Essential Elements for the Successful Implementation of Public Information and Service Delivery System (e-Service) for the District Education Office in Malaysia

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Abstract - *This research dealt with the important aspects of Public Information and Service Delivery System (e-Service) specific for District Education Office (PPD) in Malaysia. The objective is to discuss and disclose essential elements for the e-Service. For the purpose of this research, a set of 300 survey forms had been distributed to 15 primary and secondary schools within the district of Gombak (randomly chosen as respondents to have their opinions and perceptions). From those 300 forms, 280 completed copies had been returned and subsequently analysed using SPSS package. The result of this survey reveals the important elements that required for the e-Service system exclusive for PPD. Research methodology, data processing and data analysis are also discussed in this paper. In conclusion, this research reveals the important elements to the e-Service exclusively for the PPD.*

1. Introduction

In the 20th century now, the information technology explosion that occurred globally has influence and changed the lifestyle of the world. That includes changes in education, research, communications and services to consumers.

Based on the study of Palvia and Sharma [35], E-government refers to the delivery of national or local government information and services via the internet or other digital means to citizens or business or other governmental agencies. E-government is an important medium because it; (a) is an initiative to improve the information flows and processes within government [13], (b) will increase accountability and transparency, less corruption, greater convenience, increased citizen involvement, greater efficiency, and cost reduction for government and user [47].

In addition, e-government has also provided significant benefits to all parties. According to Alsheri and Drew [6], the benefits resulting from e-government are; (a) Reduction of customers' and organizations' time, effort and costs, (b) improvement of service delivery and citizens' satisfaction, (c) increase of users' ICT skills, internet knowledge and computer usage and (d) creation of new business and work opportunities. These benefits received by all levels of society indirectly facilitate consumer adoption process of this electronic service system.

In Malaysia, e-government is also known as a public delivery system or e-services [41]. In general, e-service is an abbreviation for 'electronic service', which is a system of online services that can perform various transactions such as bill payments, job applications, license renewal, summons payment and many more. E-service is a system that change the conventional way of doing daily business using manual to be more of technology based by using 'fingertips'. In Malaysia, the explosion of information technology systems also affects the administration of an organization in doing many particular tasks. The transformation process of e-services such as e-commerce, initially undertaken by corporate bodies and private companies, has now been fully implemented by the Malaysian government, in almost at all their agencies.

This study is dealt with the important aspects or the essential elements of the Public Information and Service Delivery System (e-Service) specific for District Education Office (PPD) in Malaysia. The objective of this study is to discuss and disclose important and essential elements for the e-Service.

2. Literature Review
2.1. Electronic Government

The advent of Information and Communication Technology (ICT) is an important starting point in supporting the public delivery system. In this era of ICT, tremendous opportunities are available in implementing information system for automation and computerisation of public delivery system. It is also

now visible how governments across the globe evolved to deliver public services and information to the people as well as to the other organizations. The introduction of internet has revolutionised the way public delivery service being implemented; from traditional method to electronic form [42]. The internet has introduced a variety of innovative ways by providing new interaction channels for the public to interact with the government. This new channels for providing and delivering the sources of information and public services electronically or the 'online' information system is called electronic government (EG). The EG has making public delivery system more effective and efficient [15].

One important thing in this government revolution is its public delivery system with EG as the main driver. This is aggravated with the increasing demand by public whom wishes to see the government to improve its services to become more convenience, holistic, consistent, faster, reliable, less hassle and more transparent. These factors put pressures to the government to overhaul and provide more effective and efficient public services [42]. Basically, the public delivery system has to introduce different approaches with regard to the relationship between people and the government to fulfil the high demand on the services it provides. Rapid growth in the ICT has opened wide opportunities in introducing the EG, a system that would transform public service scheme from manual-traditional to fully electronic-online. Also, to move forward within this global economic competitiveness era and to be advance in the public service, the government must be attentive towards technological and organisational changes. The modernization through the EG strategy is in fact one of the approach. In other words, the government must move concurrently with the ever-changing technology to meet the increasing demand for its public services [28]. The scope for EG services is in essence to give goodness to various public sectors and to other parties including to the community (G2C); to the businesses (G2B); and to inter-governments (G2G) (UN, 2005). Thus, the EG services can be categorized into 3 aspects of relationship in general; G2C, G2B and G2G. In order to support these 3 aspects of public service system, ICT plays important role as a channel and key driver for each EG service [16]. It is also the most important and consistent aspect to the EG [46, 41, 20]. Briefly, the G2C, G2B and G2G services are inter-dependent in one holistic public service system.

The government of Malaysia realised that it must have what it takes to face information era in the new global economy. For this, Malaysia in its effort to achieving the Vision 2020 has launched Multimedia Super Corridor (MSC) in 1996. This move has indirectly promoted and unleashed the potential of ICT for the development of Malaysia towards *knowledge society* [16].

The MSC premier application has been developed to drive the ICT initiative in Malaysia. "The Malaysian Government: Plan for the Electronic Government Implementation" continues to advance with ICT and triggers the transformation of the public sector to further improvise its delivery system [29]. EG is one of the applications under the MSC and its application is the mover to the EG initiative in Malaysia. Generally, EG involves 7 main applications that play important roles as public service system. They are Generic Office Environment (GOE), Project Monitoring System (PMS), Electronic Procurement (EP), e-Services, Human Resource Management Information System (HRMS), Electronic Labour Exchange (ELX) and e-Syariah. All of them provide service to the G2C, G2B and G2G.

These applications of EG were done in the effort to upgrade the public service system aimed at benefiting the public [16]. Some of the initiatives are based on agency (*agency-led*) and therefore are not considered part of the EG prime applications (MSC). The examples include; 1) Traffic Information and Summon Payment System under the Royal Malaysia Police (PDRM) and Road Transport Department (JPJ) which is also linked via the e-Service system, 2) Road Tax Renewal system linked with https://www.myEG.com.my, 3) e-Filing system for the public and business tax filing by the Inland Revenue Board (IRB) linked by https://e.hasil.org.my, 4) i-Akaun under the Employee Provident Fund (EPF) linked by https://myEPF.my and many more (MAMPU, 1997). Table 1 lists few projects planned under EG including the e-Service and the agencies responsible for the implementation.

The concept of e-Government carries the objectives of transparency and convenience apart from enhancing the relation of government-people in a simpler, fast and effective form of interaction [14]. It is hoped that this could be realised via the two core objectives of e-Government where the first is; redefinition of relation between government-people and the business entities. This interaction would enable the public to gain wider, convenient and quality access at cheaper cost and higher satisfaction upon government services. The second objective is to accelerate the development of MSC through better co-operation between public and private sectors.

G2C services that refer to the e-Service are the followings; Computerised Theory Test Order and Issuance of Driving License, Online Bills Payment, PDRM and Road Transport Department's Summons Checking and Payment Services, Election Commission's Electorates Registration Checking, Online Submission of Tax Return Form (e-Filing), Supply of Goods and Services to Government via Online (e-Procurement), Online Scholarship and Study Loan Application (e-Sila), Online Comprehensive Penchant Info System (POWER) and Online

Liquidation and Bankruptcy Status Check (e-Insolvensi) [29].

Table 1. The Projects Under EG. (*Source: MAMPU, 2007*)

No	Project	Implementer
1	e-Service	Road Transport Department (JPJ), Royal Malaysia Police (PDRM), Tenaga Nasional Berhad (TNB), Telekom Malaysia Bhd (TMB), Department of Insolvency.
2	myGovernment Portal	Manpower and Administrative Modernization Planning Unit (MAMPU)
3	Electronic Labour Exchange (ELX)	Ministry of Human Resources (KSM)
4	e-Procurement	Ministry of Finance
5	Generic Office Environment (GOE)	Manpower and Administrative Modernization Planning Unit (MAMPU)
6	Project Monitoring System (PMS II)	Implementation Coordination Unit (ICU)
7	eSPKB	Department of Accountant General (JANM)
8	Human Resource Management Information System (HRMIS)	Department of Civil Service (JPA)
9	Pensions Online Workflow EnviRonment (POWER)	Department of Civil Service (JPA)
10	Government Financial and Management Accounting System (GFMAS)	Department of Accountant General (JANM)
11	e-Syariah	Department of Syariah Judiciary Malaysia (JKSM)
12	e-Kehakiman	Division Legal Affairs (BHEUU)
13	e-Tanah	Ministry of Natural Resources and Environment,
14	e-PBT	Local Department Government
15	Local Department Government (Lembah Kelang)	Secretary of State (SUK) Selangor, Kuala Lumpur City Hall (DBKL), Putrajaya Corporation (CORP).

In line with the service provision of e-Government, the government has provided many delivery channels to the users. The concession agreement between mySPEED and the Malaysian Government has commenced on 23 May 2000 and with that, mySPEED will provide the following agencies with the e-Service:

- Road Transport Department (JPJ).
- Royal Malaysia Police (PDRM).
- Kuala Lumpur City Hall (DBKL).
- Department of Insolvency (JIM).
- National Registration Department (JPN).
- Tenaga Nasional Berhad (TNB).
- Telekom Malaysia Berhad (TMB).

The objective of e-Service project is to enable Malaysian public to surf the e-Service via a *one-stop-shop* from many channels. Such project is based on the G2C concept and is aimed to make government services highly effective, productive and qualitative. The e-Service will be more effective if bi-lingual is used as its medium of interface.

In reference to the projects listed by MAMPU in 2007, it is clear that the e-Service is part of the key projects planned under the EG. Selected agencies such as JPJ, PDRM and TNB have been identified as the implementers of the project. E-Service could help the agencies to deliver the info and services to the public and businesses. In the effort to improve and expand the public delivery system completely, e-Service can also be rolled out to the other agencies. From the listing issued by MAMPU in 2007, the department in education sectors like PPD is yet to be included in the plan to use e-Service for the purpose of delivering public info and services to the public such as teachers, parents and others.

Thus, this research will look into the implementation of the Public Information and Service Delivery System or e-Service specific to PPD with the focus on the key elements required for the e-Service. For this purpose, the research will explore the gatherings of required data and inputs from literature collections study as well as from the respondent feedbacks of survey questionnaires.

3. E-Services

In Malaysia, the e-service applications are among five pilot projects that have been selected by the government to be implemented at the first phase. The main objective of this project is to improve services access through various electronic delivery channels that are widely accessible to the public and also as a one-stop service center where various services can be obtained via these delivery channels. Under this project scheme, citizens can achieve a simple of the convenient service offered by various departments of public agencies such as insurance and driving license renewal, summons payment, internet bills, and telephone or electricity payment at one place / center. And there also a provisions for a variety of electronic channels as a provider of services that are available through the internet, multimedia kiosks, IVR telephone and wireless devices with a facilities for payment by credit card, debit card or ATM card and also other payment modes. Therefore, citizens are provided with a various service delivery channels choices with 24 hours per day, 7 days per week. In other words, users no longer need to carry out transactions at agencies branches and utility offices, they may do so from anywhere according to their convenience. To make it more user-friendly, multilingual facility for each access device was introduced. This project has resulted, in addition public convenience, there has been an improvement in the delivery of public services. And this has encouraged users to be more involved in using the e-service.

In terms of e-service, it is important to ensure that Malaysians use the provided e-service applications. This is to ensure that the government efforts

introducing e-service become as a waste and not achieving the objective. Therefore, we need to know and find out what factors will make user want to adopt and use this e-service. Without knowing the important of adoption factors and inhibitor factors for e-services, service providers, such as departments or public agencies may use the resources and energy/effort that limited them on matters that less importance in which may have less contributed to the successful implementation of e-service. Otherwise, if all these factors can be identified, the existing key resources can be channeled to further improvement of e-service system.

4. E-Services in Education

The efforts of the government of Malaysia in introducing and expanding the use of IT in education have long been planned as long-term strategy. It is very costly and has been implemented in many stages using different approaches suitable to a particular target group. As a general strategy and an early move, the government has attempted to equip the schools with ICT infrastructures for administration and services. However not all schools can be supplied with these facilities, thus this requires continuous effort to ensure the original objectives achievable. With this effort, all the governance affairs can flow smoothly, info dissemination can be faster and school administration can be more organised and transparent. In short, the info and service delivery activity can be done faster and cost-saving in the long run.

For example, all of these benefits can be experienced when students register for examination, attend examination and receive the examination result. These advantages can also be seen by students applying for entrance to universities, the selection process and the result announcement of successful applications. All of these could now be done online. Moreover in private higher education institutions, the ICT usage is wider due to their smaller number of students as compared to the public universities. Most important, the ICT facilities enable many bureaucracies in education to not only become paperless, but easier, faster, more effective, efficient, and saving in the management costs as well.

5. Success Factors Of E-Services

Earlier research indicated many factors contributing to the success of e-services. These success factors indirectly catalyze the use of e-services among Malaysians.

The main success factors of e-services depend on the level of efficiency of this system. According to Kaliannan and Halimah [30], e-service system, will indirectly involve the use of Internet and wireless communication technology. This will allows people to

access e-services regardless of time, 24/7/365 days. Moreover, according to Abhichandani and Horan [3], the efficiency of the e-service system enables information to be accessed efficiently with minimal effort by the end user.

The second success factor is Information Communication Technology. To achieve online services efficiently and effectively, the quality of public service delivery through the use of ICT and multimedia should be prioritized [30]. Infrastructure such as the Internet is one of the important medium to achieve a better government [39]. According to Pudjianto and Hangjung [37], top management has a great power to influence subordinates behavior in the organization. This will indirectly help expedite the adoption of e-service systems among citizens.

There are also factors by categories that contribute to the success of e-government. Among the factors are customer, citizen, government, information, network, organization, system web, trust, co-operation and user. Here are listed in more detail all the factors which are customer loyalty [26], customer satisfaction [44], citizen demand and citizen trust [44], government enforcement and government transformation [37], government policy [11], government transparency [30], information quality [27], information security and information sharing [22], network infrastructure and networking policy [12], organization mission, vision, objective and strategy [1], organization responsiveness [8], system compatibility [39], system quality [27], system reliability [8], system security [19], web interactive and web presence [21], web navigability and web usability [24, 25], trust in e-government and system [17], trust in organizational [30], co-operation among citizen [7], co-operation between organization [30], user adoption [32], user characteristic [40], user experience [3], user friendly of system [10] and also user loyalty [26].

In addition, other factors such as perceived behavioral control, perceived ease of use, perceived risk and perceived usefulness also contributed to the success of e-service systems. For example, perceived ease of use refer to which people believe, by use the e-government, they are able to perform any transactions easily, while perceived usefulness, according to Alomari [8] was defined as the extent to which people believe by using e-government, it can help to increase the revenue or government transactions. In addition, Ajzen [33] state that perceived behavioral control reflects to beliefs about how to get resources and opportunities to perform the behavior. While the perceived risk defined as fear of the losing personal information and the fear of being monitored on the internet [23], [38].

Several other adoption success factors of e-services were also mentioned in several journals written by previous researchers such as service quality [10, 26, 8, 36]; effective and efficient [43]; website design [10, 3,

31]; ICT expertise and ICT infrastructure [37] and also social influence [24, 25, 5]. Other factors that also influence the adoption and the success of e-services are technological infrastructure [39, 12]; use of computer and internet [11, 40]; staff involvement, staffing and skills [22]; user satisfaction [11], [45] and time flexible [12, 43].

In addition, the single factor that contributes to e-government success is as follows: ICT training for citizen [39], awareness campaign by government [44], e-government promotion [18], influencs to use e-government [39], behavioural intention [33], bridging the digital divide [5], bureaucratic [34], personalization and customization [3], political [34] and yet, privacy and confidentiality [32].

In conclusion, all the success factors above are the catalyst for e-services development. The successful of existing systems, has given people a confidence to try, thus implementing e-services system in everyday affairs.

6. Methodology

In general, quantitative research method is used in this research where it presents the basic relationship between empirical observations and mathematical expression. The instruments used for the data collection are survey, observation and questionnaires. A series of focus groups were used to qualitatively explore the factors or key elements that affect the successful of implementation of e-service for PPD. Focus group method also used in this study because detail information about user's experience, opinion and feeling was required and this technique is recommended for this purpose [4]. In addition, in this section the sampling and data measurement approaches are also elaborated here briefly.

6.1. Sampling and Selection of Respondents

In this research, the author have chosen the Gombak District Education Office (PDD) to be consulted for case studies and 15 schools (primary and secondary schools) in the Gombak district area randomly selected as respondents in this case study.

The respondents were groups of employees whom directly involved with management and administration of the PPD as well as school teachers. These groups of people are considered to have the information and could provide views needed for this research study. Each respondent is randomly selected by the schools' principals and head the PPD that consisting of different group salaries and backgrounds.

A total of 300 sets of questionnaires were distributed to the schools. This means that every school has received 20 sets of questionnaires to be completed. Of the total, 280 or only 93.3% of the distributed forms were completed and returned. In addition, there are also parts in some of the returned forms that cannot be

analyzed. It is either due to incomplete forms or confusing answers.

6.2. Data Measurement

For this research, the authors have chosen the measurement method used by Likert. This is because the Likert scale is easy to use as it can be easily prepared and highly reliable [9], [2]. In general, the method is easy to understand, easy to use and logical, and can measure a variable or a qualitative statement by inserting score or specific value to the received answers [2].

7. Results

In the following stage, the data obtained from the questionnaires are processed using SPSS package. Based on the results, a summary, recommendations and conclusions will be made.

This case study is intended to obtain potential respondents' views on the elements that should be emphasized in developing the e-Service to PPD so that the system is effective, efficient and of higher quality in its implementation. Five (5) main elements have been listed, they are; 1) quality of information / service, 2) reliability and user feedback, 3) privacy, 4) accessibility and web design, 5) quality of information / service delivery as well as some additional elements. Table 2 exhibits the analysis results.

7.1. Quality Information/Service

Table 2. Distribution of percentage on Quality of Information / Service elements. N (Total respondents) = 280

Scale, %	4	5	Total (%)	Average response
Item 1	41.79	36.79	78.58	4.14
Item 2	42.14	34.29	76.43	4.09
Item 3	36.82	37.55	74.37	4.08
Item 4	39.64	35.71	75.35	4.09
Item 5	38.35	35.13	73.48	4.07
Item 6	45.32	37.77	83.09	4.17

In average, all the items under the quality of information / services are evenly important. Respondents have chosen '*agree*' (4) for all elements (items) to be considered in ensuring that the quality of information and services can be properly delivered by the e-Service system. All elements are important with the majority of the percentage who chose '*agree*' or '*strongly agree*' is between 73 to 83 percent. Item 6 is identified as the most emphasized element since 83 percent of the respondents '*agree*' and '*strongly agree*' on this item. It shows that most of the respondents expect that e-Service could be used without incurring any cost. Item 3 (providing the latest information) and Item 5 (providing information that is relevant, complete, and accurate) show a relatively low

percentage of about 75 percent. Here are the descriptions of the items under the quality of information / services:

- Item 1: Provides direct access to information sources / services.
- Item 2: Prepares a comprehensive supply of information.
- Item 3: Provides the latest information (up-to-date).
- Item 4: Provides real, authentic and reliable information.
- Item 5: Provides relevant, complete and accurate information.
- Item 6: Provides access and dissemination of information and services for free.

7.2. Reliability / Accountability / Consumer Feedback.

Table 3. Distribution of percentage on Reliability / Accountability / Consumer Feedback elements. N (Total respondents) = 280

Scale, %	4	5	Total (%)	Average response
Item 1	43.21	27.14	70.35	3.93
Item 2	40.86	33.69	74.55	4.07
Item 3	44.96	35.25	80.21	4.14
Item 4	37.99	38.71	76.7	4.09
Item 5	46.59	34.41	81	4.12
Item 6	47.31	34.77	82.08	4.14

Overall, respondents '*agree*' (4) that all elements are important. Respondents stated that Item 6, Item 5 and Item 3 are considerably important to be emphasized over other elements. As shown in Table 3, over 80 percent of the respondents chose '*agree*' and '*strongly agree*' on these items. Respondents expect for variety of mechanisms such as email and messaging facilities can be applied through e-Service. They are also concerned for permission to send feedback on the services available and hoped for immediate action to be taken on all their complaints and suggestions. Respondents considered Item 1 to be the least important with only 70 percent '*agree*' and '*strongly agree*'. Also, average response ('*agree*' and '*strongly agree*') of less than 4 describes that the importance of this feature is weak. To conclude, timeliness of information and service delivery is not highly concerned by the respondents. Here are the items under the reliability/ accountability/ feedback users:

- Item 1: Information/ services are delivered on time.
- Item 2: The access / information / service delivery must be free of errors.
- Item 3: Allows users to submit inquiries or comments.
- Item 4: Online complaints / suggestions are immediately attended.
- Item 5: Allows users to submit positive feedback on services provided.
- Item 6: Provides variety of feedback mechanisms such as through email, message or *sms*.

7.3. Security (Privacy) / Accessibility / Website Design

Table 4. Distribution of percentage on Security (Privacy)/ Achievability/ Website design elements. N (Total respondents) = 280

Scale, %	4	5	Total (%)	Average response
Item 1	28.32	55.91	84.23	3.93
Item 2	38.71	48.39	87.1	4.07
Item 3	38.93	51.07	90	4.14
Item 4	46.59	41.58	88.17	4.09
Item 5	48.21	43.21	91.42	4.12
Item 6	46.43	42.5	88.93	4.14
Item 7	41.43	46.79	88.22	4.35

Overall, respondents '*agree*' (4) that all items are essential to ensure consumer privacy and rights are protected and the website presentation (accessibility and design) must be up to consumer satisfactory level. Percentages of those choose '*agree*' and '*strongly agree*' for all items/elements are very high, around 90 percent. Meanwhile Item 3 (website can be accessed easily and comfortably) and Item 5 (simple, straightforward and informative interface) are recorded with highest percentages. Majority of the consumers expect website presentation to be user-friendly and informative. Compared to other elements, Item 1 showed the lowest percentage with only 84 percent '*agree*' and '*strongly agree*' that security of personal and important data as well as online transactions must be guaranteed. Here are the items under the safety / accessibility / design:

- Item 1: Personal data, valuable data and online transactions must be guaranteed in safety.
- Item 2: Provides an easy mechanism for login / logout and it is available at any time.
- Item 3: Website can be accessed easily and comfortably.
- Item 4: Provides step-by-step instructions on website access and usage.
- Item 5: Website layout must be simple, straightforward and informative.
- Item 6: All links should be working all the times.
- Item 7: Medium of interaction in the website (e-Service) must be using official language.

7.3. Quality of Information / Service Delivery

Table 5. Distribution of percentage on Quality of Information / Service Delivery elements. N (Total respondents) = 280

Scale, %	4	5	Total (%)	Average response
Item 1	36.79	56.79	93.58	4.5
Item 2	47.14	39.64	86.78	4.26
Item 3	41.58	49.82	91.4	4.4
Item 4	40.5	52.33	92.83	4.45
Item 5	38.93	55	93.93	4.49
Item 6	37.3	56.6	93.9	4.5
Item 7	38.5	54.7	93.2	4.47
Item 8	45.9	42.3	88.2	4.28
Item 9	46.6	45.5	92.1	4.37

In average, almost all of the elements listed under the Quality of Information / Service Delivery are of high interest to the respondents (see Table 5). The average response is about 4.5 which is an ideal balance between '*agree*' and '*strongly agree*' on most of the elements. Item 2 (online management means "*paperless*" in operation) and Item 8 (online operation is more transparent than manual method) however are of less interest among the respondents as compared to the other elements. Yet, the average response for these two elements is more than 4 shows their importance in ensuring a comprehensive public delivery system could be established. Here are the items under the Quality of Information and Service Delivery:

- Item 1: Business (operation) is much faster.
- Item 2: Paperless operations.
- Item 3: Provides information / services on time.
- Item 4: Operates in less time and cost savings.
- Item 5: Business can be done directly (from the home, office, kiosk, etc.).
- Item 6: Business should be more convenient, comfortable, organized and well-planned.
- Item 7: Quick response.
- Item 8: Transparent business.
- Item 9: Multiple operations at one time.

7.5. Additional elements

Table 6. Distribution of percentage on additional elements. N (Total respondents) = 280

Scale, %	4	5	Total (%)	Average response
Item 1	53.57	37.5	91.07	4.28
Item 2	55.36	32.86	88.22	4.2
Item 3	55.36	3.07	58.43	4.17
Item 4	52.5	37.14	89.64	4.26
Item 5	53.93	35.36	89.29	4.24

In this study, there are several additional elements that could be advantageous in creating a conducive e-Service model. For example, search options, communication facilities and web design features. Results showed that all the additional elements listed by the respondents received good support. In average, they '*agree*' to include these elements into the model of e-Service to complete the system. Here are the items provided under the additional elements:

- Item 1: Provides search options.
- Item 2: Provides communication interface with other users.
- Item 3: Provides *customer relationship and service* facility.
- Item 4: *Self-reliance* web design.
- Item 5: User-friendly and innovative web design (emotional benefit).

8. Discussion And Conclusion

8.1. The Essential Elements for the Successful Implementation of e-Service for PPD

A system or service that successfully implemented in a country obviously has a factor (elements) or catalyst that contributed to its success. Here are the main elements or factors that contributing to the successful implementation of the e-service system:

8.1.1. Elements of Quality of Information / Services

From the carried out study showed that quality of information / services is an integral part in contributing to the success of e-services. This is because, with the information or service quality, it can give users direct access to the source. This can help users to achieve further information they want. It can also provide comprehensive and latest information. Where, all of information provided is complete, simple and up to date as the system updated daily by the system admin. In addition, the information provided is real authentic and reliable as the information is from the system admin, which is one of the PPD staff and he will update all information regarding to his superior order. So the information provided is accurate. According to some studies, the quality of information or services that relevant, complete and accurate is able to give a great impact on the use of e-service system. This is because, the simple, accurate and complete information will help user easily get the information, thus intend to use the system again in the future. All information provided is free to be accesses and delivered directly to user.

8.1.2. Elements of Reliability, Accountability and User Feedback

Overall, online service users think that e-service is something that reliable and responsible, especially when there is feedback from the system management. This is because information or services are delivered on time. For example, in PPD Kulim e-service system,

users can request data such as checking the school canteen tender status. Furthermore, access or data transmissions are free from any error. Where, the data requested by the user will continue to be achieved to database system. Where, the data requested by the user will continue to be achieved to database system. Next, the e-service system allows users to send queries and provide comments, yet, perform related complaints or suggestions. Each feedback from users will be noted and managed immediately. Not only that, users can also provide an assessment of the services provided through the customer satisfaction ratings section. Besides, the e-service system also provides various mechanisms for feedback to user. Not only in the system, some the important announcements can also be accessed by users through social networks such as Facebook and Twitter.

8.1.3. Elements of Security (Privacy), Accessibility and Web Design

Results of studies have shown that consumers are more likely to use a system that safe, accessible with user-friendly design. This is because, with high security system, all data and transaction made will be secure. Furthermore, mechanisms such as login and logout will help to enhance the security of the system. From the point of accessibility, the web site can be reached easily and comfortable, the most important, users have access to internet. Meanwhile, in terms of web design, users are very concerned about user-friendly design, where the layout of the website is easy, simple and informative. Delivery language also can affect its use among users. Normally, the national language will be the delivery language, while users still have an option to choose English language when they use the system.

8.1.4. Elements of Quality of Information/ Service Delivery

From the previous research results, found that quality in term of information delivery or service is one of the catalyst in the e-services success. This is because service delivery quality can help a business operation running smoothly and fast. Besides, it indirectly helps save time and reduces costs, because every management operation performed is paperless. Next, the e-service is simpler, comfortable, organized and well planned yet can be done directly in anywhere, whether at home, office and others. The e-service is also very efficient for a variety of business or transactions, because it can be executed at one time and the faster response time causes user does not have to wait long time to execute a transaction. Furthermore, the carried on business is more transparent, which all users are treated equally.

8.1.5. Additional Elements

There are several additional elements that contribute to the success of this e-service system. Among that is, the system offers search options to allow users find their desired data or information. Next, it provide communication interface with other users as well as good customer relationship and service facility. From the term of web design, the e-service system is self-reliance, user-friendly and innovative.

9. Conclusion

Based on the research findings, theoretical discovery of other researchers and the authors' views, a set of elements that are required for the successful implementation and development of e-Service system specific for PDD is generated (see Figure 1). Overall, the elements (aspects) of e-Service presented in the table indicate "positive" situation where they are based on views or perceptions of respondents of 60% and above.

The Elements of e-Service for PPD

- **Elements of Quality of Information / Services**
  - *Provides direct access to resources*
  - *Provides comprehensive information*
  - *Provides the latest information*
  - *Provides real, authentic and reliable information*
  - *Provide relevant, complete and accurate information*
  - *Provides free access and delivery*
- **Elements of Reliability, Accountability and User Feedback**
  - *Information / services are delivered on time*
  - *The access / delivery is error-free*
  - *Allows users to submit inquiries and comments*
  - *Complaints / suggestions are immediately attended*
  - *Users can provide feedback on service satisfaction*
  - *Provides variety of feedback mechanisms*
- **Elements of Security (Privacy), Accessibility and Web design**
  - *Data and transactions security are guaranteed*
  - *Provides a mechanism for login / logout*
  - *Website can be reached easily and comfortably*
  - *Provides step by step instructions for access*
  - *Website layout is easy, simple and informative*
  - *Official language as the language of web delivery*
- **Elements of Quality of Information/ Service Delivery**
  - *The business / operation is fast*
  - *Paperless operation management*
  - *Dissemination of information / services on time*
  - *Operates in less time and cost-savings*
  - *Business can be made directly (from home, office, etc.)*
  - *Business must be simple, comfortable, organized and well-planned*
  - *Fast response time*
  - *Transparent business*
  - *Multiple business can be done at a time*
- **Additional elements**
  - *Provides search options*
  - *Provides communication interface with other users*
  - *Provides 'customer relationship and service' facility*
  - *Self-reliance web design*
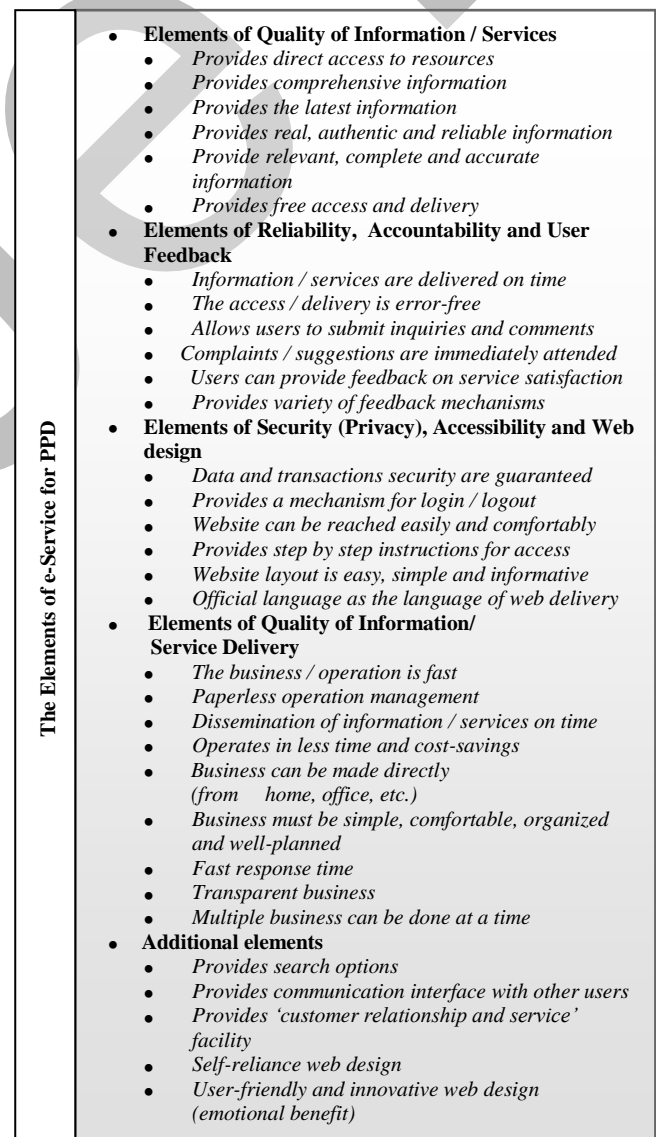 - *User-friendly and innovative web design (emotional benefit)*

Figure 1. The essential elements of e-Service for PPD in Malaysia.

It is believed that incorporation of these elements into the design of e-Service would make the system more productive and effective. These elements are also universal where they are also suitable to be implemented on any e-Service system for any other institutions or public agencies.

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