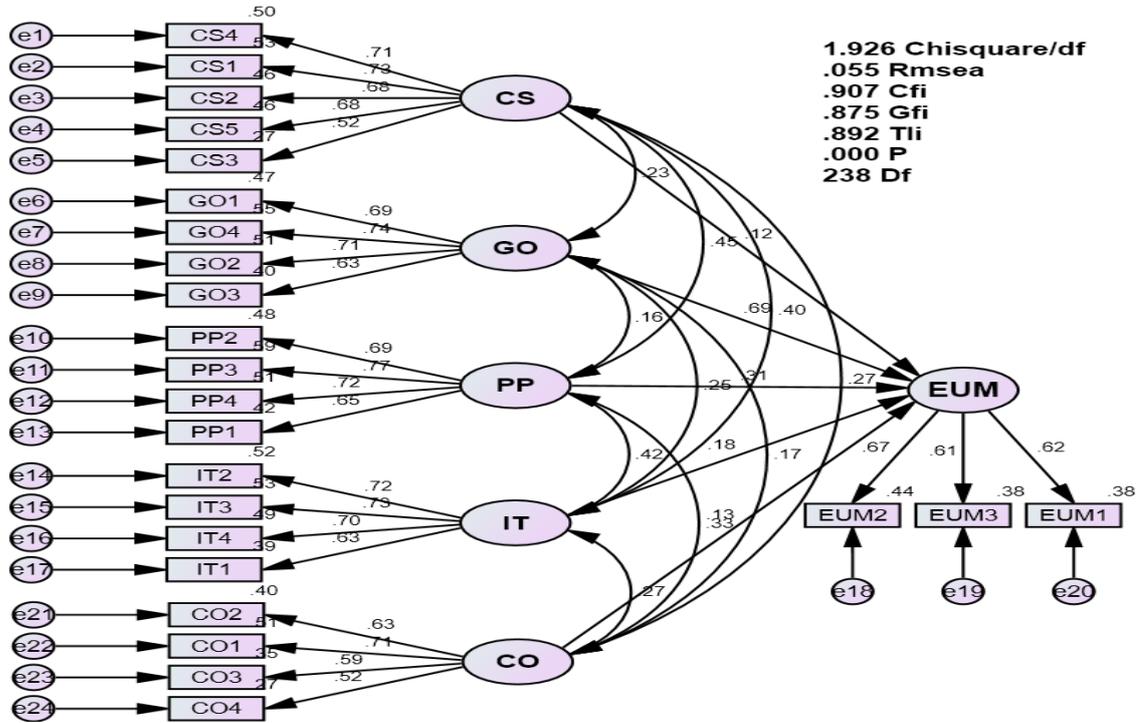
Fig 3. Structural equation modeling (SEM)

Table 6 . Regression Weights				
			Estimate	Standardized
EUM	<---	**CS**	.109	**.120**
EUM	<---	**GO**	.579	**.694**
EUM	<---	**PP**	.258	**.315**
EUM	<---	**IT**	.159	**.180**
EUM	<---	**CO**	.143	**.134**
CS4	<---	CS	1.000	.707
CS1	<---	CS	1.000	.730
CS2	<---	CS	.985	.681
CS5	<---	CS	.906	.681
CS3	<---	CS	.747	.520
GO1	<---	GO	1.000	.689
GO4	<---	GO	1.080	.742
GO2	<---	GO	1.056	.713
GO3	<---	GO	.869	.633
PP2	<---	PP	1.000	.694
PP3	<---	PP	1.041	.766
PP4	<---	PP	1.108	.716
PP1	<---	PP	.904	.651
IT2	<---	IT	1.000	.724
IT3	<---	IT	.967	.729

Table 7. Variances: (Default model)				
	Estimate	S.E.	C.R.	P
CS	.574	.089	6.457	***
GO	.675	.107	6.291	***
PP	.701	.111	6.319	***
IT	.603	.092	6.559	***
CO	.415	.081	5.118	***
e1	.574	.060	9.603	***
e2	.502	.055	9.204	***
e3	.644	.065	9.980	***
e4	.544	.054	9.976	***
e5	.863	.076	11.347	***
e6	.746	.075	10.000	***
e7	.644	.070	9.162	***
e8	.730	.076	9.662	***
e9	.762	.072	10.621	***
e10	.752	.077	9.813	***
e11	.535	.063	8.465	***
e12	.818	.086	9.471	***
e13	.781	.075	10.364	***
e14	.547	.061	9.002	***
e15	.496	.056	8.898	***

IT4	<---	IT	.991	.698	e16	.623	.066	9.468	***
IT1	<---	IT	.847	.627	e17	.668	.064	10.405	***
EUM2	<---	EUM	1.000	.667	e18	.588	.053	11.123	***
EUM3	<---	EUM	.995	.614	e19	.768	.067	11.424	***
EUM1	<---	EUM	.935	.618	e20	.666	.058	11.407	***
CO2	<---	CO	1.000	.630	e21	.632	.068	9.282	***
CO1	<---	CO	1.129	.714	e22	.508	.067	7.536	***
CO3	<---	CO	.961	.592	e23	.712	.072	9.865	***
CO4	<---	CO	.843	.519	e24	.801	.075	10.677	***

For the development of the model the Structural Equation Modeling (SEM) method was used, confirmatory factor analysis (CFA) was also used to examine whether all factors included in the analysis. The overall model fit was evaluated using four fit measures, SEM results (Fig 3) showed that the model is compatible with data research: Chisquare/df ($\chi2/df$) =1.926 <2 (Chin et al., 1995; Kettinger and Lee, 1995 [19]), Comparative Fit Index (CFI) = 0.907>0.8, GFI = 0.875>0.8 and Tucker & Lewwis Index (TLI) = 0.892 >0.8, these metrics are acceptable (Hair et al. 2010; Chin et al., 1995), Root Mean Square Approximation (RMSEA) = 0.055 < 0.08 (Taylor et al., 1993).

This study was conducted to explore the important factors that affect the urban management effectiveness. Five hypothesis used in the study to check the effect of independent variables on dependent variables. By using the appropriate statistical package it is found that Govemance, Participation and Partnership, Informatio, civil servant, socio- economic, political and cultural conditions are the factors that affect the effective urban management, all of which hypotheses are accepted. There are five supported hypotheses: correlation between GO and EUM (H1), between CO and EUM (H2), between IT and EUM (H3), between CS and EUM (H4) and between PP and EUM (H5).

IV. CONCLUSION

The result also reveal that Govemance is the most important factor that influence on the effective urban management. Current deterrence strategy has little influence on reducing violations because it is only used as a prevention strategy due to the lack of means of detection. When people believe they will be caught and punished, they are less likely to commit violitors. That is, an appropriate level of punishment coupled with a high likelihood of being caught is likely to deter some potential criminals. So that, recommendations for legislators, who can consider ertainty and severity of punishment, in crafting legislation to deter violators. And so, It is necessary that the Government issues legal and policy framework showing transparency, accountability and publicity. More ever, govement should strengthen supervision and improve the responsibility of law enforcement agencies. After that, strengthen Participation and partnership for urban management including goal and policy formulation, planning, programming and monitoring, as well as implementation, operations, sharing and advocacy. So, authors emphasizes the mobilisation of additional community resources and increased effectiveness in the use of available community. The major part of interviewed citizens think that IT application to support the urban management towards the smart city development goals has meaning of practical applications. The program implemented will contribute great value not only to the government and people in cities but also for all locals. Among the attributes considered as less relatively important there are stable socio-economic, political development and civil servant linked to the possibility of this management.

Conflict of interest
There is no conflict to disclose.

REFERENCES
[1]. Andrew Sayer 2008, Moral Economy and Political Economy, Economy and Society, Volume 37, Issue 1, https://doi.org/10.1080/19187033.2000.11675254
[2]. Atul Anand, D. Dsilva WITred Rufuss, V.Rajkumar and L.Suganthi 2017, Evaluation of Sustainability Indicators in Smart Cities for India Using MCDM Approach, Energy Procedia,Volume 141, Pages 211-215, https://doi.org/10.1016/j.egypro.2017.11.094
[3]. Ayyoob Sharifi 2019, A critical review of selected smart city assessment tools and indicator sets, Journal of Cleaner Production, Volume 233, Pp 1269-1283, https://doi.org/10.1016/j.jclepro.2019.06.172
[4]. Benedetto Francesco and Ballatore 2013, The reform of the Public Administration in Singapore: a model to follow, Munich Personal RePEc Archive, https://mpra.ub.uni-muenchen.de/52685/
[5]. Cassidy Johnson and Sophie Blackburn 2014, Advocacy for urban resilience: UNISDR's Making Cities Resilient Campaign, Environment & Urbanization, Volume: 26, Issue: 1, page: 29-52, https://doi.org/10.1177/0956247813518684

[6]. Chiara Garau and Valentina Maria Pavan 2018, Evaluating Urban Quality: Indicators and Assessment Tools for Smart Sustainable Cities, https://doi.org/10.3390/su10030575

[7]. Donagh Horgan, Branka Dimitrijević 2019, Frameworks for citizens participation in planning: From conversational to smart tools, Sustainable Cities and Society, Volume 48, July 2019, 101550, https://doi.org/10.1016/j.scs.2019.101550

[8]. Devender Maheshwari and Marijn Janssen 2014, Reconceptualizing measuring, benchmarking for improving interoperability in smart ecosystems: The effect of ubiquitous data and crowdsourcing, Government ITormation Quarterly, Pp S84-S92, https://doi.org/10.1016/j.giq.2014.01.009

[9]. Elham Akhondzadeh-Noughabi, Somayeh Alizadeh, Ali-Mohammad Ahmadvand and Behrouz Minaei-Bidgoli 2012, FTiS: A new model for effective urban management: A case study of urban systems in Iran, Cities, Volume 31, Pages 394-403, https://doi.org/10.1016/j.cities.2012.12.004;

[10]. Harrison, Teresa M., Guerrero, Santiago, Burke, G. Brian, Cook, Meghan, Cresswell, Anthony, Helbig, Natalie ,Hrdinova, Jana , Pardo and Theresa 2012, Open government and e-government: Democratic challenges from a public value perspective, ITormation Polity, vol. 17, no. 2, pp. 83-97, https://doi.org/10.3233/IP-2012-0269

[11]. Hafedh Chourabi, Taewoo Nam, Shawn Walker, Taewoo Nam, Sehl Mellouli, Karine Nahon, Theresa A. Pardo and Hans Jochen Scholl 2012, Understanding Smart Cities: An Integrative Framework, 2012 45th Hawaii International Conference on System Sciences, https://doi.org/10.1109/HICSS.2012.615

[12]. Hair J. J. F., Anderson R. E., Tatham R. L., and Black W. C. 2010, Multivariate Data Analysis, (7th ed.): Peason Prentice Hall

[13]. Hair Jr JF, Hult GTM, Ringle C and Sarstedt M. 2016, A primer on partial least squares structural equation modeling (PLSSEM): Sage Publications. 95-204.

[14]. J. Alnsour, The effectiveness of urban management in Jordanian municipalities , WIT Transactions on Ecology and The Environment, Vol 191, www.witpress.com, ISSN 1743-3541 (on-line), https://doi.org/10.2495/SC140231

[15]. Jos Mooij 2003, Smart Governance? Politics in the Policy Process in Andhra Pradesh, India, ISBN 0 85003-690-9, https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2464.pdf

[16]. Jörg Henseler, Geoffrey Hubona and Pauline Ash Ray 2015, Using PLS path modeling in new technology research: updated guidelines, Industrial Management & Data Systems Vol. 116 No. 1, 2016 pp. 2-20, Emerald Group Publishing Limited 0263-5577, https://doi.org/10.1108/IMDS-09-2015-0382

[17]. Job Kipkemboi Kiptoo and Fred Mugambi Mwirigi 2014, Factors That Influence Effective Strategic Planning Process In Organizations, OSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 16, Issue 6. Ver. II, PP 188-195

[18]. L.Nare, J.O.Odiyo, J.Francis, N.Potgieter 2011, Framework for effective community participation in water quality management in Luvuvhu Catchment of South Africa, Physics and Chemistry of the Earth, 36 (2011) 1063–1070, https://doi.org/10.1016/j.pce.2011.08.006

[19]. Leslie Mabona, Wan-Yu Shihb, Kayoko Kondoc, Hiroyuki Kanekiyoc and Yuriko Hayabuchid 2019, What is the role of epistemic communities in shaping local environmental policy? Managing environmental change through planning and greenspace in Fukuoka City, Japan, Geoforum 104 (2019) 158–169, https://doi.org/10.1016/j.geoforum.2019.04.024

[20]. Lei Zhao 2013, The Research on the Performance Evaluation of Civil Servant Based on Competency Model, International Conference on Artificial Intelligence and Software Engineering (ICAISE 2013), https://dx.doi.org/10.2991/icaise.2013.40

[21]. Luis F.Luna-Reyes, J. RamonGil-Garcia and Cinthia BetinyCruz 2007, Collaborative digital government in Mexico: Some lessons from federal Web-based interorganizational ITormation integration initiatives, Government ITormation Quarterly,Volume 24, Issue 4, Pages 808-826, https://doi.org/10.1016/j.giq.2007.04.003

[22]. Mandana Saniei, The Role of Information Technology in Urban Management Development, International Journal of Advanced Biological and Biomedical Research, - eISSN: 2322-4827, Int. J. Adv. Biol. Biom. Res, 2 (10), 2691-2695.

[23]. Mashavira Nhamo and Nyanga Takupiwa, Chifamba Ephraim and Zirima Herbert 2013, Factors mitigating effective perfomance management in parastatals operating in masvingo urban district, Zimbabwe, International Journal of Politics and Good Governance Volume 4, No. 4.3 Quarter III 2013 ISSN: 0976 – 1195.

[24]. Nancy Odendaal 2003, Information and communication technology and local governance: understanding the difference between cities in developed and emerging economies, Computers, Environment and Urban Systems, Volume 27, Issue 6, pp 585-607, https://doi.org/10.1016/S0198-9715(03)00016-4G

[25]. Olga Gil, María E. Cortés-Cediel and Iván Cantador 2019, Citizen Participation and the Rise of Digital Media Platforms in Smart Governance and Smart Cities, International Journal of E-Planning Research (IJEPR)8(1), ISSN: 2160-9918, EISSN: 2160-9926, EISBN13: 9781522567882, https://doi.org/10.4018/IJEPR.2019010102

[26]. Patsy Healey 2006, Transforming governance: Challenges of institutional adaptation and a new politics of space1, European Planning Studies ,Volume 14, 2006 - Issue 3: New urban governance, https://doi.org/10.1080/09654310500420792

[27]. Rudolf Giffinger, Gudrun Haindlmaier and Hans Kramar 2010, The role of rankings in growing city competition, Urban Research & Practice, Volume 3, 2010 - Issue 3: Learning Cities in a Knowledge-Based Society, https://doi.org/10.1080/17535069.2010.524420

[28]. RyoSakurai, HiromiKobori, MasakoNakamura and TakahiroKikuchi 2015, Factors influencing public participation in conservation activities in urban areas: A case study in Yokohama, Japan, Biological Conservation, Volume 184, April 2015, Pages 424-430, https://doi.org/10.1016/j.biocon.2015.02.012

[29]. Sariya Srichuae, Vilas Nitivattananon, Ranjith Perera, 2015, Aging society in Bangkok and the factors affecting mobility of elderly in urban public spaces and transportation facilities, IATSS Research, Volume 40, Issue 1, Pages 26-34, https://doi.org/10.1016/j.iatssr.2015.12.004

[30]. Tao Liua, Daquan Huang, XinTan and Fanhao Kong 2020, Planning consistency and implementation in urban izing China:Comparing urban and land use plans in suburban Beijing, Land Use Policy, Volume 94, 104498, https://doi.org/10.1016/j.landusepol.2020.104498

[31]. Taozhi Zhuang, Queena K.Qian, Henk J.Visscher, Marja G.Elsinga and Wendong Wu 2019, The role of stakeholders and their participation network in decision-making of urban renewal in China: The case of Chongqing, Cities, Volume 92, Pages 47-58, https://doi.org/10.1016/j.cities.2019.03.014

[32]. Taylor Steven., Sharland A., Cronin J. and Bullard W., 1993. Recreational Service Quality in the International Setting, International Journal of Service Industry Management, 4: 68-86., https://doi.org/10.1108/09564239310044316

[33]. Tzeng Yih Lam and Douglas A. Maguire 2012, Structural Equation Modeling: Theory and Applications in Forest Management, International Journal of Forestry Research Volume 2012, Article ID 263953, https://doi.org/10.1155/2012/263953

[34]. Victoria Fernandez-Anez, José Miguel Fernández-Güell and RudolfGiffinger 2017, Smart City implementation and discourses: An integrated conceptual model. The case of Vienna, Cities,Volume 78, Pages 4-16, https://doi.org/10.1016/j.cities.2017.12.004

[35]. Wasana Suridechakul 2015, Factors Affecting Sustainable Community Development: A Case Study of Dusit District Community. ISBN: 978 - 1 – 61804 – 291 - 0, http://www.inase.org/library/2015/barcelona/bypaper/EEED/EEED-20.pdf

[36]. Wellington Jonga and Kilian Munzwa 2009, Critical factors Influencing the management of Zimbabwean cities and towns: Reflections on issues of urban governance, Local Governance and Development Journal Vol. I, No.3, https://www.researchgate.net/publication/232273737

[37]. Wynne . W. Chin and Peter A. Todd 1995, On the Use, Usefulness, and Ease of Use of Structural Equation Modeling in MIS Research: A Note of Caution. MIS Quarterly. 19 (2): 237-246, https://doi.org/10.2307/249690