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Zakat Management Information System: E-Service Quality and Its Impact on Zakat Collection in Indonesia

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ABSTRACT

The purpose of this study is to examine the impact and the electronic service quality of the national zakat management information system (SIMBA) on the national zakat collection. This paper uses a multiple regression analysis in its explorative attempt to illustrate the impact of SIMBA implementation on zakat collection in Indonesia. It shows that SIMBA is positive and significantly impact the national zakat collection as well as the human development index that is used as a proxy for the human resource management quality of zakat institutions. Nonetheless, the population is negative and significant to the zakat collection as endemic poverty and reluctance to pay zakat are indicated as the reasons. Moreover, this study has succeeded in adapting and conducting an e-service quality survey to zakat information system realm. All the tests prove that the instrument in this study has a high degree of reliability and validity. The results show that some of the demographic factors significantly impact the perceived performance of SIMBA. Multiple regression analysis that is conducted in this study shows that e-service quality dimension is positive and significant towards SIMBA' overall quality, perceived value, and loyalty intention. This study contributes to the zakat literature, especially in the impact of the national zakat information system, which is pivotal in enhancing zakat collection and poverty alleviation program funded by zakat.

Keyword: BAZNAS, electronic service quality, management information system, SIMBA, zakat.

INTRODUCTION

Despite its advancement, the growth of Islamic banking and finance (IBF) has derailed from its path towards becoming an instrument for financialization and failed to attain the social and the developmental goals as were expected. ElGamal (2006) argues that IBF development that replicating the conventional counterpart makes this peculiar banking model less efficient in providing the same product. Current IBF model is also not significantly different in risk feature according to Abedifar *et. al.*, (2015), and the reverse engineering approach to create an Islamic product may cause sharia non-compliance risk which will lead to reputational risk and systemic risk that may collapse the whole industry (Qattan, 2006)

Several studies such as Asutay (2007a; 2007b; 2012) argue that it is paramount to return to *zakat* and *waqf* that can deliver developmentalism that was expected from the IBF. *Zakat*, *sadaqat*, and *waqf* that have endogenously embedded in Muslim society are considered as a solution to inequality and poverty problem. These institutions can mobilize Islamic religious fund among the society and help the less fortunate through social security scheme and economic empowerment program (Chapra, 2008). The nature of this model that promotes

social justice and welfare inclusion makes it more effective than conventional finance that has excluded the poor through debt-based operation (Obaidullah & Khan, 2007).

Empirical findings by Shirazi & Amin (2009) shows that OIC countries can mobilize *zakat* fund ranging from 1.8 percent to 4.3 percent of their GDP which is very potential to combat poverty that endemic in Muslim countries. Moreover, a meticulous study indicates that about 20 OIC countries can solve extreme poverty by solely mobilizing and utilizing *zakat* funds from internal sources (Mohieldin *et. al.*, 2012). Nonetheless, the current situation indicates that there are a lot of things to do to achieve the full potential of *zakat* in Muslim countries. In Indonesia, the largest Muslim country, although the *zakat* collection increases over the years, it is still stuck at 1.68 percent of its total potential (BAZNAS, 2017)

Having a limited amount of mobilized *zakat*, current literature on *zakat* can be categorized into three groups. The first one is the literature that aims to optimize the utilization of *zakat* by looking for a *zakat* disbursement model that can significantly reduce poverty in Muslim countries. The second group is literature that trying to increase the actual collection by looking for determinants that significantly induce Muslim to pay *zakat*. The last group, which is more scarce than the other two, is literature that scrutiny the *zakat* management, operation, and performance.

Interestingly, the study in this field, especially on the *zakat* management information system is pivotal to effectively eradicate poverty and boost collection. For instance, a study by Othman & Noor (2012) in Malaysia finds that inaccurate database of *asnaf*, under-identification of *asnaf*, bureaucracy, and geographical challenge are some hindrances on the effective use of *zakat* for poverty alleviation. On the other side, a study by White (1952) shows that management information system can increase public trust to non-profit organization i.e. *zakat* institutions and safeguard the ethics within the organization by providing transparency, disclosure, oversight, and conflict of interest avoidance. In addition, Ahmed (2004) argues that the pivotal aspect of enlarging the contribution of the *zakat* and *waqf* institutions on poverty alleviation is knowledge development and information assimilation. Therefore, this particular study is aimed to scrutiny the impact of the national *zakat* information management system (SIMBA) on the Indonesian *zakat* management system and operation

AIMS, OBJECTIVES AND RESEARCH QUESTIONS

This paper aims to evaluate the performance of SIMBA by examining its impact on *zakat* collection. In addition, this study aims at examining the electronic service quality dimensions of SIMBA as perceived by the operators to capture the gap between the expected and the real service quality of this system.

In fulfilling the aims, the following objectives are developed:

1. Developing an advanced understanding of the *zakat* management systems;
2. Assembling secondary data on *zakat* transactions through BAZNAS and conducting a survey with SIMBA operators on their perceptions towards the system;
3. Examining the correlation between the implementation of SIMBA and the *zakat* collection in respective local BAZNAS offices;

4. Evaluating the performance of the national *zakat* information system using e-service quality.

In line with identified aims and objectives, the following research questions are developed:

1. Has BAZNAS and SIMBA improved the collection of *zakat* as indicated in the total *zakat* collection?
2. Has the SIMBA system fulfilled the expectations of the operators?

LITERATURE REVIEW

Zakat Management System: A Worldwide Survey

There is a large number of academic and professional research on *zakat* that can be classified into three major categories. The following part provides a survey of such topical areas and points out the gap in the literature that significantly be fulfilled by this research.

First, the literature on *zakat* as a socioeconomic intervention. Most of the studies in this group elaborate how *zakat* can reduce poverty and inequalities with evidence from a lot of Muslim countries (*see*, among others: Abdelbaki, 2013; Kasri, 2014; Ali & Hatta, 2014; Kareem & Bankole, 2016). In addition, Huq (1993) elaborates how *zakat* not merely addressing poverty but also sustain economic growth, while Kahf & Yafai (2015) suggest that *zakat* that can give significant relief to governmental budget in providing social assistance and security. Similarly, risk-sharing contracts and *zakat* as part of the redistributive instrument in Islam can induce financial inclusion (Iqbal & Mirakhor, 2012).

Secondly, studies that elaborate *zakat* estimation in Muslim countries and its determinant factor. Shirazi & Amin (2009) show that OIC countries can mobilize *zakat* fund ranging from 1.8% to 4.3% of their GDP in annual basis. In Pakistan, the total *zakat* collection is estimated up to 7% of its GDP Shaikh (2014) whereby in Indonesia it is about 3.4% of its GDP in 2010 Firdaus, *et. al*. (2012). Moreover, Sapingi, *et. al.* (2011) conclude that educational background positive and significantly correlated with the intention to pay *zakat*. On the contrary, lack of institutional support results in *zakat* ignorance (Ummulkhayr, *et. al.*, 2017). Other than that, studies on the *zakat* collection discuss *fiqh* related matters. Kahf (1989) extends Qaradawi's work on *fiqh zakat* by creating three *zakat* estimation approaches namely the traditional *fiqh* position, Qaradawi's view, and modified Qardawi's view by adding *zakat* on a fixed asset at the premium of 2.5% of their stock.

Differ from the two discussed topic above, the third group, studies on the *zakat* management system and its performance are quite limited if not scarce. One can expect the reason is that this particular type of study needs a stronger involvement and attachment to operational activities of *zakat* in the sense of assembling primary data. Nonetheless, there are some studies that scrutiny the performance of zakat institutions such as Noor (2012) and Embong, *et. al*. (2014) who use balance scorecard for assessing the performance of the *zakat* institutions in Malaysia. Moreover, Wahab & Rahman (2012) measure the productivity growth of zakat institutions in Malaysia using data envelopment analysis. Using the same methodology, Hamzah & Krishnan (2016) finds that excessive usage of staff has caused inefficiency in the zakat institutions in Malaysia. Similarly, Rusydiana & Al-Farisi (2016) tells that high operational cost is the source of

inefficiency in zakat institutions in Indonesia. Wahab & Rahman (2013) emphasizes the importance of information and communication technology as well as the computerized zakat system to improve zakat institutions' efficiency.

Other than that, research on the *zakat* management information system is an area that needs much further development. This aligns with several findings in some studies in which *zakat* institutions do not successfully address the poverty and equality problem (Mahamod, 2011; Embong & Nor, 2013). Inaccurate database of *asnaf*, under-identification of *asnaf*, bureaucracy, and geographical challenge are some hindrances on the effective use of *zakat* for poverty alleviation (Othman & Noor, 2012) that can be resolved by optimizing the *zakat* management information system.

This emphasizes the importance of management information system which is able to tackle the entire process of zakah giving, such as an information system benefiting from the latest technology that can robustly conduct such identification and ease the *zakat* management in modern time. This identification is important both for *muzaki* and *mustahiq*. For *muzaki*, the identification may be relevant for deducting or reducing the amount of tax payment. On the distribution side, such identification is important to avoid redundant disbursement so that it can attain equitable and fair *zakat* distribution. Such identification is also important to monitor the progress of *zakat* recipient and the effectiveness of the *zakat* program.

Several studies also have revealed the importance of management information system (MIS) in the non-profit organization (NGO) such as *zakat* institution. Dash & Mishra (2014) argue that MIS can ease NGO in data documentation and analysis, performance monitoring and strategic decision making. Moreover, MIS will help NGO to increase credibility and accountability by presenting their activities to the public. It might also help in safeguarding the four pillars of ethics in NGO, namely disclosure, transparency, avoidance of conflict of interest, and oversight as elaborated by (White, 1952)

Moreover, management information system can ease the *zakat* administrator to run the operation efficiently as it can lower the cost of dissemination of information (O'Connor & Martinsons, 2006). In this regard, management information system can reduce unnecessary cost by enlarging the usage of internet and online transaction system. This is absolutely relevant to the fact that the amount of *zakat* that can be utilized to organize *zakat* is limited to one eight in accordance with Hanafi's ruling. Therefore, integrating management information system to the *zakat* operation is essential to enhance the *zakat* management system.

The Emergence and Development of SIMBA

The current *zakat* act has several direct implications to the national *zakat* management system.

i. First, it provides the legal and political assurance from the state for every Moslem to perform *zakat* under positive law. It also emphasizes the role of *zakat* in national socio-economic development, especially in bringing public welfare and social justice (Constitutional Court of The Republic Indonesia, 2012).
ii. Secondly, it acknowledges equally the role of the state and civil society in administering *zakat*. It

does not impose *zakat* to the Moslem or perceive it as state income, but put government budget to enhance the benefits of *zakat* to the society. On the other hand, it recognises the role of civil society both in administering and supervising *zakat* activities. Nasar (2014) argues that *zakat* management in Indonesia is not considered as totalitarianism where the state is the only legitimate body to manage *zakat* and not also considered as secular where the practice of *zakat* left behind to the society without any support from the government; Lastly,

iii. It induces to the unified and integrated *zakat* management system whereby *zakat* institutions conduct their activities under a standard regulation and integrate their report into an agreed platform to create a national report and database. *Mustahik* database integration is one of the benefits of a unified and integrated *zakat* management system that can avoid redundant distribution, prevent inequality disbursement between regions, and become a baseline of performance measurement or policymaking (Beik, 2014). This aligns with Ahmed (2004) states that the performance of *zakat* institution to combat poverty hinges on the information exchange in which the *zakat* institution can gain trust from the customer and increase its credibility.

Kustiawan (2014) and Hafidhuddin *et. al.* (2015) articulates the *zakat* act No.23/2011 into a house building block as illustrated in Figure 1. which is also adapted in the years strategic planning of national *zakat* management (BAZNAS, 2016a).

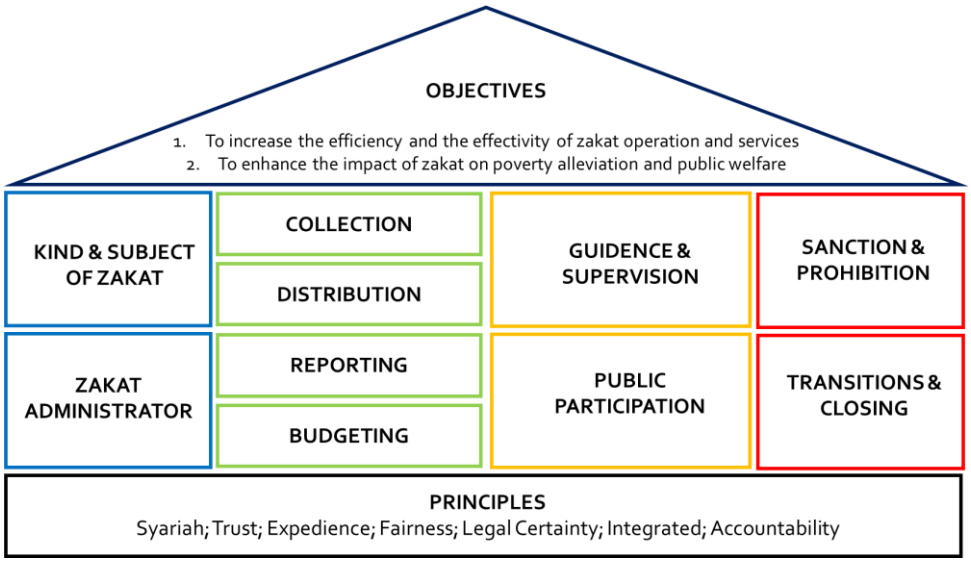


Figure 1. *Zakat* Management System Building Blocks

Source: BAZNAS (2016a:26)

The emergence of SIMBA should be considered as a logical consequence of *Zakat* Act No. 23/2011. This act assigns BAZNAS as the leader of national *zakat* management. Having this role, BAZNAS is charged with

several tasks as identified below that will be impossible to conduct without a robust national *zakat* information system[1]:

(i) To implement the principles of *zakat* act, *i.e*. sharia-compliant, trust, expedience, justice, legal certainty, integrated, and accountable to the national *zakat* management system;
(ii) To increase the service effectiveness and efficiency of national *zakat* management;
(iii) To eradicate poverty by optimizing the *zakat* fund utilization and consider some principles such as equity and fairness in each region;
(iv) To provide a *zakat* transaction receipt for payers that can be used as a tax deduction; lastly
(v) To conduct national *zakat* hierarchical reporting system.

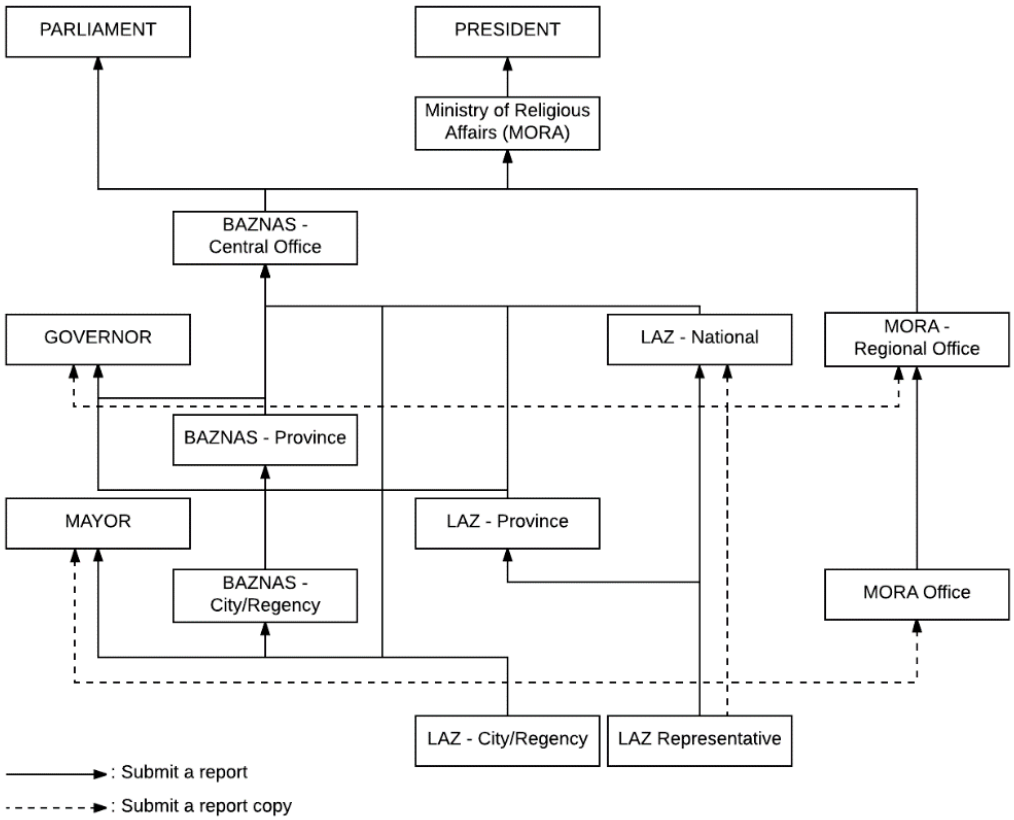


Figure 2. National Zakat Reporting Structure

Source: BAZNAS (2016a: 33)

On October 2012, with the help of Bank Rakyat Indonesia Syariah under its CSR scheme, BAZNAS launched SIMBA as the national *zakat* management information system (Republika, 2012). SIMBA has two main

[1] The tasks are derived from (Zakat Act, 2011). *See* article 1,2,3,6,7,15,19,23,26,28, and 29

functions: recording collection and disbursement of *zakat* and creating a report based on the submitted data which works under the *zakat* information management system. In addition, SIMBA also consists of supporting organizational information system that maintains several information systems such as finance, human resource, logistic, public affairs and others. It is a web-based system that connects each BAZNAS office in every region to BAZNAS headquarter in Jakarta. Therefore, this feature allows SIMBA to create a real-time online report of national *zakat* activities at each level in every region. This model is even more suitable to produce the national *zakat* hierarchical report as mandated by the *zakat* act. Figure 2 shows the structure of the national *zakat* reporting system.

Besides representing a reporting structure, above also shows some of the national *zakat* management system stakeholders; such as president, MORA, parliament, governor, and others. Nonetheless, the main stakeholders of *zakat* operation are *muzaki* and *mustahik* that directly involved in *zakat* activities. Therefore, the development of SIMBA is aimed to ultimately benefiting them. For instance, in the front end, SIMBA connects with banks, e-commerce, banks, payment gateway, and other payment points to easing both to collection and disbursement activities. In the backend, all of the data submitted to SIMBA are used to create reports that latter can be utilized for strategic planning, decision making, research, and public disclosure.

The complexity and huge amount of data within time and resource constraint make it impossible to create a national *zakat* report manually unless utilising a robust national *zakat* information system in each regional office that integrated together with the central office in Jakarta. Having said that, BAZNAS has put information system and technology as one out of six aspects in the *Zakat* Strategic Planning and Roadmap 2016-2020. The plan expects that all *zakat* institutions including 514 regional BAZNAS and LAZ have implemented SIMBA by the end of 2017. However, the dissemination of this technology thus far has reached only 108 out of 514 office in the respective cities (BAZNAS, 2017). Although only about 21% of BAZNAS regional offices that have been implemented SIMBA, it is necessary to measure the contribution of this breakthrough model to the national *zakat* management system.

RESEARCH DESIGN

A number of research design methods are available; exploratory research, explanatory research, descriptive research, survey research and case study (Sekaran & Bougie, 2013). This research is constructed as an exploratory study which aims at exploring participants' views on the operation of *zakat* management information system. In addition, since it focuses on a particular organisation, that is BAZNAS, this study should also be considered as a case study. Furthermore, since further data analysis on the primary data through econometrics specification is conducted, this study also benefits from being an explanatory study.

RESEARCH STRATEGY

This study applies two different approaches as its strategies to answer the research questions. An inductive approach is used to measure the impact of SIMBA on the national *zakat* collection. This study observes the

existence or non-existence of SIMBA in 85 cities and attempts to offer a bottom-up abstraction of its impact on the national *zakat* collection together with some other control variables. On the other hand, the deductive approach is applied to measure the electronic service quality perceived by the SIMBA operator's opinions at nation-wide level.

ECONOMETRICS MODEL SPECIFICATION AND VARIABLES

There are six key data in this research to measure the impact of SIMBA on the national *zakat* collection, namely total *zakat* and *infaq* collection (*collection*), total local population, gross domestic regional product (*GDRP*), GINI coefficient (*GINI*), Human Development Index (*HDI*) and the existence of SIMBA in respective city, as depicted in Table 1. All these data are in local level creating 170 observations-strongly balanced panel data (85 regions during 2014-2015). Nonetheless, due to data availability constraints in some provinces where GINI coefficient for some cities is not found, GINI coefficient of its respective provinces are used to fill the gap as a proxy.

Table 1. Variables Description

Variables	Notation	Source	Unit
Total Zakat and Infaq Collection	*LogCollection*	BAZNAS	Log of Collection in Indonesian rupiah
Total Local Population	*LogPop*	BPS	Log of Population Number
Human Development Index	*HDI*	BPS	Index (1 to 100, 100=the highest score)
Real Gross Domestic Regional Product (GDRP) percapita	*GDRPcap*	BPS	Indonesia million rupiah per capita (million IDR/cap)
GINI Coefficient	*GINI*	BPS	Index (0 to 1, 1=the highest score)
SIMBA Implementation	*SIMBA*	BAZNAS	Dummy varable:1 if SIMBA exist; 0 otherwise

Source: prepared by Author.

Accordingly, the econometric model for this research is a linear regression as illustrated below:

$$LogCollection_{it} = \alpha + \beta_1 LogPop_{it} + \beta_2 HDI_{it} + \beta_3 GDRPcap_{it} + \beta_4 GINI_{it} + \beta_5 SIMBA_{it} + \varepsilon_{it} \quad (1)$$

where, α: constant; i: city; t: year;β: slope; ε: error term, the rest of the variables are defined in Table 1.

RESEARCH METHOD FOR DATA COLLECTION

Questionnaire Survey Design

The questionnaire is structured with close-ended questions consisting of four parts. Part I screens the respondents that do not have any experience in using SIMBA, while Part II measures respondents' interaction with SIMBA, including usage intensity and training participation. Part III consists of 4 main questions that measure the importance and perception of e-service quality dimensions; overall quality; perceived

value; and loyalty of customers towards SIMBA. The responses to the questions regarding e-service quality dimensions and customer loyalty are recorded using 5-point Likert scale, whereas the SIMBA overall quality and the perceived value are recorded under 10-point Likert scales ranging from poor to excellent. Part IV records the demographic information of each of the respondents. The questionnaire can be viewed in Table 2.

Differ from the initial service quality model developed by Parasuraman *et. al.* (1988) that is used to measure people-delivered service, the e-service quality is developed by Parasuraman *et. al.* (2005) to measure service that is delivered electronically via web sites. This questionnaire has been widely adapted to other virtual web-based services such as social media service of university library Kim (2015) or e-government service website Jun *et. al.* (2009). In this study, the questionnaire is developed and adapted to *zakat* operation realm as a first draft questionnaire. Then, this draft is used as an initial document in a focus group discussion that involved one head division of BAZNAS IT & Reporting; one IT manager, and two BAZNAS system analysts, as they are involved in initial SIMBA development and understand all the features of SIMBA. The focus group discussion has contributed to the questionnaire mainly in adapting and translating the initial e-service quality statements into *zakat* operation realm. Furthermore, there were 13 people involved in a pilot test which helped to improve the semantical translation of several questions, as the questionnaire is administered in the Indonesian language. The modified e-service quality statements that are used in this study are depicted in Table 2.

Table 2. Modified E-Service Quality Statements

Dimension	Item	Modified E-Service Quality Statement for This Study
Efficiency	EFF1	SIMBA makes it easy to find which service I need
	EFF2	SIMBA makes it easy to get anywhere on the site
	EFF3	SIMBA enables me to complete a zakat transaction quickly
	EFF4	Information provided in SIMBA is well organized
	EFF5	SIMBA loads its pages fast
	EFF6	SIMBA is simple to use
	EFF7	SIMBA enables me to get on to it quickly
	EFF8	SIMBA is well structured
System Availability	SYS1	SIMBA is always available fot service
	SYS2	SIMBA launches and runs right away
	SYS3	The pages of SIMBA display normally
	SYS4	There is no error occurred during using SIMBA
Fulfilment	FUL1	SIMBA offers service when necessary data and materials are submitted
	FUL2	SIMBA processes transaction within a suitable time frame
	FUL3	SIMBA provides information that I expect quickly
	FUL4	SIMBA gives reliable service
	FUL5	Service that available in SIMBA is fully accessible and functioned well
	FUL6	SIMBA is truthful about its offered services
	FUL7	SIMBA makes accurate promises about its service
Privacy	PRI1	SIMBA protects muzaki and mustahik personal identity

Dimension	Item	Modified E-Service Quality Statement for This Study
	PRI2	SIMBA does not leak the muzaki and mustahik information that I input to public
	PRI3	SIMBA protects my submitted materials' information

Source: Prepared by Author.

Then, the questionnaire was conducted using an online platform called 'surveymonkey' starting from 9 August to 14 August 2017. It is necessary to mention that the respondents in this study are the operator of SIMBA as the end-user of the system. Hence, the population of the survey is all SIMBA operator in Indonesia. The survey closed with 193 respondents giving their answers to the self-administered questionnaires; however, only 133 questionnaires deemed to be useful for analysis due to non-completion of the rest.

Secondary Data Collection

Two primary data sources for the secondary data used in this study are from Indonesian Office for Statistics (BPS RI) and BAZNAS. The year 2014-2015 is chosen in this study because this period represents the best availability of national *zakat* collection as well as the availability of the control variables (*i.e.* population, GINI, HDI, and GDP per capita). Consequently, this research is unable to use data from all regions. Having cleaned all the data, eventually only 85 regions that have proper data. Consequently, this research in total has 170 observations-strongly balanced panel data (85 regions during 2014-2015).

Multiple Regression Analysis

This method is applied to measure the impact of more than one independent variables on the dependent variables (Sekaran & Bougie, 2013). In this research, it is used to measure the 22 multiple items in four different dimension of e-service quality towards the dependent variables as illustrated in Figure 3.

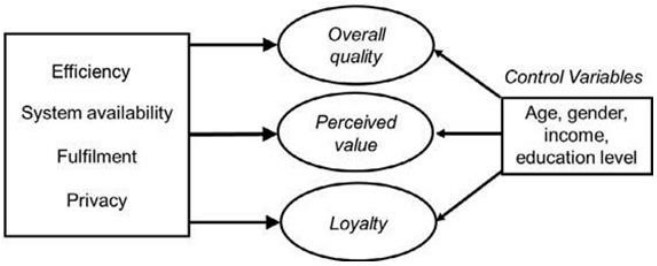


Figure 3. E-Service Quality Model

Source: Santouridis et. al. (2012)

RESULTS AND DISCUSSION

The Regression Results

The initial analysis commences in this section with the regression analysis in measuring the impact of SIMBA on the national *zakat* collection, for which the key findings are shown in Table 3. As can be seen, all variables are statistically significant in explaining the log collection per capita of *zakat* and *infaq* except the GDRP per capita and GINI coefficient. There are 170 observations captured in the regression model and resulting *R*-squared is at 0.409 which implies that the model in this research can explain about 40.9 percent of the variation observed, which is quite satisfactory. The implementation of SIMBA is significant at 1 percent level and has coefficient at 0.3068. It means that SIMBA significant in positively

increase the national *zakat* and *infaq* collection by 0.3068 in magnitude. This relevant with findings in Wahab & Rahman (2013) that argues that information technology can increase the performance of zakat institutions, in this regard is zakat collection

Table 3. Regression Results
Dependent Variable: *Zakat* Collection

Variables	Model1
LogPopulation	-0.9503***
	(0.0942)
GDRPCap	0.0003
	(0.0003)
GINI	1.6777
	(1.057)
HDI	0.0210*
	(0.0106)
SIMBA	0.3068***
	(0.1072)
Constant	6.7968***
	(0.9220)
Observations	170
R-squared	0.409

Notes: Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Moreover, the log population is also significant at 1 percent but has a negative coefficient. This can be interpreted that population brings a burden instead of a favour to the total collection. A further explanation can be emanated from the fact that 70 out of 85 cities observed in this study are outside Java, where the poverty rate is high (Wibisono, 2017). Other than that, there are still a lot of people that do not want to pay zakat via zakat institutions but directly to the poor as stated by Teten Kustiawan, BAZNAS Managing Director, in Republika (2013). In addition, the HDI that used as the proxy of human resources quality in respective regional BAZNAS office is significant at 10% level. Nonetheless, the magnitude of this proxy is quite low (0.021) to the dependent variable. However, it implies that one unit increase in HDI can increase *zakat* collection by 0.021.

Table 3 shows the GRDP per capita is not significant which means statistically there is no correlation between *zakat* and *infaq* collection with GDRP per capita. Figure 4 can briefly illustrate that the trend of *zakat* collection in the last 15 years is not correlated with the growth of national GDP. This can perhaps be explained by people's willingness to pay rather than searching for the ways they can avoid or pay the minimum. Lastly, the GINI coefficient is also not significant. One may argue that the wealth disparity in the observed cities perhaps increases the collection. Further research is needed to examine this phenomenon.

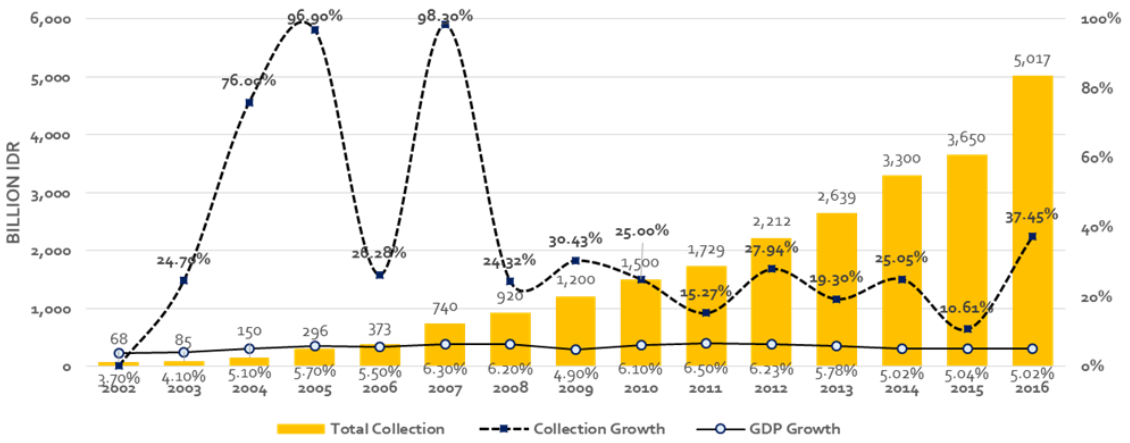


Figure 4. The National Growth of Zakat Collection

No	Measure	Label	Item	Frequency	Percent
1	Gender	1	Male	81	60.9%
		0	Female	52	39.1%
			Total	133	100.0%
2	Age	1	< 20 years	1	0.8%
		2	20-25 years	32	24.1%
		3	26-30 years	53	39.8%
		4	31-35 years	33	24.8%
		5	36-40 years	11	8.3%
		6	41-45 years	2	1.5%
		7	> 55 years	1	0.8%
			Total	133	100.0%
3	Marriage	0	Single	52	39.1%
		1	Married	81	60.9%
			Total	133	100.0%
4	Education	1	High School	24	18.0%
		2	Diploma	10	7.5%
		3	Bachelor	93	69.9%
		4	Postgraduate	6	4.5%
			Total	133	100.0%
5	Salary	1	less than IDR 1.000.000	21	15.8%
		2	IDR 1.000.000 - IDR 1.999.999	60	45.1%
		3	IDR 2.000.000 - IDR 2.999.999	30	22.6%
		4	IDR 3.000.000 - IDR 3.999.000	19	14.3%
		5	IDR 4.000.000 - IDR 4.999.000	2	1.5%
		6	more than IDR 5.000.000	1	0.8%
			Total	133	100.0%
6	Usage Intensity	1	Daily	92	69.2%
		2	Weekly	15	11.3%
		3	Monthly	22	16.5%
		4	Yearly	4	3.0%
			Total	133	100.0%
7	Training Participation	1	Never	6	4.5%
		2	1 time	43	32.3%
		3	2-4 times	71	53.4%
		4	5 or more	13	9.8%
			Total	133	100.0%
8	Location (Residence)	1	Sumatra	47	35.3%
		2	Jawa	41	30.8%
		3	Kalimantan	16	12.0%
		4	Sulawesi	19	14.3%
		5	Bali dan Nusa Tenggara	8	6.0%
		6	Maluku dan Papua	2	1.5%
			Total	133	100.0%

Table 4. Respondent Demographic Distribution

Source: prepared by Author.

Respondents Characteristics

Out of about 240 total SIMBA operator throughout the country, 193 have responded the questionnaire with only 133 responses that are valid for data analysis. Table 4 summarises the respondent demographic distribution. The respondents consist of 60.9 percent male and 39.1 percent female. Moreover, the respondents of this study can be categorized into four generations in referring to PewResearchCenter (2010); Alexander & Sysko (2012); and (Deloitte, 2015). The first group is baby boomer who born before 1965 (age>55 years). This group is represented by 0.8 percent of in the sample. Secondly, about

9.8 percent respondents who are born in 1962-1982 (age: 36-45 years) who are usually called as generation X. The most dominant respondent's group (88.7 percent) is millennial or generation Y that is born in 1982-2002 (age: 20-35 years). The last group is Generation Z that is born after 2002 or aged less than 20 years, which is only 0.8 percent of the respondents.

In addition, similar to gender distribution, most respondent (60.9 percent) the, while the singles constitute 39.1 percent of the sample. As can be seen in Table 4, most of the respondents are highly educated with 69.9 percent have a bachelor degree and 4.5 percent have postgraduate degrees indicating a good sign for their capability in comprehending and responding to the questionnaire. Only 7.5 percent and 18 percent of the respondents have diploma level and high school education, respectively.

As for skills training, 53.4 percent of respondent attended SIMBA training for 2 to 4 times and 9.8 percent attended more than 5 training sessions. About 32.3 percent respondents trained at least once and only 4.5 percent of the participants have never been in training throughout their career. Moreover, most of the respondents have an intensive interaction with SIMBA as 69.9 percent use SIMBA in the daily basis and 11.3 percent on weekly basis. Only 16.5 percent and 3 percent of respondent use SIMBA every month and year respectively.

It should be noted from Table 4 that most of those high education level; intensive training; and high workload respondents are paid poorly: about 15.8 percent are paid below IDR 1,000,000 and 45.1 percent earn between IDR 1,000,000 to IDR 1,999,999. For the record, 35.3 percent respondent live in Sumatra and 30.8 percent live in Java, where the average minimum wage is IDR 2,019,236, (Deny, 2016) which implies that they are underpaid reflecting the nature of the economy in the country. Bearing in mind that 60.9 percent respondent are married which makes this situation even more difficult for them as the limited salary can be a huge constraint in their life. In this sense, BAZNAS should pay attention to it in order to prevent human resources drain out.

Table 5. E-Service Quality Dimension and Dependent Variables Descriptive Statistics

	Factors	Number of items	Mean		Mean of Summed Score		Std Deviation (mean)	
			Impo.	Perf.	Impo.	Perf.	Impo.	Perf.
E-S-Qual Dimensions	Efficiency	8	4.43	4.33	35.43	34.61	0.41	0.35
	System Availability	4	4.24	4.18	16.96	16.71	0.62	0.52
	Fulfillment	7	4.41	4.35	30.87	30.47	0.33	0.27
	Privacy	3	4.55	4.46	13.65	13.37	0.26	0.16
Criterion Variables	Overall Quality	1	8.45		8.45		1.51	
	Perceived Value	4	8.57		34.29		0.52	
	Loyalty Intentions	5	4.63		23.15		0.28	

Source: prepared by Author.

Descriptive Statistics & Gap Analysis

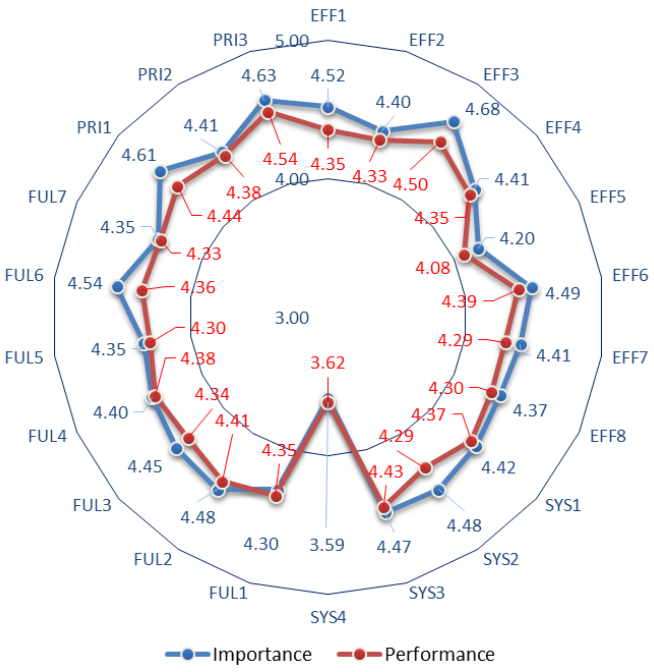
Table 5 describes and summarises the respondent' responses towards the questionnaire. As can be seen from the responses, 22 e-service quality item in 5 Likert scores are 4.41 for importance and 4.33 for performance. It also shows that

privacy is the dimension with the highest mean scores both for the importance and performance at 4.55 and 4.46 respectively. Moreover, the 22 items mean summed score is 96.92 for importance and 95.15 for performance, with a possible range of 22 to 110. The means of overall quality and perceived value are 8.45 and 8.57, with a possible range of 1 to 10 while the means of respondent' loyalty intentions is 4.63, with a possible score of 1 to 5. The mean of summed score for each criterion are 8.45; 34.29; and 23.15, respectively. The table also provides the means of standard deviation for each dimension and criterion variables.

The e-service quality questionnaire can capture the gap between respondent's expectation and the perceived performance of each e-service quality item. Gap analysis visualization can help to analyse which item or dimension that is perceived important, performed well or bad, and how much is the gap. This study provides two visualization model which are radar chart and quadrant chart.

Figure 5 illustrates that most of the item's performance scores are lower than its importance scores. Only item SYS4 (+0.03) and FUL1 (+0.05) that exceed their importance score. SYS4 represents that there is no error during its service while FUL1 represents that SIMBA offers service after necessary data is submitted. On the contrary, the largest gap perceived by the operator is in item FUL6 (-0.18) and SYS2 (-0.19). FUL6 score illustrates that SIMBA is not quite truthful about its offered services while SYS2 score illustrates that SIMBA is perceived does not launch and run right away once it is accessed.

Figure 5. Radar Chart of 22 Items' Importance and Performance Score



Adapting Lynch *et.al.* (1996) model in applying quadrant chart for strategic planning, this study creates the four quadrants by putting the mean of importance score as *x*-value and putting the gap between the importance and performance score as the *y*-value. Having said that, the first quadrant is an

area where the item is perceived important and scores high while quadrant two is an area with high importance but low score. Moreover, quadrant three is where item is perceived not so important and scores low whereas quadrant for is an area with high score but low importancy. Figure 6 ilustrates the plot of each item in the quadrant chart.

Figure 6. E-Service Quality Quadrant Chart

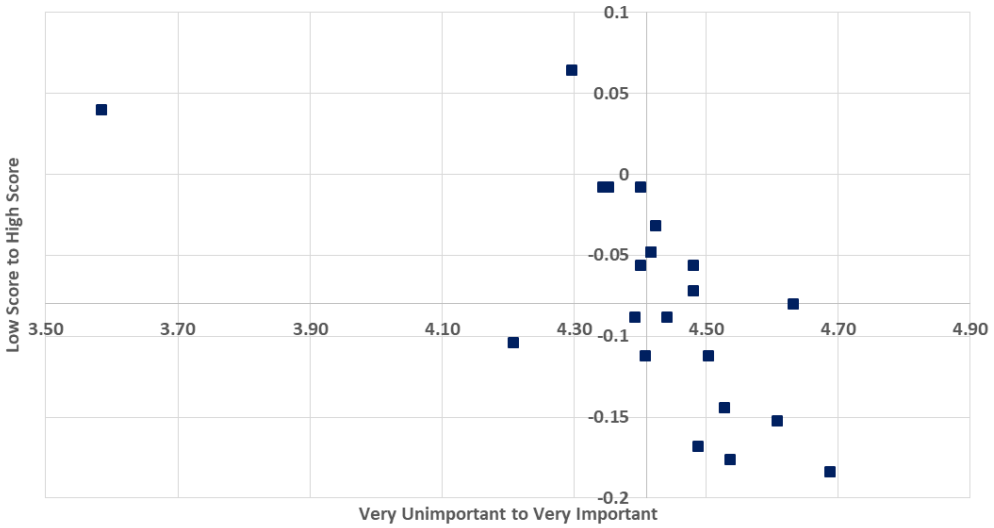


Table 6 summarizes the recommendation for each item. BAZNAS as the main stakeholder should retain items in quadrant one which is perceived important and have a high score. Those items are the information structure, service availability, website display, and SIMBA performance in safeguarding the information that is submitted to it. Moreover, there are ten items in quadrant two that need to be improved in terms of its performance in contrast to its importance. In addition, there are six items in quadrant four that have been perceived good but less important which essentially need to be repositioned in its importance value. Lastly, in Pareto optimality, BAZNAS should not focus or ignore EFF5 and EFF8 in quadrant four as they have low score while not perceived important by the respondent.

Table 6. Items and Recommendations for Each Quadrant

Quadrant	Recommendations	Items
1	Retain	EFF4; SYS1; SYS3; PRI2
2	Improve Performance	EFF1; EFF6; EFF7; FUL2; FUL3; PRI3; SYS2; PRI1; FUL6; EFF3
3	Ignore or Improve Importance	EFF5; EFF8
4	Reposition	EFF2; FUL1; FUL4; FUL5; FUL7; SYS4

Source: prepared by Author.

Reliability

Cronbach's Alpha Statistical Test is applied to measure data reliability using SPSS 20 program. With a possible range from 0 to 1, the higher result of this test represents the higher data reliability it offers. Table 7**Error! Reference source not found.** shows that the overall Cronbach's Alpha coefficient is 0.973 and for each dimension is ranging from 0.829 to 0.954 which is higher than 0.7, the minimum value to accept that the data is reliable (Nunnally & Bernstein, 2013). The result of this test is also in the range of the previous study by Kim (2015) who studied e-s quality in library service and the original e-s quality questionnaire by Parasuraman *et. al*. (2005). The test shows that there is not any item that has a low correlation to the total score which implies that it has high internal consistency.

Table 7. Reliability Statistics of E-Service Quality Dimensions

E-S-Qual Dimensions	Number of items	Cronbach's Alpha
Overall Dimension	22	0.973
Efficiency	8	0.946
System Availability	4	0.829
Fulfillment	7	0.954
Privacy	3	0.887

Source: prepared by Author.

Validity

Factor analysis is conducted in this study to measure the data validity. It is a multivariate method that ensures the dimension in the instrument has accurately represented the theory or concept that is applied the study, which is e-service quality. It also indicates whether the item in a particular dimension is already fit and appropriate or should it be categorised under other dimensions (Sekaran & Bougie, 2013). In this sense, factor analysis is conducted whether the 22 items of e-service quality has correctly categorised under their specific dimensions. Each item is considered valid if the Kaiser-Meyen-Olkin (KMO) sampling adequacy exceeds 0.5 while the Bartlett's Test of Sphericity is significant (p-value < 0.05; *see*: Yusoff, 2010). Other studies on service quality use a stricter threshold on KMO results such as Mohd-Shariff (2013) and Kim (2015) which use 0.6 and 0.7 respectively as the threshold on their study.

Table 8. displays the result of KMO and The Barlett's test. The overall KMO value in this study is 0.943 whereby the each dimension's KMO value ranges from 0.698 to 0.924 which exceeds 0.5 and 0.6, the minimum threshold for KMO test that used by Yusoff (2010) and Mohd-Shariff (2013). Even, it still exceeds 0.7 the threshold used by Kim (2015). Only privacy dimension that is slightly under 0.7 at 0.698 which is still tolerable. In addition, all dimension are significant on the Bartlett's Test of Sphericity with p-value less than 0.05.

Table 8. Kaiser-Meyer-Olkin and The Bartlett's Test Result

E-S-Qual Dimensions	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-Square	df	Sig.
Overall Dimensions	.943	3144.658	231	.000***
Efficiency	.923	908.127	28	.000***
System Availability	.774	252.937	6	.000***
Fulfillment	.924	964.451	21	.000***
Privacy	.698	245.123	3	.000***

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Mann-Whitney U Test

Mann-Whitney U Test is applied to identify whether there is a significant difference between across control variables, such as gender and marital status groups, towards the perceived performance of the 22 items in e-service quality questionnaire and the SIMBA' overall quality, perceived value, and loyalty intention.

Table 9. Mann-Whitney U Test (Gender-1)

Item	Gender	N	Mean Rank	Sig.	Item	Gender	N	Mean Rank	Sig.	Item	Gender	N	Mean Rank	Sig.	Item	Gender	N	Mean Rank	Sig.
	Female	52	65.18			Female	52	65.61			Female	52	70.46			Female	52	68.03	
EFF1	Male	81	68.17	0.628	**EFF7**	Male	81	67.9	0.714	**FUL1**	Male	81	64.78	0.357	**FUL6**	Male	81	66.34	0.783
	Total	133				Total	133				Total	133				Total	133		
	Female	52	63.98			Female	52	68.6			Female	52	67.98			Female	52	67.34	
EFF2	Male	81	68.94	0.425	**EFF8**	Male	81	65.98	0.676	**FUL2**	Male	81	66.37	0.790	**FUL7**	Male	81	66.78	0.929
	Total	133				Total	133				Total	133				Total	133		
	Female	52	64.27			Female	52	68.12			Female	52	65.18			Female	52	63.48	
EFF3	Male	81	68.75	0.440	**SYS1**	Male	81	66.28	0.766	**FUL3**	Male	81	68.17	0.629	**PRI1**	Male	81	69.26	0.329
	Total	133				Total	133				Total	133				Total	133		
	Female	52	66.14			Female	52	67.21			Female	52	67.42			Female	52	64.95	
EFF4	Male	81	67.55	0.821	**SYS2**	Male	81	66.86	0.955	**FUL4**	Male	81	66.73	0.910	**PRI2**	Male	81	68.31	0.575
	Total	133				Total	133				Total	133				Total	133		
	Female	52	69.01			Female	52	69.29			Female	52	67.56			Female	52	63.24	
EFF5	Male	81	65.71	0.606	**SYS3**	Male	81	65.53	0.537	**FUL5**	Male	81	66.64	0.883	**PRI3**	Male	81	69.41	0.281
	Total	133				Total	133				Total	133				Total	133		
	Female	52	68.76			Female	52	60.13											
EFF6	Male	81	65.87	0.636	**SYS4**	Male	81	71.41	0.086										
	Total	133				Total	133												

Gender Group

Table 9 displays that there is no gender impact towards the perceived performance of 22 items in e-service quality as there none of the items that are significant at 10% confidence level. Hence, this data support that there is no significant difference between genders in perceiving the performance of SIMBA.

In a similar manner, findings in Table 10 support that there is no significant difference between male and female respondents in perceiving SIMBA overall quality, perceived value, and loyalty intention. Accordingly, BAZNAS should not treat gender differently in developing and enriching SIMBA in the future.

Table 10. Mann-Whitney U Test (Gender 2)

Criterion	Gender	N	Mean Rank	Sig.	Gender	SEX	N	Mean Rank	Sig.
	Female	52	69.35			Female	52	66.56	
QUA1	Male	81	65.49	0.558	LOY1	Male	81	67.28	0.890
	Total	133				Total	133		
	Female	52	69.06			Female	52	63.84	
VAL1	Male	81	65.68	0.608	LOY2	Male	81	69.03	0.369
	Total	133				Total	133		
	Female	52	70.31			Female	52	65.85	
VAL2	Male	81	64.88	0.409	LOY3	Male	81	67.74	0.736
	Total	133				Total	133		
	Female	52	67.39			Female	52	64.28	
VAL3	Male	81	66.75	0.922	LOY4	Male	81	68.75	0.359
	Total	133				Total	133		
	Female	52	69.78			Female	52	69.13	
VAL4	Male	81	65.22	0.483	LOY5	Male	81	65.63	0.428
	Total	133				Total	133		

Marital Status Group

Table 11 supports that there is no marital status impact on the perceived performance of 22 items in e-service quality. Nonetheless, Table 12 shows that there are significant differences between single and married respondents at 5% significance level for LOY1 (71.17) and at 10% for LOY2 (70.77); and LOY4 (70.43). They show that married respondents are more loyal towards SIMBA than single respondents. They are more tend to say positive things, recommend other, and use SIMBA again in the future.

Table 11. Mann-Whitney U Test (Marital Status-1)

Item	Marriage	N	Mean Rank	Sig.	Item	Marriage	N	Mean Rank	Sig.	Item	Marriage	N	Mean Rank	Sig.	Item	Gender	N	Mean Rank	Sig.
	Single	52	66.31			Single	52	61.73			Single	52	63.54			Single	52	63.22	
EFF1	Married	81	67.44	0.854	EFF7	Married	81	70.38	0.167	FUL1	Married	81	69.22	0.357	FUL6	Married	81	69.43	0.312
	Total	133				Total	133				Total	133				Total	133		
	Single	52	65.21			Single	52	61.92			Single	52	62.03			Single	52	62.82	
EFF2	Married	81	68.15	0.637	EFF8	Married	81	70.26	0.183	FUL2	Married	81	70.19	0.178	FUL7	Married	81	69.69	0.268
	Total	133				Total	133				Total	133				Total	133		
	Single	52	66.85			Single	52	63.59			Single	52	64.81			Single	52	65.38	
EFF3	Married	81	67.1	0.965	SYS1	Married	81	69.19	0.362	FUL3	Married	81	68.41	0.560	PRI1	Married	81	68.04	0.654
	Total	133				Total	133				Total	133				Total	133		
	Single	52	65.58			Single	52	65.66			Single	52	66.51			Single	52	62.91	
EFF4	Married	81	67.91	0.706	SYS2	Married	81	67.86	0.724	FUL4	Married	81	67.31	0.896	PRI2	Married	81	69.62	0.264
	Total	133				Total	133				Total	133				Total	133		
	Single	52	69.22			Single	52	67.63			Single	52	66.52			Single	52	62.68	
EFF5	Married	81	65.57	0.568	SYS3	Married	81	66.59	0.864	FUL5	Married	81	67.31	0.899	PRI3	Married	81	69.77	0.216
	Total	133				Total	133				Total	133				Total	133		
	Single	52	68.81			Single	52	65.71											
EFF6	Married	81	65.84	0.627	SYS4	Married	81	67.83	0.747										
	Total	133				Total	133												

Table 12. Mann-Whitney U Test (Marital Status-2)

Criterion	Marriage	N	Mean Rank	Sig.	Criterion	Marriage	N	Mean Rank	Sig.
	Single	52	65.37			Single	52	60.5	
QUA1	Married	81	68.05	0.683	**LOY1**	Married	81	71.17	0.043**
	Total	133				Total	133		
	Single	52	65.9			Single	52	61.13	
VAL1	Married	81	67.7	0.785	**LOY2**	Married	81	70.77	0.096*
	Total	133				Total	133		
	Single	52	69.22			Single	52	62.6	
VAL2	Married	81	65.57	0.579	**LOY3**	Married	81	69.83	0.197
	Total	133				Total	133		
	Single	52	66.59			Single	52	61.66	
VAL3	Married	81	67.27	0.919	**LOY4**	Married	81	70.43	0.072*
	Total	133				Total	133		
	Single	52	68.14			Single	52	66.71	
VAL4	Married	81	66.27	0.773	**LOY5**	Married	81	67.19	0.915
	Total	133				Total	133		

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Krusskall-Wallis

As a non-parametric test, Krusskall Wallis test is applied to measure statistical difference across age group, education level, salary, usage intensity, training participation, and location towards e-service quality perceived performance and SIMBA' overall quality, perceived value, and loyalty intention by the respondents. Since these control variables come more than two options instead of Mann-Whitney U test, Krusskall Wallis test is used

Table 13. Krusskall-Wallis (Age Group-1)

Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.
	< 20	1	97.50			< 20	1	57.00			< 20	1	40.00			< 20	1	98.50			< 20	1	44.00			< 20	1	94.00	
	20-25	32	59.13			20-25	32	64.16			20-25	32	61.27			20-25	32	56.95			20-25	32	59.80			20-25	32	58.47	
	26-30	53	71.18			26-30	53	72.75			26-30	53	71.80			26-30	53	74.87			26-30	53	72.11			26-30	53	72.83	
EFF1	31-35	33	59.20	0.159	**EFF5**	31-35	33	58.29	0.634	**SYS1**	31-35	33	63.42	0.690	**FUL1**	31-35	33	62.95	0.271	**FUL5**	31-35	33	62.53	0.554	**PRI2**	31-35	33	62.42	0.441
	36-40	11	82.09			36-40	11	72.59			36-40	11	70.09			36-40	11	64.27			36-40	11	74.82			36-40	11	72.91	
	41-45	2	97.50			41-45	2	83.25			41-45	2	70.25			41-45	2	69.50			41-45	2	72.25			41-45	2	65.00	
	> 55	1	97.50			> 55	1	57.00			> 55	1	100.50			> 55	1	98.50			> 55	1	100.50			> 55	1	94.00	
	Total	133				Total	133				Total	133				Total	133				Total	133				Total	133		
	< 20	1	42.50			< 20	1	38.00			< 20	1	43.50			< 20	1	37.00			< 20	1	97.50			< 20	1	90.00	
	20-25	32	58.75			20-25	32	62.63			20-25	32	64.34			20-25	32	59.98			20-25	32	57.97			20-25	32	53.80	
	26-30	53	74.22			26-30	53	74.31			26-30	53	70.27			26-30	53	72.35			26-30	53	72.26			26-30	53	74.75	
EFF2	31-35	33	59.80	0.189	**EFF6**	31-35	33	61.09	0.457	**SYS2**	31-35	33	61.73	0.738	**FUL2**	31-35	33	64.50	0.562	**FUL6**	31-35	33	66.59	0.530	**PRI3**	31-35	33	66.21	0.143
	36-40	11	71.05			36-40	11	69.91			36-40	11	75.91			36-40	11	71.82			36-40	11	63.32			36-40	11	67.64	
	41-45	2	100.00			41-45	2	53.75			41-45	2	56.75			41-45	2	53.00			41-45	2	68.50			41-45	2	59.25	
	> 55	1	100.00			> 55	1	38.00			> 55	1	98.50			> 55	1	95.50			> 55	1	97.50			> 55	1	90.00	
	Total	133				Total	133				Total	133				Total	133				Total	133				Total	133		
	< 20	1	91.00			< 20	1	44.50			< 20	1	37.00			< 20	1	40.50			< 20	1	42.00						
	20-25	32	62.75			20-25	32	58.69			20-25	32	69.69			20-25	32	58.67			20-25	32	55.98						
	26-30	53	71.11			26-30	53	71.54			26-30	53	71.04			26-30	53	72.56			26-30	53	74.70						
EFF3	31-35	33	62.70	0.648	**EFF7**	31-35	33	64.18	0.549	**SYS3**	31-35	33	60.58	0.642	**FUL3**	31-35	33	64.08	0.463	**FUL7**	31-35	33	60.73	0.141					
	36-40	11	63.73			36-40	11	75.59			36-40	11	61.64			36-40	11	74.77			36-40	11	79.23						
	41-45	2	91.00			41-45	2	73.00			41-45	2	52.50			41-45	2	55.50			41-45	2	71.25						
	> 55	1	91.00			> 55	1	101.50			> 55	1	97.00			> 55	1	99.50			> 55	1	100.50						
	Total	133				Total	133				Total	133				Total	133				Total	133							
	< 20	1	41.50			< 20	1	45.00			< 20	1	78.50			< 20	1	40.00			< 20	1	92.50						
	20-25	32	57.98			20-25	32	56.86			20-25	32	62.63			20-25	32	62.13			20-25	32	56.17						
	26-30	53	75.20			26-30	53	74.31			26-30	53	70.96			26-30	53	74.69			26-30	53	75.21						
EFF4	31-35	33	61.98	0.277	**EFF8**	31-35	33	62.39	0.261	**SYS4**	31-35	33	58.56	0.553	**FUL4**	31-35	33	59.47	0.370	**PRI1**	31-35	33	62.24	0.170					
	36-40	11	70.32			36-40	11	75.82			36-40	11	81.86			36-40	11	68.73			36-40	11	71.41						
	41-45	2	55.00			41-45	2	56.75			41-45	2	78.00			41-45	2	54.25			41-45	2	51.50						
	> 55	1	99.50			> 55	1	101.50			> 55	1	78.50			> 55	1	97.50			> 55	1	92.50						
	Total	133				Total	133				Total	133				Total	133				Total	133							

Age Group

Table 13 indicates that there is no statistical difference across age category in perceiving SIMBA e-service quality performance. On the contrary, Table 14 shows that there is one dimension that significantly different from other age categories which is operator' intention to say positive things about SIMBA to others. This is represented by LOY1

(0.062) that is significant at 10% confidence level. It implies that respondents who are at the age of 36-40 (mean: 84.5) and 41-45 (mean: 84.5) are equally more eager to say positive things about SIMBA in comparison to other age categories. One might infer that SIMBA is perceived better by the older employee that is usually has reached management level such manager or executive members.

Table 14. Krusskall-Wallis (Age Group-2)

Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.	Item	Age	N	Mean Rank	Asymp. Sig.
QUA1	< 20	1	80.00	0.541	VAL3	< 20	1	80.00	0.987	LOY2	< 20	1	31.00	0.692	LOY4	< 20	1	81.00	0.394
	20-25	32	63.88			20-25	32	65.95			20-25	32	64.31			20-25	32	58.48	
	26-30	53	71.02			26-30	53	69.98			26-30	53	67.71			26-30	53	72.14	
	31-35	33	63.85			31-35	33	64.11			31-35	33	69.26			31-35	33	64.76	
	36-40	11	58.64			36-40	11	66.09			36-40	11	66.91			36-40	11	68.64	
	41-45	2	112.00			41-45	2	59.25			41-45	2	90.50			41-45	2	81.00	
	> 55	1	47.00			> 55	1	50.50			> 55	1	31.00			> 55	1	81.00	
	Total	133				Total	133				Total	133				Total	133		
VAL1	< 20	1	47.50	0.681	VAL4	< 20	1	63.50	0.758	LOY3	< 20	1	29.00	0.511	LOY5	< 20	1	15.00	0.267
	20-25	32	68.42			20-25	32	64.42			20-25	32	64.09			20-25	32	67.84	
	26-30	53	68.82			26-30	53	73.13			26-30	53	70.36			26-30	53	70.49	
	31-35	33	63.21			31-35	33	63.68			31-35	33	63.82			31-35	33	63.64	
	36-40	11	61.27			36-40	11	60.82			36-40	11	71.91			36-40	11	59.55	
	41-45	2	109.50			41-45	2	53.50			41-45	2	88.00			41-45	2	78.00	
	> 55	1	47.50			> 55	1	32.50			> 55	1	29.00			> 55	1	78.00	
	Total	133				Total	133				Total	133				Total	133		
VAL2	< 20	1	37.50	0.377	LOY1	< 20	1	21.50	0.062*										
	20-25	32	71.36			20-25	32	59.28											
	26-30	53	68.20			26-30	53	69.92											
	31-35	33	58.35			31-35	33	65.67											
	36-40	11	72.14			36-40	11	84.50											
	41-45	2	109.50			41-45	2	84.50											
	> 55	1	37.50			> 55	1	21.50											
	Total	133				Total	133												

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Table 15. Krusskall-Wallis (Education Level-1)

Item	Education	N	Mean Rank	Asymp. Sig.	Item	Education	N	Mean Rank	Asymp. Sig.	Item	Education	N	Mean Rank	Asymp. Sig.	Item	Education	N	Mean Rank	Asymp. Sig.
EFF1	High School	24	79.81	0.246	EFF7	High School	24	78.44	0.281	FUL1	High School	24	72.85	0.745	FUL6	High School	24	67.19	0.896
	Diploma	10	65.45			Diploma	10	70.3			Diploma	10	65.85			Diploma	10	58.9	
	Bachelor	93	63.72			Bachelor	93	63.31			Bachelor	93	65.13			Bachelor	93	67.73	
	Postgraduate	6	69.17			Postgraduate	6	73			Postgraduate	6	74.42			Postgraduate	6	68.5	
	Total	133				Total	133				Total	133				Total	133		
EFF2	High School	24	75.67	0.366	EFF8	High School	24	76.19	0.271	FUL2	High School	24	71.58	0.626	FUL7	High School	24	68.52	0.765
	Diploma	10	67.3			Diploma	10	69.95			Diploma	10	57			Diploma	10	67.4	
	Bachelor	93	63.84			Bachelor	93	63.3			Bachelor	93	66.31			Bachelor	93	65.66	
	Postgraduate	6	80.83			Postgraduate	6	82.67			Postgraduate	6	76			Postgraduate	6	81	
	Total	133				Total	133				Total	133				Total	133		
EFF3	High School	24	73	0.476	SYS1	High School	24	64.92	0.492	FUL3	High School	24	68.83	0.270	PRI1	High School	24	69.17	0.911
	Diploma	10	61.4			Diploma	10	54.3			Diploma	10	54.6			Diploma	10	72.7	
	Bachelor	93	65.15			Bachelor	93	68.04			Bachelor	93	66.4			Bachelor	93	66.05	
	Postgraduate	6	81			Postgraduate	6	80.33			Postgraduate	6	89.67			Postgraduate	6	63.5	
	Total	133				Total	133				Total	133				Total	133		
EFF4	High School	24	72.58	0.483	SYS2	High School	24	78.9	0.189	FUL4	High School	24	78.31	0.357	PRI2	High School	24	64.67	0.931
	Diploma	10	73.2			Diploma	10	60.05			Diploma	10	65			Diploma	10	68.45	
	Bachelor	93	64.04			Bachelor	93	63.83			Bachelor	93	64.18			Bachelor	93	66.95	
	Postgraduate	6	80.17			Postgraduate	6	80.17			Postgraduate	6	68.75			Postgraduate	6	74.67	
	Total	133				Total	133				Total	133				Total	133		
EFF5	High School	24	78.44	0.340	SYS3	High School	24	78.29	0.304	FUL5	High School	24	69.44	0.860	PRI3	High School	24	69.38	0.961
	Diploma	10	58.1			Diploma	10	57.7			Diploma	10	62.55			Diploma	10	69	
	Bachelor	93	64.94			Bachelor	93	65.09			Bachelor	93	66.24			Bachelor	93	66.01	
	Postgraduate	6	68.08			Postgraduate	6	67			Postgraduate	6	76.5			Postgraduate	6	69.5	
	Total	133				Total	133				Total	133				Total	133		
EFF6	High School	24	74.63	0.164	SYS4	High School	24	72.75	0.724										
	Diploma	10	52.85			Diploma	10	57.1											
	Bachelor	93	65.28			Bachelor	93	66.72											
	Postgraduate	6	86.75			Postgraduate	6	64.83											
	Total	133				Total	133												

Education Level

Table 15 supports that different education level does not significantly affect respondent in perceiving SIMBA e-service quality performance. Similarly, in Table 16, there is no significant difference in the operator's overall quality, perceived value, and loyalty intention upon SIMBA. This might imply that SIMBA has successfully designed and developed to meet its goal across in various operator's educational background.

Table 16. Krusskall-Wallis (Education Level-2)

Item	Education	N	Mean Rank	Asymp. Sig.	Item	Education	N	Mean Rank	Asymp. Sig.	Item	Education	N	Mean Rank	Asymp. Sig.
	High School	24	68.17			High School	24	74.1			High School	24	69.75	
	Diploma	10	75.3			Diploma	10	71.4			Diploma	10	61.9	
QUA1	Bachelor	93	65.7	0.884	VAL4	Bachelor	93	65.01	0.699	LOY3	Bachelor	93	66.75	0.928
	Postgraduate	6	68.67			Postgraduate	6	62.17			Postgraduate	6	68.33	
	Total	133				Total	133				Total	133		
	High School	24	70.38			High School	24	64.71			High School	24	66.9	
	Diploma	10	70.25			Diploma	10	57.6			Diploma	10	66.9	
VAL1	Bachelor	93	65.7	0.941	LOY1	Bachelor	93	67.47	0.352	LOY4	Bachelor	93	66.8	0.990
	Postgraduate	6	68.17			Postgraduate	6	84.5			Postgraduate	6	70.75	
	Total	133				Total	133				Total	133		
	High School	24	71.35			High School	24	66.4			High School	24	66.67	
	Diploma	10	68.7			Diploma	10	63.95			Diploma	10	64.1	
VAL2	Bachelor	93	65.69	0.926	LOY2	Bachelor	93	67.25	0.981	LOY5	Bachelor	93	68.04	0.736
	Postgraduate	6	67			Postgraduate	6	70.67			Postgraduate	6	57	
	Total	133				Total	133				Total	133		
	High School	24	74.17											
	Diploma	10	75.95											
VAL3	Bachelor	93	63.57	0.452										
	Postgraduate	6	76.58											
	Total	133												

Table 17. Krusskall-Wallis (Income Level-1)

Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.
	< 1	21	73.69			< 1	21	76.86			< 1	21	73.95			< 1	21	79.26			< 1	21	69.4	
	1.0 - 1.9	60	66.51			1.0 - 1.9	60	66.16			1.0 - 1.9	60	66.47			1.0 - 1.9	60	66.02			1.0 - 1.9	60	69.66	
	2.0 - 2.9	30	63.55			2.0 - 2.9	30	62.5			2.0 - 2.9	30	66.17			2.0 - 2.9	30	62.95			2.0 - 2.9	30	59.53	
EFF1	3.0 - 3.9	19	64.76	0.856	**EFF6**	3.0 - 3.9	19	64.29	0.678	**SYS3**	3.0 - 3.9	19	65.42	0.406	**FUL4**	3.0 - 3.9	19	65.71	0.238	**PRI2**	3.0 - 3.9	19	66.53	0.762
	4.0 - 4.9	2	69.25			4.0 - 4.9	2	67.25			4.0 - 4.9	2	22.5			4.0 - 4.9	2	25.5			4.0 - 4.9	2	65	
	> 5.0	1	97.5			> 5.0	1	96.5			> 5.0	1	97			> 5.0	1	97.5			> 5.0	1	94	
	Total	133				Total	133				Total	133				Total	133				Total	133		
	< 1	21	71.38			< 1	21	79.67			< 1	21	79.38			< 1	21	74.86			< 1	21	73.12	
	1.0 - 1.9	60	67.83			1.0 - 1.9	60	64.42			1.0 - 1.9	60	64.79			1.0 - 1.9	60	67.24			1.0 - 1.9	60	68.64	
	2.0 - 2.9	30	60.18			2.0 - 2.9	30	66.77			2.0 - 2.9	30	62.82			2.0 - 2.9	30	63			2.0 - 2.9	30	63.07	
EFF2	3.0 - 3.9	19	71.13	0.603	**EFF7**	3.0 - 3.9	19	63.79	0.253	**SYS4**	3.0 - 3.9	19	68.5	0.194	**FUL5**	3.0 - 3.9	19	66.16	0.446	**PRI3**	3.0 - 3.9	19	60.87	0.751
	4.0 - 4.9	2	42.5			4.0 - 4.9	2	28.25			4.0 - 4.9	2	26			4.0 - 4.9	2	28.5			4.0 - 4.9	2	59.25	
	> 5.0	1	100			> 5.0	1	101.5			> 5.0	1	118.5			> 5.0	1	100.5			> 5.0	1	90	
	Total	133				Total	133				Total	133				Total	133				Total	133		
	< 1	21	74.05			< 1	21	77.5			< 1	21	74.33			< 1	21	74.76						
	1.0 - 1.9	60	63.2			1.0 - 1.9	60	65.68			1.0 - 1.9	60	65.61			1.0 - 1.9	60	70.24						
	2.0 - 2.9	30	70.8			2.0 - 2.9	30	59.9			2.0 - 2.9	30	65.7			2.0 - 2.9	30	60.72						
EFF3	3.0 - 3.9	19	64.58	0.716	**EFF8**	3.0 - 3.9	19	68.29	0.519	**FUL1**	3.0 - 3.9	19	66.47	0.690	**FUL6**	3.0 - 3.9	19	59.39	0.353					
	4.0 - 4.9	2	61			4.0 - 4.9	2	73.25			4.0 - 4.9	2	40.5			4.0 - 4.9	2	39.5						
	> 5.0	1	91			> 5.0	1	101.5			> 5.0	1	98.5			> 5.0	1	97.5						
	Total	133				Total	133				Total	133				Total	133							
	< 1	21	76.83			< 1	21	74.1			< 1	21	66.19			< 1	21	70.29						
	1.0 - 1.9	60	66.08			1.0 - 1.9	60	66.94			1.0 - 1.9	60	67.34			1.0 - 1.9	60	69.29						
	2.0 - 2.9	30	60.43			2.0 - 2.9	30	61.78			2.0 - 2.9	30	66.62			2.0 - 2.9	30	60.9						
EFF4	3.0 - 3.9	19	70.39	0.429	**SYS1**	3.0 - 3.9	19	68.66	0.584	**FUL2**	3.0 - 3.9	19	67.79	0.938	**FUL7**	3.0 - 3.9	19	66.63	0.653					
	4.0 - 4.9	2	41.5			4.0 - 4.9	2	40			4.0 - 4.9	2	49.25			4.0 - 4.9	2	42						
	> 5.0	1	99.5			> 5.0	1	100.5			> 5.0	1	95.5			> 5.0	1	100.5						
	Total	133				Total	133				Total	133				Total	133							
	< 1	21	86.86			< 1	21	70.98			< 1	21	72.21			< 1	21	73.71						
	1.0 - 1.9	60	62.88			1.0 - 1.9	60	63.81			1.0 - 1.9	60	65.34			1.0 - 1.9	60	68.69						
	2.0 - 2.9	30	63.32			2.0 - 2.9	30	68.68			2.0 - 2.9	30	63.7			2.0 - 2.9	30	60.35						
EFF5	3.0 - 3.9	19	64.74	0.067*	**SYS2**	3.0 - 3.9	19	72.34	0.491	**FUL3**	3.0 - 3.9	19	71.55	0.783	**PRI1**	3.0 - 3.9	19	63.76	0.702					
	4.0 - 4.9	2	37.75			4.0 - 4.9	2	29.25			4.0 - 4.9	2	52			4.0 - 4.9	2	63.5						
	> 5.0	1	109.5			> 5.0	1	98.5			> 5.0	1	99.5			> 5.0	1	92.5						
	Total	133				Total	133				Total	133				Total	133							

Note: ***, **, * denotes significant in 1%, 5%, 10% respectively

Income Level

Table 17 shows that item EFF5 (0.067) is significant at 10%, which tells that respondents with income more than IDR 5 million per month (mean: 86.86) acknowledge that SIMBA loads its pages fast while they are using it in comparison to other income levels. On the other hand, Table 18 supports that there is not any significant difference in various income level in perceiving SIMBA overall quality, perceived value, and loyalty intention.

Table 18. Krusskall-Wallis (Income Level-2)

Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank	Asymp. Sig.	Item	Income (million IDR)	N	Mean Rank
	<1	21	81.52			<1	21	76.81			<1	21	80.5			<1	21	69.76			<1	21	69.88
	1.0 - 1.9	60	65.63			1.0 - 1.9	60	64			1.0 - 1.9	60	65.27			1.0 - 1.9	60	68.42			1.0 - 1.9	60	68.05
	2.0 - 2.9	30	64.7			2.0 - 2.9	30	66.97			2.0 - 2.9	30	64			2.0 - 2.9	30	62.57			2.0 - 2.9	30	62.87
QUA1	3.0 - 3.9	19	62.05	0.461	**VAL2**	3.0 - 3.9	19	62.76	0.623	**VAL4**	3.0 - 3.9	19	60	0.413	**LOY2**	3.0 - 3.9	19	70.16	0.343	**LOY4**	3.0 - 3.9	19	68.05
	4.0 - 4.9	2	47			4.0 - 4.9	2	73.5			4.0 - 4.9	2	69.25			4.0 - 4.9	2	20.25			4.0 - 4.9	2	50.25
	>5.0	1	47			>5.0	1	109.5			>5.0	1	106			>5.0	1	90.5			>5.0	1	81
	Total	133				Total	133				Total	133				Total	133				Total	133	
	<1	21	73.55			<1	21	74.38			<1	21	71.69			<1	21	67.76			<1	21	64.43
	1.0 - 1.9	60	66.87			1.0 - 1.9	60	65.93			1.0 - 1.9	60	65.46			1.0 - 1.9	60	68.72			1.0 - 1.9	60	67
	2.0 - 2.9	30	67.02			2.0 - 2.9	30	64.55			2.0 - 2.9	30	67.13			2.0 - 2.9	30	64.9			2.0 - 2.9	30	71.23
VAL1	3.0 - 3.9	19	63.24	0.891	**VAL3**	3.0 - 3.9	19	67.13	0.945	**LOY1**	3.0 - 3.9	19	63.71	0.853	**LOY3**	3.0 - 3.9	19	67.95	0.379	**LOY5**	3.0 - 3.9	19	64.74
	4.0 - 4.9	2	47.5			4.0 - 4.9	2	65.25			4.0 - 4.9	2	84.5			4.0 - 4.9	2	19.5			4.0 - 4.9	2	46.5
	>5.0	1	47.5			>5.0	1	50.5			>5.0	1	84.5			>5.0	1	88			>5.0	1	78
	Total	133				Total	133				Total	133				Total	133				Total	133	

Table 19. Krusskall-Wallis (Usage Intensity-1)

Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.
	Daily	92	65.50			Daily	92	63.68			Daily	92	65.64			Daily	92	66.77	
	Weekly	15	61.03			Weekly	15	63.90			Weekly	15	65.13			Weekly	15	56.43	
EFF1	Monthly	22	80.80	0.151	**EFF7**	Monthly	22	79.30	0.176	**FUL1**	Monthly	22	70.89	0.701	**FUL6**	Monthly	22	73.86	0.486
	Yearly	4	48.00			Yearly	4	87.25			Yearly	4	84			Yearly	4	74.13	
	Total	133				Total	133				Total	133				Total	133		
	Daily	92	64.36			Daily	92	64.11			Daily	92	66.63			Daily	92	63.34	
	Weekly	15	64.63			Weekly	15	66.97			Weekly	15	65.93			Weekly	15	72.47	
EFF2	Monthly	22	80.30	0.283	**EFF8**	Monthly	22	75.39	0.362	**FUL2**	Monthly	22	67.95	0.974	**FUL7**	Monthly	22	75.16	0.290
	Yearly	4	63.50			Yearly	4	87.38			Yearly	4	74.25			Yearly	4	85.88	
	Total	133				Total	133				Total	133				Total	133		
	Daily	92	67.17			Daily	92	63.71			Daily	92	64.43			Daily	92	65.77	
	Weekly	15	59.67			Weekly	15	69.70			Weekly	15	67.63			Weekly	15	66.1	
EFF3	Monthly	22	70.91	0.781	**SYS1**	Monthly	22	77.05	0.371	**FUL3**	Monthly	22	75.41	0.539	**PRI1**	Monthly	22	71.86	0.874
	Yearly	4	69.00			Yearly	4	77.38			Yearly	4	77.5			Yearly	4	72	
	Total	133				Total	133				Total	133				Total	133		
	Daily	92	63.32			Daily	92	66.02			Daily	92	63.2			Daily	92	66.47	
	Weekly	15	72.17			Weekly	15	58.90			Weekly	15	72			Weekly	15	67.67	
EFF4	Monthly	22	75.59	0.289	**SYS2**	Monthly	22	75.91	0.502	**FUL4**	Monthly	22	76.57	0.264	**PRI2**	Monthly	22	66.48	0.901
	Yearly	4	85.00			Yearly	4	71.00			Yearly	4	83.13			Yearly	4	79.5	
	Total	133				Total	133				Total	133				Total	133		
	Daily	92	62.48			Daily	92	65.73			Daily	92	63.96			Daily	92	66.62	
	Weekly	15	64.70			Weekly	15	62.67			Weekly	15	71.43			Weekly	15	63.7	
EFF5	Monthly	22	86.27	0.047**	**SYS3**	Monthly	22	69.82	0.310	**FUL5**	Monthly	22	78.55	0.303	**PRI3**	Monthly	22	69.45	0.914
	Yearly	4	73.63			Yearly	4	97.00			Yearly	4	56.75			Yearly	4	74.63	
	Total	133				Total	133				Total	133				Total	133		
	Daily	92	66.29			Daily	92	62.46											
	Weekly	15	61.20			Weekly	15	66.13											
EFF6	Monthly	22	72.77	0.748	**SYS4**	Monthly	22	82.73	0.082 *										
	Yearly	4	73.25			Yearly	4	88.25											
	Total	133				Total	133												

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Usage Intensity

Table 19 shows that there are two items that significant at 5% and 10% namely, EFF5 (0,047) and SYS4 (0,082) with mean 86.27 and 88.25 respectively. Respondents that use SIMBA monthly perceived that SIMBA loads its pages fast while those who use it yearly do not find any error while utilising it for recording *zakat* transaction. In addition, item LOY5 (0,030) is significant at 5 % as shown in Table 20. It indicates that

operators that use SIMBA in a daily basis (mean: 70.21) are more likely to use SIMBA again in the upcoming months that those who use it less frequent.

Table 20. Krusskall-Wallis (Usage Intensity-2)

Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.	Item	Usage	N	Mean Rank	Asymp. Sig.
	Daily	92	64.52			Daily	92	66.59			Daily	92	67.88			Daily	92	69.26			Daily	92	68.79	
	Weekly	15	63.47			Weekly	15	56.13			Weekly	15	59.83			Weekly	15	55.50			Weekly	15	58.43	
QUA1	Monthly	22	76.45	0.398	VAL2	Monthly	22	73.16	0.440	VAL4	Monthly	22	69.14	0.855	LOY2	Monthly	22	63.84	0.424	LOY4	Monthly	22	66.43	0.562
	Yearly	4	85.25			Yearly	4	83.38			Yearly	4	62.00			Yearly	4	75.63			Yearly	4	61.13	
	Total	133				Total	133				Total	133				Total	133				Total	133		
	Daily	92	65.45			Daily	92	68.33			Daily	92	68.66			Daily	92	68.45			Daily	92	70.21	
	Weekly	15	60.23			Weekly	15	54.27			Weekly	15	57.03			Weekly	15	56.27			Weekly	15	55.47	
VAL1	Monthly	22	78.11	0.450	VAL3	Monthly	22	69.68	0.575	LOY1	Monthly	22	63.68	0.301	LOY3	Monthly	22	64.45	0.279	LOY5	Monthly	22	66.09	0.030**
	Yearly	4	67.00			Yearly	4	69.50			Yearly	4	84.50			Yearly	4	88.00			Yearly	4	41.50	
	Total	133				Total	133				Total	133				Total	133				Total	133		

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Table 21. Krusskall-Wallis (Training Participation-1)

Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.
	Never	13	71.38			Never	13	68.31			Never	13	67.35			Never	13	79.65	
	1 time	6	64.50			1 time	6	52.67			1 time	6	64.75			1 time	6	62.58	
EFF1	2-4 times	43	58.90	0.298	EFF7	2-4 times	43	61.67	0.390	FUL1	2-4 times	43	62.78	0.781	FUL6	2-4 times	43	66.91	0.562
	> 5 times	71	71.32			> 5 times	71	71.20			> 5 times	71	69.68			> 5 times	71	65.11	
	Total	133				Total	133				Total	133				Total	133		
	Never	13	68.69			Never	13	68.54			Never	13	77.50			Never	13	66.62	
	1 time	6	66.08			1 time	6	67.75			1 time	6	56.17			1 time	6	64.83	
EFF2	2-4 times	43	60.41	0.497	EFF8	2-4 times	43	62.07	0.737	FUL2	2-4 times	43	62.27	0.411	FUL7	2-4 times	43	61.81	0.649
	> 5 times	71	70.76			> 5 times	71	69.64			> 5 times	71	68.86			> 5 times	71	70.39	
	Total	133				Total	133				Total	133				Total	133		
	Never	13	77.15			Never	13	70.12			Never	13	76.81			Never	13	77.27	
	1 time	6	47.33			1 time	6	54.00			1 time	6	59.17			1 time	6	69.17	
EFF3	2-4 times	43	57.19	0.024**	SYS1	2-4 times	43	58.64	0.150	FUL3	2-4 times	43	59.29	0.241	PRI1	2-4 times	43	61.42	0.462
	> 5 times	71	72.75			> 5 times	71	72.59			> 5 times	71	70.54			> 5 times	71	68.32	
	Total	133				Total	133				Total	133				Total	133		
	Never	13	72.73			Never	13	85.81			Never	13	68.73			Never	13	66.54	
	1 time	6	65.33			1 time	6	55.00			1 time	6	59.08			1 time	6	70.75	
EFF4	2-4 times	43	61.90	0.667	SYS2	2-4 times	43	57.86	0.047**	FUL4	2-4 times	43	61.15	0.480	PRI2	2-4 times	43	63.36	0.845
	> 5 times	71	69.18			> 5 times	71	70.11			> 5 times	71	70.89			> 5 times	71	68.97	
	Total	133				Total	133				Total	133				Total	133		
	Never	13	70.19			Never	13	78.54			Never	13	74.00			Never	13	80.54	
	1 time	6	59.42			1 time	6	57.33			1 time	6	60.33			1 time	6	65.92	
EFF5	2-4 times	43	57.44	0.152	SYS3	2-4 times	43	64.86	0.548	FUL5	2-4 times	43	60.13	0.383	PRI3	2-4 times	43	62.16	0.350
	> 5 times	71	72.85			> 5 times	71	67.00			> 5 times	71	70.44			> 5 times	71	67.54	
	Total	133				Total	133				Total	133				Total	133		
	Never	13	76.42			Never	13	68.88											
	1 time	6	51.75			1 time	6	53.17											
EFF6	2-4 times	43	58.48	0.104	SYS4	2-4 times	43	61.62	0.448										
	> 5 times	71	71.73			> 5 times	71	71.08											
	Total	133				Total	133												

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Training Participation

Table 21 shows that there are two items that are significant at 5 percent namely, EFF3 (mean: 77.15) and SYS2 (mean: 71.08). Respondents that have never been in SIMBA training state that SIMBA helps them to complete *zakat* transaction quickly and they do not find any error while using SIMBA than the other respondents who have been in the training.

In addition, Table 22 displays that item VAL1, VAL2, and VAL4 are significant at 5%. Respondents with more than 5 times training experience feel that the information provided in SIMBA and the overall convenience in using SIMBA is excellent, which is a better result than what other group perceived it. Meanwhile, respondents that have only been once in SIMBA training perceive much better value is using SIMBA than any other group. Lastly, item LOY3 is significant at 10% and respondents that never been in training (mean: 81.38) tend to more eager to tell their friends to use SIMBA than other respondents that have been participating in SIMBA training.

Table 22. Krusskall-Wallis (Training Participation-2)

Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.	Item	Training	N	Mean Rank	Asymp. Sig.
	Never	13	61.62			Never	13	58.31			Never	13	59.88			Never	13	79.08			Never	13	81.00	
	1 time	6	62.33			1 time	6	74.25			1 time	6	78.25			1 time	6	53.58			1 time	6	58.33	
QUA1	2-4 times	43	60.40	0.356	VAL2	2-4 times	43	55.84	0.047**	VAL4	2-4 times	43	55.36	0.040**	LOY2	2-4 times	43	60.19	0.150	LOY4	2-4 times	43	61.79	0.126
	> 5 times	71	72.38			> 5 times	71	74.74			> 5 times	71	74.40			> 5 times	71	70.05			> 5 times	71	68.32	
	Total	133				Total	133				Total	133				Total	133				Total	133		
	Never	13	57.96			Never	13	61.38			Never	13	74.81			Never	13	81.38			Never	13	78.00	
	1 time	6	73.92			1 time	6	69.67			1 time	6	60.67			1 time	6	42.33			1 time	6	78.00	
VAL1	2-4 times	43	55.83	0.045**	VAL3	2-4 times	43	58.02	0.189	LOY1	2-4 times	43	60.27	0.239	LOY3	2-4 times	43	62.33	0.053 *	LOY5	2-4 times	43	60.65	0.086
	> 5 times	71	74.84			> 5 times	71	73.24			> 5 times	71	70.18			> 5 times	71	69.28			> 5 times	71	67.90	
	Total	133				Total	133				Total	133				Total	133				Total	133		

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Location

Under this group, Krusskall Wallis test finds significant differences among the 22 items of e-service quality. At 1% significance level, there are five significant items (p value < 0.01) which are SYS4 (0.006); FUL4 (0.010); FUL5 (0.010); FUL7 (0.006); and PRI3 (0.009). Interestingly, across those items, respondents who live in Bali and Nusa Tenggara are the most satisfied respondent with mean rank ranging from 90.00 to 98.50, as depicted in Table 23.

Table 23. Krusskall-Wallis (Location-1)

Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.
	Sumatra	47	63.19			Sumatra	47	68.06			Sumatra	47	68.95			Sumatra	47	66.18	
	Jawa	41	69.00			Jawa	41	59.79			Jawa	41	61.38			Jawa	41	66.11	
	Kalimantan	16	53.84			Kalimantan	16	54.56			Kalimantan	16	51.84			Kalimantan	16	53.16	
EFF1	Sulawesi	19	76.05	0.106	EFF7	Sulawesi	19	78.24	0.014**	FUL1	Sulawesi	19	78.11	0.107	FUL6	Sulawesi	19	72.66	0.240
	Bali & Nusa Tenggara	8	90.44			Bali & Nusa Tenggara	8	101.50			Bali & Nusa Tenggara	8	87.69			Bali & Nusa Tenggara	8	90.25	
	Maluku & Papua	2	41.00			Maluku & Papua	2	44.50			Maluku & Papua	2	69.50			Maluku & Papua	2	68.50	
	Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	69.13			Sumatra	47	70.14			Sumatra	47	74.46			Sumatra	47	69.74	
	Jawa	41	60.95			Jawa	41	60.61			Jawa	41	56.37			Jawa	41	62.20	
	Kalimantan	16	53.31			Kalimantan	16	51.75			Kalimantan	16	60.81			Kalimantan	16	42.34	
EFF2	Sulawesi	19	78.03	0.050**	EFF8	Sulawesi	19	73.66	0.067*	FUL2	Sulawesi	19	70.66	0.090*	FUL7	Sulawesi	19	79.87	0.006 ***
	Bali & Nusa Tenggara	8	92.81			Bali & Nusa Tenggara	8	94.44			Bali & Nusa Tenggara	8	84.88			Bali & Nusa Tenggara	8	93.19	
	Maluku & Papua	2	42.50			Maluku & Papua	2	73.25			Maluku & Papua	2	53.00			Maluku & Papua	2	71.25	
	Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	68.57			Sumatra	47	68.85			Sumatra	47	70.50			Sumatra	47	68.79	
	Jawa	41	62.37			Jawa	41	60.37			Jawa	41	60.21			Jawa	41	64.70	
	Kalimantan	16	56.50			Kalimantan	16	58.06			Kalimantan	16	49.00			Kalimantan	16	46.72	
EFF3	Sulawesi	19	76.79	0.231	SYS1	Sulawesi	19	73.00	0.168	FUL3	Sulawesi	19	77.26	0.032**	PRI1	Sulawesi	19	71.21	0.030**
	Bali & Nusa Tenggara	8	83.50			Bali & Nusa Tenggara	8	92.94			Bali & Nusa Tenggara	8	92.13			Bali & Nusa Tenggara	8	92.50	
	Maluku & Papua	2	50.00			Maluku & Papua	2	70.25			Maluku & Papua	2	70.00			Maluku & Papua	2	92.50	
	Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	66.59			Sumatra	47	68.29			Sumatra	47	69.33			Sumatra	47	65.04	
	Jawa	41	60.06			Jawa	41	62.27			Jawa	41	61.01			Jawa	41	68.23	
	Kalimantan	16	60.56			Kalimantan	16	53.59			Kalimantan	16	49.63			Kalimantan	16	46.38	
EFF4	Sulawesi	19	80.47	0.068*	SYS2	Sulawesi	19	80.32	0.114	FUL4	Sulawesi	19	78.79	0.010 ***	PRI2	Sulawesi	19	76.97	0.053**
	Bali & Nusa Tenggara	8	92.25			Bali & Nusa Tenggara	8	84.75			Bali & Nusa Tenggara	8	97.50			Bali & Nusa Tenggara	8	83.00	
	Maluku & Papua	2	41.50			Maluku & Papua	2	43.50			Maluku & Papua	2	40.00			Maluku & Papua	2	94.00	
	Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	69.45			Sumatra	47	72.83			Sumatra	47	69.44			Sumatra	47	70.77	
	Jawa	41	58.74			Jawa	41	53.20			Jawa	41	65.94			Jawa	41	61.43	
	Kalimantan	16	60.34			Kalimantan	16	68.69			Kalimantan	16	41.78			Kalimantan	16	45.59	
EFF5	Sulawesi	19	77.11	0.020**	SYS3	Sulawesi	19	74.63	0.016**	FUL5	Sulawesi	19	75.79	0.010 ***	PRI3	Sulawesi	19	75.63	0.009 ***
	Bali & Nusa Tenggara	8	96.38			Bali & Nusa Tenggara	8	89.50			Bali & Nusa Tenggara	8	93.44			Bali & Nusa Tenggara	8	90.00	
	Maluku & Papua	2	18.50			Maluku & Papua	2	37.00			Maluku & Papua	2	44.00			Maluku & Papua	2	90.00	
	Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	71.80			Sumatra	47	63.10											
	Jawa	41	62.11			Jawa	41	62.63											
	Kalimantan	16	48.88			Kalimantan	16	53.06											
EFF6	Sulawesi	19	68.50	0.033**	SYS4	Sulawesi	19	87.66	0.006 ***										
	Bali & Nusa Tenggara	8	96.50			Bali & Nusa Tenggara	8	98.50											
	Maluku & Papua	2	67.25			Maluku & Papua	2	37.50											
	Total	133				Total	133												

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

At 5% significant level, there are eight significant items (p value < 0.05) namely EFF2 (0.05); EFF5 (0.02); EFF6 (0.033); EFF7 (0.014); SYS3 (0.016); FUL3 (0.032); PRI1 (0.03); and PRI2 (0.053). Bali and Nusa Tenggara are the locations where most respondents satisfied with the performance of those

items indicated by the highest mean rank in each group with mean rank ranging from 89.50 to 101.50. Nonetheless, Maluku & Papua rank the highest on item PRI2 with mean rank 94.00, while both Maluku & Papua and Bali & Nusa Tenggara share the highest mean rank on item PRI1.

At 10 % significant level, there are three items that are significant (p value < 0.10) which are EFF4 (0.068); EFF8 (0.067); and FUL2 (0.09). Again, Bali and Nusa Tenggara are regions where respondents satisfied the most on those items with mean rank 92.95; 94.44; and 84.88 respectively. It can be inferred that respondents who live in Bali and Nusa Tenggara are those who are very satisfied with SIMBA e-service quality, then followed by those who live in Maluku and Papua at the second rank.

Table 24. Krusskall-Wallis (Location-2)

Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.	Item	Location	N	Mean Rank	Asymp. Sig.
	Sumatra	47	65.89			Sumatra	47	66.04			Sumatra	47	66.86			Sumatra	47	68.70			Sumatra	47	71.01	
	Jawa	41	64.20			Jawa	41	60.05			Jawa	41	62.00			Jawa	41	54.71			Jawa	41	58.61	
	Kalimantan	16	44.44			Kalimantan	16	56.03			Kalimantan	16	61.91			Kalimantan	16	62.06			Kalimantan	16	55.19	
QUA1	Sulawesi	19	77.89	0.007*	VAL2	Sulawesi	19	82.37	0.073 ***	VAL4	Sulawesi	19	74.11	0.316	LOY2	Sulawesi	19	81.11	0.010*	LOY4	Sulawesi	19	77.76	0.020**
	Bali & Nusa Tenggara	8	103.88			Bali & Nusa Tenggara	8	92.81			Bali & Nusa Tenggara	8	91.50			Bali & Nusa Tenggara	8	90.50			Bali & Nusa Tenggara	8	81.00	
	Maluku & Papua	2	80.00			Maluku & Papua	2	70.50			Maluku & Papua	2	48.00			Maluku & Papua	2	90.50			Maluku & Papua	2	81.00	
	Total	133				Total	133				Total	133				Total	133				Total	133		
	Sumatra	47	69.60			Sumatra	47	68.27			Sumatra	47	69.03			Sumatra	47	70.74			Sumatra	47	72.43	
	Jawa	41	61.15			Jawa	41	62.15			Jawa	41	60.62			Jawa	41	52.71			Jawa	41	60.02	
	Kalimantan	16	44.13			Kalimantan	16	51.22			Kalimantan	16	61.41			Kalimantan	16	65.63			Kalimantan	16	61.44	
VAL1	Sulawesi	19	77.13	0.010*	VAL3	Sulawesi	19	78.92	0.093 ***	LOY1	Sulawesi	19	71.24	0.254	LOY3	Sulawesi	19	78.68	0.006*	LOY5	Sulawesi	19	67.53	0.145
	Bali & Nusa Tenggara	8	97.00			Bali & Nusa Tenggara	8	91.81			Bali & Nusa Tenggara	8	84.50			Bali & Nusa Tenggara	8	88.00			Bali & Nusa Tenggara	8	78.00	
	Maluku & Papua	2	92.75			Maluku & Papua	2	50.50			Maluku & Papua	2	84.50			Maluku & Papua	2	88.00			Maluku & Papua	2	78.00	
	Total	133				Total	133				Total	133				Total	133				Total	133		

Note: ***, **, * denotes significant in 1%, 5%, 10% respectively

Error! Reference source not found. Table 24 displays that there are four items that are significant at 1% namely QUA1, VAL1, LOY2, and LOY3. Respondents in Bali and Nusa Tenggara argue that SIMBA overall quality (QUA1) and information provided in SIMBA (VAL1) are excellent with mean rank: 103.88 and 97.00, respectively. Likewise, respondents in Maluku & Papua and Bali & Nusa Tenggara share the highest mean rank on item LOY2 (90.5) and LOY3 (88.0).

At 5% significance level, again, Maluku & Papua and Bali & Nusa Tenggara share the highest rank with mean rank 81.00 on the item of LOY4. Moreover, at 10% significant level item VAL2 and VAL3 are also significant together with Bali and Nusa Tenggara who have the highest mean rank 92.81 and 91.91 respectively.

Multiple Regression Analysis

In this part, this study measures if there is a significant impact of the e-service quality dimensions on SIMBA' overall quality, perceived value, and loyalty intention using multiple regression technique. Accordingly, the results in this part respond to research questions H5a; H5b; and H5c. In doing so, this study defines the three regression model as follow:

$$QUA = \alpha + \beta_1 EFF + \beta_2 SYS + \beta_3 FUL + \beta_3 PRI + \varepsilon_1 \quad (0\text{-}1)$$

$$VAL = \alpha + \beta_1 EFF + \beta_2 SYS + \beta_3 FUL + \beta_3 PRI + \varepsilon_2 \quad (0\text{-}2)$$

$$LOY = \alpha + \beta_1 EFF + \beta_2 SYS + \beta_3 FUL + \beta_3 PRI + \varepsilon_3 \quad (0\text{-}3)$$

where: QUA: Overall Quality; VAL: Perceived Value; LOY: Loyalty Intention; EFF: Efficiency; SYS: System Availability; FUL:

Fulfilment; PRI: Privacy; α: constant; β: Slope; ε: error term.

Table 25. Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.676	0.456	0.440	1.13416	1.923
2	.682	0.466	0.449	1.00837	1.990
3	.629	0.396	0.377	0.44088	1.962

Having the regression model, the result is gained by applying the mean value of e-service quality dimensions as the independent variables and the mean value of three criterion as dependent variables in SPPS program. Table 25 displays the model summary of the regression. The adjusted R-square for model 1 to model 3 are 0.440; 0.449; and 0.377 which is quite satisfactory. The result of Durbin Watson test are 1.923; 1.990; and 1962 respectively. They are in the range of 1.5 to 2.5 and close to the ideal 2.0 which highly represents that there is no autocorrelation within the model (Karadimitriou & Marshall, 2015).

Moreover, Table 26 shows the ANOVA test results upon the three regression model. It confirms that all of the three models are significant which means that the e-service quality dimensions have a significant impact on the overall quality, perceived value and loyalty intention.

Table 26. ANOVA Test Result

Model	Items	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	138.285	4	34.571	26.876	.000***
	Residual	164.648	128	1.286		
	Total	302.932	132			
2	Regression	113.447	4	28.362	27.893	.000***
	Residual	130.151	128	1.017		
	Total	243.598	132			
3	Regression	16.28	4	4.07	20.938	.000***
	Residual	24.88	128	0.194		
	Total	41.16	132			

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

Table 27 provides further analysis for these three models that have a direct impact on its respective dependent variables. It shows that in Model 1 there is only one dimension that is significant with p value 0.001 namely 'efficiency' with coefficient value 0.605. Moreover, there are two dimensions on Model 2 that are significant namely 'efficiency' and 'fulfilment' with p value below 0.05. They have coefficient value 0.359 and 0.404 respectively. Nonetheless, there is no dimension that is significant in Model 3.

Table 27. Regression Coefficient Results

Model	Dimension	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	EFF	1.307	0.376	0.605	3.475	0.001***
	SYS	-0.421	0.306	-0.202	-1.378	0.171
	FUL	0.529	0.385	0.257	1.372	0.172
	PRI	0.007	0.172	0.003	0.038	0.970
2	EFF	0.695	0.334	0.359	2.078	0.040**
	SYS	-0.200	0.272	-0.107	-0.734	0.464
	FUL	0.746	0.343	0.404	2.177	0.031**
	PRI	0.076	0.153	0.043	0.497	0.620
3	EFF	0.204	0.146	0.256	1.396	0.165
	SYS	0.128	0.119	0.167	1.077	0.284
	FUL	0.234	0.150	0.309	1.565	0.120
	PRI	-0.092	0.067	-0.127	-1.374	0.172

Note:***, **, * denotes significant in 1%, 5%, 10% respectively

CONCLUSION

Reflections and Conclusion

This study has evaluated the impact of SIMBA on the national zakat collection and its electronic service quality perceived by the SIMBA operators at a nation-wide level. Prior to that, the earlier chapters have established an understanding of the development of zakat management system in Indonesia and the importance management information system in zakat operation.

The regression results in its explorative attempt to illustrate the impact of SIMBA implementation on the national *zakat* collection shows that SIMBA is positive and significantly impact the national *zakat* collection. Moreover, the HDI that represents the human resource quality of management in local BAZNAS office is significantly contribute to increase *zakat* collection but still have a low magnitude in which BAZNAS central office needs to pay attention to increase it. On the contrary, the population is still a burden for *zakat* collection as endemic poverty and the ignorance to pay *zakat* are identified as the reasons. It is also found that the real Gross Domestic Regional Product (GDRP) per capita and GINI coefficient are not significantly impacting zakat collection.

Moreover, this study has succeeded in adapting and conducting e-service quality survey to *zakat* information system realm. All the tests prove that the instrument in this study has a high degree of reliability and validity.

The empirical findings show that SIMBA operators are highly educated, have significant training experience and intensive interaction with SIMBA but are underpaid. It should bring an attention to BAZNAS in order to prevent human resources drain out. In addition, BAZNAS as the main stakeholder should pay significant attention to the SIMBA operator's characteristic which dominantly millennial. They are tech savvy who are loyal to individual managers rather than to corporation and willing to deliver hard work along with virtually immediate reward. This group also consider the company' commitment to people development and society contribution which is should be retained by BAZNAS as the organization value.

The gap analysis has revealed that there are two items in SIMBA e-service quality performance that exceed the operator expectation, namely SYS4 and FUL1. SYS4 represents that there is no error during service while FUL1 represents that SIMBA offers service after necessary data is submitted. This study also has identified and elaborated which e-service quality items that should be retained, repositioned, improved and ignored for SIMBA development.

The non-parametric tests, Mann-Whitney U test and Krusskall-Wallis test, are applied in this study to scrutiny the significant difference among demographic variables

There is no significant difference between gender and among various education level in perceiving SIMBA' performance, overall quality, perceived value, and loyalty intention which indicates that SIMBA has successfully developed to meet its goal throughout different gender and education level. BAZNAS should pay attention to several operator's characteristics that tend to be more loyal towards SIMBA in compare to other characteristic groups. They are operators who are married, at the age 36-45 years old, and using SIMBA in a daily basis. Moreover, Bali & Nusa Tenggara and Maluku & Papua are the regions where respondent perceived highest score in SIMBA' performance, overall quality, perceived value, and loyalty intention as those regions mostly are remote and serve a wide area of service. Therefore, BAZNAS may take these findings as an input to make a SIMBA development strategy and human capacity enhancement program for operator SIMBA in the future.

The multiple regression analysis shows that the three models developed in this study are significant in explaining the SIMBA overall quality, perceived value, and loyalty intention. In this regard, BAZNAS should consider the findings of this study to enhance the electronic service quality of SIMBA in order to improve the effectiveness and efficiency of zakat operation.

LIMITATIONS AND FURTHER RESEARCH

There are limitations that should be recognised in this study, as it can be a major input for further study.

(i) Data availability constraints, as it makes only two year period in 85 cities are involved in this study;
(ii) The primary and secondary data collected in this research is limited to BAZNAS regional office and not capturing any data from LAZ at all. In fact, LAZ represents 27.93% of total national *zakat* and *infaq* collection (BAZNAS, 2017) which is quite significant.

Further study needs to be done to capture the impact of SIMBA in a much longer period with much more observations as SIMBA implementation is getting wider each year.

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