

The Factor Affecting Malaysian Citizens Satisfaction with Open Government Data

Mohammed Shihab Ahmed, Massudi Bin Mahmuddin and Nor Idayu Binti Mahat
Universiti Utara Malaysia, Sintok, 06010 Kedah, Malaysia

Abstract: Open data can be traced to various initiatives like freedom of information, transparency and participation, data exchange, reuse of public sector information, open access, open source and open government. This study suggests a different approach in assessing the variables of citizens satisfaction in open government data in Malaysia. Based on a thoroughly researched secondary data, this conceptual paper suggests a framework integrating the so far incoherent frameworks as proposed by previous researchers. Emanating from this eclectic and chronological literature review, the study will also propose further missing links that need to be included in the proposed integrated framework. Based on this holistic framework in a future study, the researchers will explain a sustainability index of citizens satisfaction in open data which will be tested empirically in the study. In fact from the proposed integrated framework in total five vital factors/aspects of open government data issues are likely to have an impact on Malaysian citizens satisfaction. User behavioural intention variables will play an intervening or mediating role in the framework.

Key words: Satisfaction, citizens, Malaysia, open government data, Expectation Confirmation Theory (ECT), behavioural intention

INTRODUCTION

Data for the long time has been viewed as popular and useful for providing solution and achieving goals and objectives of companies, industries and individual. The use of data either the historic or forecast type has been described as useful for improving competitiveness, adding meaningful values and actionable information to the users. Moreover, previous studies have emphasised that data can be classified into big and small data (Etelaaho, 2014). Big data is referred to as the collection of large complex datasets either structured or non-structured that cannot be processed with traditional application (Etelaaho, 2014). On the other hands, small data is categorised as the collection of dataset that can be handled by traditional information systems (Etelaaho, 2014). Both big and small data can be featured in open and closed status and can be seen as secondary classification of data. Researchers have presented MyData as the data type that are personal and can be processed by electronic form while openly available data is the data source that are lined to the public network so as to augment the security issues. Meanwhile, studies have shown that availability of data to the public ensures its exploration which assist in planning and managing of the communities in terms of social and economic developments. This shows that data is bound to be open to the users so as to achieve its objective of being

created. Hence, openness of data encourages businesses and entrepreneurs towards creation of economic, social values and problem solving. Open data is machine-readable information that is classical to government data and always made available in a unified standard to the public (Zeleti *et al.*, 2014). However, most of the data are not always open to the public with little restriction in some sources of open data other than government data. This implies that open government data play important roles in making data available to the companies, industries and individual's use. Furthermore, origin of open data can be traced to various initiatives like freedom of information, transparency and participation, data exchange, reuse of public sector information, open access, open source and open government. In addition, countries around the world have engaged in the open government data initiatives due to its transparency and democratic features. This has been launch in the countries like United State, Australia, New Zealand, the Netherlands, Sweden, Spain, Austria, Denmark and Malaysia is not left out. In other words, both developed and the developing countries have purposely venturing into open government data as a result of the economic growth support it provides to the nation through the stimulation of data-based product and services, together with public services delivery (Sheridan and Tennison, 2010). This shows that open government data benefits both the government and the citizens in the countries.

Problem statement: Moreover, several studies have been conducted in the domain of open data and open government data vis-a-vis citizen's perspective (Sheridan and Tennison, 2010). Zuiderwijk and Janssen (2014) investigated the negative impact of open government data to the citizenry while Gonzalez *et al.* (2014) explored the evolution of open government data. On the other hands, the study of Eberius *et al.* (2012) investigated effort for increasing the citizen's utilisation of open government data thus bringing about the trend of movement of open government data among the populace. However, there have not been studies on the citizen's satisfaction on the available open government data so as to measure the continuity of data whereas, satisfaction has been stressed as the substitute of efficiency and success of a system (Sheridan and Tennison, 2010). This could be traced to the lack of determining the requirement for measuring the citizen's satisfaction of open government data. Therefore, there is need conduct study on the satisfaction of open government data with respect to the citizens. Comparing the government services and open data in Asian countries, Hong Kong is ranked 9th (86.4%), Singapore ranked 10th (85.6%), Taiwan ranked 11th (84.5%) while Malaysia ranked 24th (49.1) (Lean *et al.*, 2009). This reveals that Malaysia is still low in the use of government open data and services. Therefore, there is need to conduct more study on the reasons for low patronage of citizens and factors that could influence more patronage of open government data by the citizens in Malaysia.

The aim of research: The contribution of this study to the providers of open data is that it will establish the importance of providing more infrastructures that would help the acceptability of open government data to the citizens which are users of open data. The input from the determining the factors for measuring the citizen's satisfaction of open government data in Malaysia will serve as positive insight for the providers of open data. This is necessary as some of the companies and government agencies that are controlling the open data for the citizen's use would derive some revenues from the contribution of this study.

MATERIALS AND METHODS

The study will focus the measuring the satisfaction of citizens of Malaysia on the open government data through the mixed method approach. The qualitative approach will focus on analysing on the content analysis of the available open government data in Malaysia. The analysis of the content analysis would assist in modelling

the model for measuring the satisfaction of open government data among the citizens in Malaysia. Besides that the study will employ the use of Structural Equation Modeling (SEM) due to its ability to determine the fitness of model under study faster than other analytical tools and hence, the study will use the Partial Least Square technique of SEM (PLS-SEM) which is quantitative research approach while analysing the collected data from the staffs of Northern Corridor Economic Region (NCIA). The PLS-SEM will help the researcher to maximise the variance explained of dependent variable which is the citizen's satisfaction of open government data in Malaysia.

RESULTS AND DISCUSSION

Many theories that relate to the ICT usage have been postulated such as Technology Acceptable Model (TAM), Diffusion of Innovation (DOI) model, Theory of Planned Behaviour (TPB) and other models are mainly focus on the first-time use. However, researchers have argued that the success of IS and the technology rely on their long-term use which is a result of satisfaction derived from the technology (Bhattacharjee, 2001). This implies that accepting only first-time use of technology cannot be used as measure for determining its success thus calling for the ECT Model which is specifically describes how the satisfaction of technology could be determine in the usage of technology or ICT like open government data. Therefore, the ECT will be taken as based model in this study towards determining the measurement of citizen's satisfaction of open government data in Malaysia.

Researchers have previously argued that process of achieving satisfaction from the use of technology could be deeply understood by understanding Expectation Confirmation Theory (ECT). Bhattacharjee (2001) emphasised that consumer's intention to continuously use a technology or services is synonymous to user's behaviour towards satisfaction by considering the ECT. Meanwhile, the consumers or users possess initial expectation prior to assessment of a service. Considering the discussions in the previous study, the researcher came-up with a research model for the measuring the citizen's satisfaction of the open government data in Malaysia hence, Fig. 1 shows the research model for this study.

Researchers have stressed that the perceived performance with respect to original expectation determines the extent to which the expectation is confirmed (Bhattacharjee, 2001). This implies that users of technological services would have believed that using the

Table 1: Research hypotheses between independent and dependent (H_{1-5})

Codes	Description of hypotheses	Independent variables	Dependent variables
H ₁	EXP is significantly	EXP	CNF
H ₂	PP is significantly related to CNF	PP	CNF
H ₃	CNF is significantly related to UBI	CNF	UBI
H ₄	EXP is significantly related to UBI	EXP	UBI
H ₅	UBI is significantly related to CSOGD	UBI	CSOGD

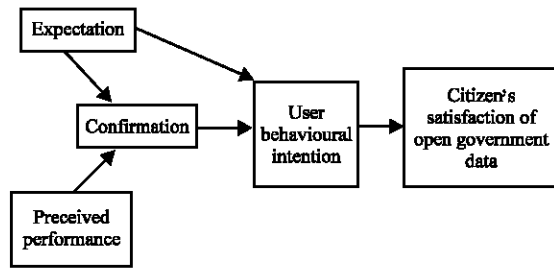


Fig. 1: Research model

confirmed technology will strengthen their behavioural intention to revisit a technology. Besides, satisfaction of the users of technology has been stressed to be determined by the behavioural intention of built by the users after being confirming the functionality of technology. Thus achieving the satisfaction of the open government data by the citizens of Malaysia can be determined by the behavioural intention of the users. Furthermore, behavioural intention has been argued to determine the satisfaction of derive from the product or service. Meanwhile, satisfaction is viewed as the key to building and retaining a loyal base of long-term consumers. Therefore, investing on customer's satisfaction of the citizens towards using of open government data would assist in planning of the both people and community. Moreover, satisfaction in the context of job performance is viewed as pleasurable or positive emotional states that result from the appraisal of one's activities (Bhattacharjee, 2001). This implies that satisfaction of users of technological services is resulted from the emotion surrounding the confirmation of expectation and perceived performance by the users. Previous studies have shown that low expectation and higher performance can serve as lead to greater confirmation which ignite the behavioural intention of the users, causing effect on the satisfaction derived from the technological services (Table 1).

Besides that this study hypothesised that the relationships between the independent variables (expectation, perceived performance and confirmation) and the dependent variable (citizen's satisfaction of government data) is mediated by user behavioural intention thus represented by hypotheses H_6 - H_7 in

Table 2: Research hypotheses between independent and dependent variables (H_{6-7})

Codes	Description of hypotheses	Independent variables	Dependent variables
H ₆	UBI mediates the relationship between EXP and CSOGD	EXP	CSOGD
H ₇	UBI mediates the relationship between CNF and CSOGD	CNF	CSOGD

Table 2. The null hypothesis H_0 is returned when there is no significant relationship between the hypotheses; otherwise, the hypotheses remain valid.

CONCLUSION

Provision of access to open government data and services is considered as crucial for economic and social development and a higher quality life. However, many of the users of open government data who are citizens do not get motivation for continuously using it due to lack of satisfaction on the available open data. Hence, this study will serve as recommendation for the policy maker such as regulatory body on communication to meet the satisfaction of the citizens who are users of their services. This is because there would be no benefits for both citizens (users) and providers of open government data if users stop using the provided services.

ACKNOWLEDGEMENTS

First of all, the researchers wish to acknowledge their gratitude to the anonymous reviewers who gave freely time and effort, constructive recommendations that enhanced the value of this manuscript. The researchers also would like to express their deepest thanks and appreciation to all Malaysia citizen who participated in the interview research. Special thanks go to Malaysia Government and University Utara Malaysia for supporting the studies of the researchers that enabled them to conduct this research.

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