

The Quality of Life among Selangorians: A Domain Evaluation

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Selangor is leading in the economy and contributes towards 23% of the Gross Domestic Product (GDP) of Malaysia. Does its social status equate to its economic status? This paper examined the element of Quality of Life (QoL), underpinning the twelve domains provided by the state across all of its town municipals. A total of 1500 questionnaires were distributed to Selangorians as the targeted respondents by using random and non-proportionate stratified samplings. SPSS and SmartPLS were utilised for descriptive and statistical analysis purposes. The findings revealed the domains of building (t-value=2.515), digital infrastructures (t-value=1.986), disaster management (t-value=2.127), food and agriculture (t-value= 2.917), safety and security (t-value=2.217), and transport and mobility (t-value=2.155) were significant towards QoL. In contrast, education (t-values=0.81), energy and utility (t-values=0.074), governance (t-values=1.833), healthcare (t-values=0.816), waste management (t-values=1.708), and water management (t-values=0.88) were found to be not significant towards the construct. These outcomes yield a tool for better governance.

Key words: *Quality of Life (QoL), domain, building, digital infrastructures, disaster management, food and agriculture, safety and security, transport and mobility, smart city.*

Introduction

Selangor as one of the wealthiest states in Malaysia has documented robust physical development with its urban areas such as Shah Alam, Subang Jaya, Petaling Jaya, dan Bangi, which are populated by Selangorians and non-Selangorians alike. Their bid for better job opportunities and improved quality of life (QoL) is further emphasised by the Selangor Blueprint, which asserts the state's commitment towards providing its citizens with a better place to live. To achieve a good QoL in the community, each resident deserves the necessary infrastructure and other facilities offered via social services for the sake of their well-being,

health, education, employment, security, and in the making of a conducive environment (Ministry of Unity Community Development, 2003).

In Malaysia, Selangor is ranked the highest economically by contributing 23% of the national GDP, followed by Wilayah Persekutuan Kuala Lumpur (WPKL) and Sarawak (Statistics Department, 2016). Contrarily, its social indicators have yielded the lowest rank among the top four states, which is indicative of how its social development is not in tandem with the rapidly expanding economy and comprehensive physical growth (Hashim & Shuib, 2016). Providing a good QoL for its community means that the state needs to enhance other social sectors besides its economic ones. This underlines the importance of identifying social development and the QoL in this golden state of Malaysia.

Therefore, in this study, we evaluated the dimensions of QoL among Selangorians in order to capture the important shaping domains. Additionally, this study is in line with the state's former Chief Minister, Dato Seri Mohamed Azmin Ali's foresightedness and aspirational zeal. He states: *"The state of Selangor is now a developed state. We need to make a quantum leap towards becoming a smart state, which would more fully exemplify a developed state where information technology is harnessed optimally to enhance the quality of life of the society"* (Chief Minister, 2015).

QoL is one important dimension when planning to create a smart city that is developed for a sustainable future (Moraya & Pabalkar, 2020). Most literature works have defined QoL as being connected with daily living, which is amplified by nourishing food and clean air and water, accessibility to unlimited open spaces and bodies of water, conservation of wildlife and natural resources, and security against criminal elements (El Din, 2013). In contrast, Osman, Rosli, and Rabe (2019) have concisely documented it as an assessment of economic well-being. Though Madakam, Ramaswamy, and Date (2019) emphasise QoL in the city, it is imperative to have digital infrastructure, and a major number of Internet of Things (IoT) advances should be orchestrated. A further conceptualisation of QoL is inclusive of psychological well-being, which consists of the perception of health, sufficient nutritious food, shelter, and adaptation to the environment. Accordingly, this includes the perception of the environment that any individual and group possess not only as a resource but also as a means of aesthetic satisfaction (Bakar, Osman, Bachok, Zen, & Abdullah, 2017).

Research Background

To measure QoL, its indicators and constructs consist of variables dependent upon the operationalisation of the concept. For example, nine constructs are utilised in European countries and include the elements of social and economic well-being, namely material living conditions, financial risks the population is vulnerable against, health, educational level, work

conditions, public life involvement, contact with other people, economic security, and physical security (Albouy, Godefroy, & Lollivier, 2012).

The state government of Selangor has outlined 12 dimensions in moving towards a smart state, specifically: governance, digital infrastructure, transport and mobility, waste management, healthcare, education, water management, energy and utility, food and agriculture, safety and security, building, and disaster management. These domains have been identified based on close engagement with relevant stakeholders and citizens (Selangor Blueprint, 2016). However, it is necessary to re-examine the reliability and validity of these indicators and components in identifying the critical dimensions of QoL in Selangor.

Hence, this work aims to investigate the factors influencing QoL and will recommend strategies for a better social environment in Selangor. Indirectly, the study will contribute to the body of knowledge concerning the management of the Smart City of Selangor.

Methodology

This study aimed to investigate the twelve (12) components of QoL. A total of 1500 questionnaires were distributed to the targeted respondents residing in Selangor, who were sampled via random and non-proportionate stratified samplings, within a one-month time frame to control for extraneous factors to influence the respondent responses. However, only 1306 of the returned surveys were deemed valid for further analysis as the remaining 194 sets were identified as outliers. Therefore, the accepted questionnaires from the data collection process were further analysed to identify the causal relationships between all twelve (12) domains and the QoL in Selangor, respectively, by using Partial Least Square (PLS). This was subjected to the measurement and structural model of this study. PLS-SEM method is based on iterative techniques approach that maximises the explained variances of endogenous constructs. It also used a multiple regression technique (Hair, Anderson, Tatham, & Black, 2010). This characteristic makes the method of PLS-SEM valuable for exploratory research. The common approach is to present the results in two phases. The first part focuses on data reliability and validity while the second part focuses more on the structural model assessment (Hair, Hult & Ringle, 2013).

The measurement model in PLS is assessed in terms consistency and validity which includes item loading, composite reliability (CR) and average variance extracted (AVE). Item loadings which are greater than 0.70 are considered as sufficient enough for the variable to be in its construct while a value of composite reliability which is greater than 0.70 is considered to be acceptable in terms of its reliability. Average variance extracted (AVE) determines the amount of variance captured by the construct from each of the variables due to measurement errors. As suggested by Fornell and Lacker, (1981) a minimum of 50% of variance should be captured by

the construct. This implies that the values of AVE should be more than 0.50. The structural model in PLS is examined by evaluating the path coefficients value at 5% level of significance to see the nature of the relationship between the constructs. In order to validate the model, diagnostic checking was conducted on the model by observing the value of R^2 which determines the strength of the model.

Additionally, descriptive analysis was conducted on the demographic characteristics of the respondents.

Results

Table I shows that 1306 Selangorians were selected randomly from 12 local authorities to participate in this study. Accordingly, a total of 646 female respondents participated in this study, while the remaining 660 respondents were male. Race-wise, the Malays were highly present in this study with a total of 747 respondents, followed by Indian participants (277), Chinese participants (240), and participants of other races (42). Further information revealed that the majority of them, namely 780 respondents, had a monthly income level in the range between RM1001 to RM5000, which was followed by 265 respondents from the range of RM5001 to RM10000. 254 respondents earned less than RM1000. Only 56 respondents were of the group earning more than RM10,000 per month. The results thus showed that most of the respondents documented monthly income between RM1,000 to RM5,000.

Table 1: Demographic Factors

Demographic Factors		%	N
Gender	Male	660	50.4
	Female	646	49.5
Race	Malay	747	57.2
	Indian	277	21.2
	Chinese	240	18.4
	Others	42	3.2
Income	less than 1,000	254	15.7
	1,001-5,000	780	59.7
	5,001-10,000	265	20.3
	Above 10,000	56	4.3

First-Order Reflective Measurement Model

Per the findings obtained, Table II indicates that all of the indicator loadings for the constructs are greater than 0.5. The outcomes also revealed that all constructs were not highly correlated with each other, thus implying that they were unique and unrelated to one another. This

confirmed that there were no issues in discriminant validity as the items loaded with higher strength on their own construct. Moreover, the average variance extracted (AVE) was shared between each domain and its measure was greater compared to the variance shared between two different constructs.

Table 2: Factor Loadings

Quality of Life			
Indicators	Factor Loading	Indicators	Factor Loading
<i>1. Governance</i>		<i>7. Energy & Utility</i>	
B1A	0.810	B8A	0.788
B1B	0.926	B8B	0.910
B1C	0.604	B8C	0.881
B1D	0.813	<i>8. Food & Agriculture</i>	
B1E	0.831	B9A	0.828
<i>2. Digital Infrastructures</i>		B9B	0.821
B2A	0.921	B9C	0.935
B2B	0.947	B9D	0.919
B2C	0.911	<i>9. Safety & Security</i>	
<i>3. Transport & Utility</i>		B10A	0.927
B3A	0.803	B10B	0.972
B3B	0.909	B10C	0.942
B3C	0.891	<i>10. Buildings</i>	
B3D	0.835	B11A	0.984
B3E	0.851	B11B	0.952
B3F	0.662	B11C	0.926
<i>4. Waste Management</i>		B11D	0.952
B4A	0.953	<i>11. Disaster Management</i>	
B4B	0.955	B12A	0.968
B4C	0.979	B12B	0.985
B4D	0.953	B12C	0.96
<i>5. Healthcare</i>		<i>12. Education</i>	
B5A	0.951	B6A	0.556
B5B	0.775	B6B	0.748
B5C	0.953	B6C	0.935
B5D	0.951	B6D	0.809
B5E	0.889	B6E	0.652
<i>6. Water Management</i>			
B7A	0.834		
B7B	0.807		
B7C	0.754		
B7D	0.753		

Furthermore, the composite reliability (CR) and AVE values are found to be greater than 0.5 as indicated in Table III.

Table 3: Convergent Validity

Constructs	CR	AVE
Buildings	0.976	0.909
Digital Infrastructure	0.948	0.858
Disaster Management	0.980	0.943
Education	0.862	0.564
Energy & Utility	0.896	0.741
Food & Agriculture	0.930	0.770
Governance	0.900	0.646
Healthcare	0.958	0.822
Safety & Security	0.963	0.897
Transport & Mobility	0.929	0.688
Waste Management	0.979	0.922
Water Management	0.865	0.616

Second-order Formative Measurement Model

As depicted in Figure 1 and shown in Table IV, twelve (12) domains were included to assess the multicollinearity based on the values of variance inflation factor (VIF) and tolerance. Table IV reveals the results and thus confirms that there are no issues on the multicollinearity of the components, as the VIF values are not greater than 10. Then, it was further revealed that the VIF values are as follows: building (VIF=1.934), digital infrastructure (VIF=1.994), disaster management (VIF=1.915), education (VIF=2.009), energy and utility (VIF=2.204), food and agriculture (VIF=2.104), governance (VIF=2.068), healthcare (VIF=2.588), safety and security (VIF=2.173), transport and mobility (VIF=2.104), waste management (VIF=1.556), and water management (VIF=2.133).

Figure 1. Measurement model

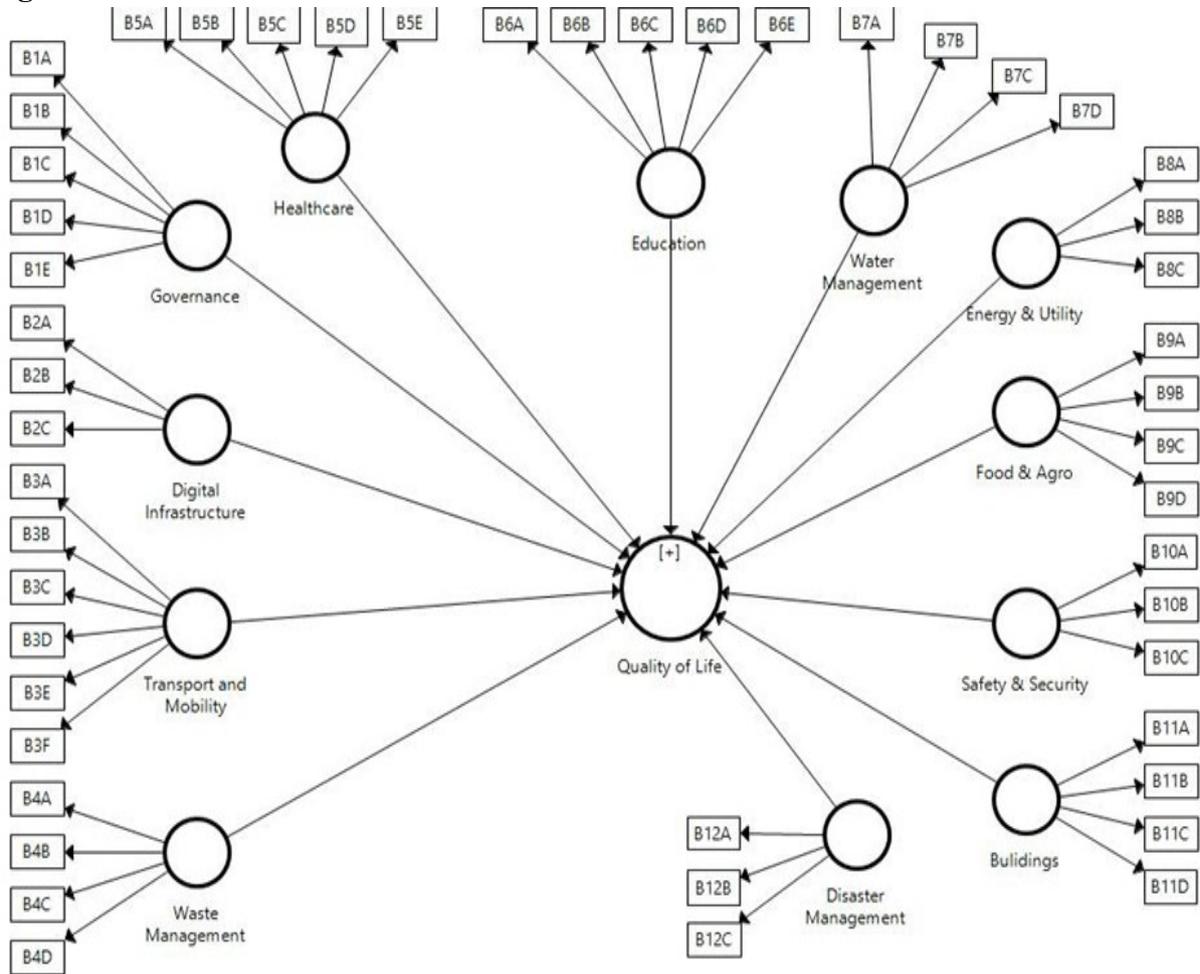


Table 4: Multicollinearity of Quality of Life

Relationships	Tolerance	VIF
Building -> Quality of Life	.517	1.934
Digital Infrastructure -> Quality of Life	.501	1.994
Disaster Management -> Quality of Life	.522	1.915
Education -> Quality of Life	.498	2.009
Energy & Utility -> Quality of Life	.454	2.204
Food & Agriculture-> Quality of Life	.475	2.104
Governance -> Quality of Life	.484	2.068
Healthcare -> Quality of Life	.386	2.588
Safety & Security -> Quality of Life	.460	2.173
Transport & Mobility -> Quality of Life	.475	2.104
Waste Management -> Quality of Life	.643	1.556
Water Management -> Quality of Life	.469	2.133

Moreover, the significance of weight based on the t -values of the twelve (12) domains for QoL revealed that the six constructs of building (t -value=2.515), digital infrastructures (t -value=1.986), disaster management (t -value=2.127), food and agriculture (t -value=2.917), safety and security (t -value=2.217), and transport and mobility (t -value=2.155) were significant towards the latter. In contrast, the remaining constructs were not significant towards QoL in Selangor, namely: education (t -values=0.81), energy and utility (t -values=0.074), governance (t -values=1.833), healthcare (t -values=0.816), waste management (t -values=1.708), and water management (t -values=0.88).

Table 5: Significance Values for Quality of Life

Relationship	Beta value	SE	T-Value	P-Value
Building -> Quality of Life	0.389	0.154	2.515	0.012
Digital Infrastructure -> Quality of Life	0.104	0.052	1.986	0.047
Disaster Management -> Quality of Life	0.205	0.096	2.127	0.034
Education -> Quality of Life	0.071	0.087	0.810	0.418
Energy & Utility -> Quality of Life	-0.004	0.058	0.074	0.941
Food & Agriculture-> Quality of Life	0.216	0.074	2.917	0.004
Governance -> Quality of Life	0.047	0.026	1.833	0.067
Healthcare -> Quality of Life	0.085	0.104	0.816	0.415
Safety & Security -> Quality of Life	0.237	0.107	2.217	0.027
Transport & Mobility -> Quality of Life	0.189	0.088	2.155	0.031
Waste Management -> Quality of Life	0.118	0.069	1.708	0.088
Water Management -> Quality of Life	0.057	0.065	0.880	0.379

Discussion

This study highlighted six (6) domains that influenced QoL, which was consistent with a previous study by Bakar *et al.* (2017). First, the domain of building has been shown to be significant; thus, it is strongly recommended that more decent and affordable buildings are built by the state government. Shelter is indeed a basic need for the people, and for this reason, building plays an important role in QoL. The *Rumah Selangorku* programme could have contributed this domain, hence, it should be further expanded to ensure that all Selangorians feel more secure and satisfied while residing in the state.

Second, the results reveal implications of the residents' perception towards digital infrastructure as a component that is of importance in order to determine their QoL. In today's world, a lot of transactions have gone digital, leading to the vast and rapid increase in the need for digital infrastructure that is reliable and secure. Importantly, one has to agree that national transformation can be realised in various ways. One way is investing in this element. In the case of the state of Selangor, such an approach is recommended due to its immensely beneficial

socio-economic outcomes. According to the World Bank, an increment of 10% in terms of internet access alone can be linked to 1.38% of GDP improvement in developing nations. Therefore, the state government could position itself towards a feasible commercial climate that also allows the private sector to flourish, as well as look into spurring higher demands for digital solutions.

Third, the result showed that the disaster management domain contributed significantly towards QoL. For this reason, it is suggested for related companies and the state government to work hand-in-hand towards an improved construct of disaster management, simply by putting the people of Selangor as the prioritised party. The priority can be expressed by aiding the people towards being well-prepared individually for any casualties, not engaging in the “last-minute” mindset, and taking the steps necessary in order to have the people ready in response to any disaster or catastrophe (e.g. accident, fire, or flash flood). Located in the South East Asia region, Selangor is prone to experience natural disasters such as flash flooding due to heavy rain fall. Therefore, the state needs to increase the number of awareness programmes and preventive actions specifically to educate the Selangorians about preparing for a disaster. Accordingly, these suggestions would improve the state disaster management and thus enhance the QoL of its residents. Furthermore, Selangorians have perceived the food and agriculture domain as essential and the most significant domain in determining one’s QoL. Most countries globally are facing various forms of malnutrition. Following this, food production is the foremost driver of climate change and environmental damage and requires a global solution in order to ensure sustainable and nutritious dietary availability for the ever-expanding population. Thus, Selangor state government should encourage companies associated with the food and agriculture sector to improve the nutritional food choices available and reduce the environmental footprint of the food system. The state needs to ensure that the companies are taking active measures about eating healthy options by requiring improved diversity, nutrition content, and sustainability, namely by looking into the vast potential of investment in facilitating innovations and interventional growth for an improved nutritional landscape in a highly cost-effectual manner. The state can also help increase the people’s awareness and knowledge about healthy and nutritious food by organising impactful campaigns targeting the marginalised Selangorians.

Fourth, safety and security is a domain of concern for everyone in Selangor, especially in enhancing their QoL. This result come to no surprise as safety and security is what a citizen aims for whenever they look for a place to stay. Therefore, it is very important that the state government invests in actions and plans effective strategies to reduce crimes. Some immediate actions to take include installing improved lighting and more closed-circuit TVs (CCTV) at strategic locations (e.g. public places, malls, and highways), and allowing for more police officers to be posted in the neighbourhoods for patrolling duties. Most importantly, awareness campaigns on being safe and secure should be conducted regularly. Similarly, the domain of

transport and mobility is also perceived as crucial in the state, calling for the roads to be not too congested as this may create unnecessary stress for the residents. The movement of people and goods is fundamental to human needs, as well as being a key enabler towards social and economic prosperity and well-being. Accordingly, mobility can be wonderful but sometimes challenging to the population, thereby resulting in the proposal for a smarter and improved network of buses, light-rail transits (LRTs), and monorail services, which are currently offered and accessible in Selangor.

Meanwhile, the six domains of education, energy and utility, governance, healthcare, waste management, and water management have been viewed by Selangorians as insignificant due to the state government's excellent job thus far in providing great facilities. Accordingly, they are sufficiently happy and satisfied with the education, healthcare, waste management, and water management components available in the state. Synchronously, the positive contribution of education towards shaping the emotions of Selangorians has been documented in an earlier study (Yulia, Husin, Ngah, & Ghazali, 2020), indicating the importance of education on wellbeing more than QoL, in general.

Overall, the findings obtained in this study are indicative of the need for further assessment using the formative second order of the measurement model (MacKenzie, Podsakoff, & Podsakoff, 2011). The interpretation of the information obtained may guide researchers to further explain the results of the study and thus shed light on the critical dimensions towards ensuring happier Selangorians with an enhanced QoL. Additionally, the suggestions will serve as a crucial tool utilisable by state government administrators towards improving the QoL of the people, and thus materialising the Chief Minister's dream of making Selangor a Smart City by 2025.

Conclusion

This study has found new and consistent findings. Investigating the factors significant to QoL as well as estimating and interpreting a formative second order of its twelve (12) domains using a sample size of 1306 residents of Selangor, this study revealed that only six (6) domains were significant towards QoL. The significant domains were building, digital infrastructures, disaster management, safety and security, and transport and mobility. Meanwhile, the remaining six (6) domains of education, energy and utility, governance, healthcare, waste management, and water management were found to be not significant towards the construct. This study was conducted with a limitation, which is that no in-depth opinions or perceptions were gathered from the citizens about the infrastructure provided by the states in its way toward Smart City status. Therefore, the non-significant findings of this study warrant future research to qualitatively explore the perspectives of Selangorians in depth.



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