

PAPER • OPEN ACCESS

## Measurement of information quality on mozita application uses the weighted average model

To cite this article: A P Widodo *et al* 2020 *J. Phys.: Conf. Ser.* **1524** 012009

View the [article online](#) for updates and enhancements.

### You may also like

- [Spikes: Exploring the Neural Code](#)  
Daniel Reich
- [Application of Information Technology in College Physical Education](#)  
Junmin Liu and Mengjuan Liu
- [Research, monitoring and diagnosis of continuous control systems IT capacity of information flows in of metallurgical enterprises](#)  
E N Bulakina, O N Nedzelskaya, V V Moiseev et al.



**ECS**  
The  
Electrochemical  
Society  
Advancing solid state &  
electrochemical science & technology

**DISCOVER**  
how sustainability  
intersects with  
electrochemistry & solid  
state science research

# Measurement of information quality on mozita application uses the weighted average model

A P Widodo<sup>1</sup>, K Adi<sup>2</sup>, S A Nugraheni<sup>3</sup> and W Indri<sup>4</sup>

<sup>1</sup>Department of Informatics, Faculty of Science and Mathematics, Diponegoro University

<sup>2</sup>Department of Physics, Faculty of Science and Mathematics, Diponegoro University

<sup>3,4</sup>Department of Public Health, Diponegoro University

Jl. Prof Soedarto, SH, Tembalang, Semarang 50275, Indonesia

Corresponding author: arispw@gmail.com

**Abstract.** Fulfillment of nutrition for children under five years of age is a factor that needs to be considered in maintaining children's health because in infancy it is a period of development that is vulnerable to nutritional status. Based on data from the Ministry of Health of the Republic of Indonesia in 2015 shows that the number of malnutrition is still high, as many as 185 in each province, and it is estimated that there are still around 12 million that have not been reported. The main problem with the high number of malnutrition status lies in the weakness of the recording and reporting process so that the government cannot have information that can be used to conduct early detection of the incidence of malnutrition. The weak process of recording nutritional status is caused by the lack of available instruments that can be used for the recording and reporting process. Based on the above problems, the Mozita application was used to process the recording and reporting of under-five nutritional status based on anthropometry tables. The Mozita application guarantees the accuracy, speed, and convenience in terms of knowing the early growth of toddlers. This study focused on measuring the quality of information on the Mozita application, which includes aspects of accuracy, timeliness, suitability, completeness, and ease of use. Measuring the quality of information is done by using questionnaires distributed to respondents (midwives), then for further analysis using the weighted average pre and post. The results of descriptive data analysis showed that the overall weighted average value of information quality pre Mozita application development was 1.01 and the post was 2.78. Pre and post value is the value of information quality which includes aspects of accuracy, timeliness, suitability, completeness, and ease of use. Comparison between pre and post values has increased by 1.77. An increase in the value of 0.63 can be interpreted that there is a positive influence on the quality of Mozita application information on aspects of accuracy, timeliness, suitability, completeness, and ease of use.

## 1. Introduction

Nutritional status is a physical condition of a person or group of people determined by one or a combination of certain nutritional measures (Victora et al., 2008). Nutritional status assessment is basically a process of examining a person's nutritional state by collecting important data, both objective and subjective, to be compared with the standard that has been available (Novrianda, 2015). Fulfillment of nutrition in children under the age of five (toddlers) is a factor that needs attention in maintaining health because the toddler is a period of development that is vulnerable to nutrition. Cases of death that



occurs in infants are one result of malnutrition. Malnutrition starts from a child's ideal weight loss until finally, it looks very bad (Supariasa et al., 2012). Based on the report from the Department of Health throughout Indonesia there was a decrease in cases of malnutrition, in 2005 there were 76,178 cases and then dropped to 50,106 cases in 2006 and 39,080 cases occurred in 2007 (Ministry of Health, 2008). The decrease in malnutrition cases from year to year cannot yet be ascertained by the numbers, this is due to the unreported cases. Then based on 2015 data shows that as many as 185 toddlers in every province in Indonesia experience malnutrition, and among them experiencing malnutrition (Directorate of Nutrition Development, 2016). The number of malnutrition and bad nutrition in Indonesia is still high. From the Data and Information Center of the Ministry of Health, the Republic of Indonesia gave a percentage by weight per age (BB/U) in 2010, for the percentage of malnutrition 13.0% and bad nutrition by 4.9% (Risikesdas, 2010) and in 2013 the percentage increased in malnutrition 13.9% and bad nutrition 5.7% (Risikesdas, 2013). The data does not include the number of children under five who are estimated to still have 4.5 million children under five with undetected undernourished and undernourished underweight children, which is around 12 million (Ministry of Health, 2015).

Based on the data mentioned above, it shows that the nutritional status of children under five in Indonesia is still very high. One of them is due to the absence of administrative processes for recording and reporting nutritional status that is carried out properly by the relevant institutions or agencies in order to be able to provide an early warning system. The process of recording and reporting has not been able to run properly, among others due to the absence of instruments that can fully accommodate the administrative process of assessing nutritional status sourced from baby registers conducted by midwives (cadres) implementing nutrition.

One of the most frequently used nutritional status assessment methods is anthropometry (Gunter, 2005). The Anthropometric index used is body weight according to age (BW/U), height by age (TB/U) and weight by height (BW/TB). The BB/U index is the most commonly used indicator and it is also recommended to use the TB/U index and BB/TB to distinguish whether nutritional deficiencies occur chronic or acute (Supariasa et al, 2012).

Based on the problems regarding nutritional status assessment mentioned above, an application for monitoring the nutritional status of toddlers has been produced using the anthropometric method carried out by nutrition administrators at the district health office level based on the recap of puskesmas (Fitri, 2017). Puskesmas is a community health center under government control. The monitoring process does not use an approach to the source of data availability, and the classification process regarding nutritional status information does not use the classification measurement method. In another part, there is already an application for monitoring nutritional status using anthropometric methods combined with determining the classification of nutritional status using fuzzy logic (Sari, 2017). Nutrition status classification in order to meet the criteria more accurately is not enough just to use basic physical variables, but it needs to be combined with the gender with physical data of children under five (Putri, 2017). Therefore in doing the combination using the K-Nearest Neighbour method to determine the nutritional status value. The accuracy given is 62.50%, this is still very small the level of precision of the classification precision with the method used (Virga, 2012).

Based on a review of some of the results from previous studies, this research proposes the development of a nutritional status monitoring application for toddlers with a classification carried out using an anthropometric table that is classified based on the sex and age of the toddler. Part of the recording of nutritional status data is done by empowering the role of the community, namely, midwives (cadres/nutrition implementers) as officers who are obliged to record nutritional status in the local area by utilizing the Internet of Things (IoT) technology. The proposed model mechanism is expected to improve the speed and ease of the process of recording the nutritional status of children under five in the local area, so that it can be used by the government or related agencies in the context of monitoring and early warning regarding the management of the nutritional status of children under five.

## 2. Literature review

### 2.1. Nutrition status

Toddlers are children aged between 12 months to 59 months. The age range of toddlers is a phase called the golden age which is an important phase and golden period for growth and development of toddler nutritional status (Gunter, 2005). Nutritional status is a condition of the body as a result of consuming food and using nutrients (ii, 2007). Nutritional status is a state of balance between intake and nutritional requirements, which are needed for growth and development, especially in children under five (Buntin, 2011). Status of development of toddlers is very necessary to be assessed or monitored so that the growth and development of toddlers are not disturbed. Nutritional status assessment can be done directly or indirectly. An immediate assessment to determine nutritional status is by anthropometric, clinical, biochemical, and biophysical assessment. Assessment of nutritional status indirectly can be done by surveying food consumption, vital statistics such as mortality rates by age, and by using ecological factors (Anggraini, 2015). One assessment of nutritional status that is often used is by anthropometric measurements. Anthropometry is used as an indicator of the nutritional status of children under five by measuring several parameters. The parameters used consisted of age, weight, and height (Anggraini, 2015; Virga, 2012). Anthropometric indices are obtained by doing a combination of parameters of age, weight, and height. Among them to measure the status of malnutrition using weight divided by age, stunting uses height divided by age. To get nutritional status information, the results of the comparison between parameters and then plot into the anthropometry table according to the index value.

### 2.2. Reporting nutrition status

Recording the nutritional status of children under five can be done by collecting data using Card Toward Health (KMS) instruments, and Child Identity Card (KIA) handbooks. KMS is a chart of children's development charts measured by age, weight, and gender. KMS is a record of children's health and child development for each month period. KMS is in the form of a card that contains a normal growth curve in infants based on the anthropometric index value of body weight divided by age. KMS is used as an instrument for early detection of impaired child growth and as an extension tool for mothers related to infant nutrition (Anggraini, 2015). The KIA handbook is one of the recording tools and as an extension tool for mothers and families. The KIA handbook contains information and counseling materials for mothers and children, as well as information on the growth and development of maternal and toddler health, which starts from when the mother is pregnant to the age of 5 years (Buntin, 2011). The mechanism for recording the nutritional status of children under five is carried out by midwives in the local area.

The mechanism for the process of recording the nutritional status of children under five years of age was initiated by cadres. Cadres enter data on toddlers in toddler registers. The toddler register contains measurement data for the growth and development of toddlers including age, weight, and height for each month. Health workers in the village office or namely village midwives then determine the growth status of children under five based on the weight index divided by age and compared with the WHO-NCHS standard table. Then the results of the recording process are entered into the F1/PSG form by the midwife and reported to the Puskesmas every month. Puskesmas recapitulates data provided by posyandus in the Puskesmas working area by the Puskesmas (Nutrition Worker) by verifying it by the head of the Puskesmas. Puskesmas is a community health center under government control. Furthermore, the results of the data recapitulation are reported at the district/city level using the F2/PSG form through the KIA Nutrition Section.

### 2.3. Mozita application

Mozita application is an application used to carry out the process of recording and reporting the nutritional status of children. The Mozita application involves midwives, Puskesmas, District Health Offices, and Provincial Health Offices. The mechanism for recording nutritional data for children under five starts from midwives based on children under five in the local Posyandu. Midwives enter data on the results of measurements of height, weight, and body length used as parameters for measuring the nutritional status of children under five. Then based on the value of these parameters will be given

information on the nutritional status of children under five automatically based on the anthropometry table. The automatic nutritional status information provided by the Mozita application greatly helps the midwife's performance because there is no need to do calculations manually. In addition to information on the nutritional status of children under five, the Mozita application is equipped with early warning information by using a notification form in the section whose values are below standard. Mozita application in addition to the recording process is equipped with the process of reporting and monitoring the nutritional status of children in accordance with the applicable hierarchical structure. Mozita application can also be used by other agencies outside the hierarchy of the health department to monitor the health condition of children under five in the local area, such as village heads, sub-district heads, regents, and governors. Mozita application was developed using a web-based and mobile platform. The mobile platform is more intended for midwives by considering the mobilization of midwives' work at the local area Posyandu. In general, the Mozita application is given in Figures 1 and 2.

**Monitoring Gizi Balita** bidan melati putih

**Data Balita**

Nama Balita: 33740400040418007 - Ardi Restu Yu...  
 Tanggal Penimbangan\*: 11-08-2018  
 Tanggal Lahir: 07-09-2014  
 Umur Bayi \*: 48 Bulan  
 Jenis Kelamin: ☒ Laki - laki ☐ Perempuan  
 Berat Badan \*: 11 KG  
 Nama Orang tua: Andik  
 Tinggi Badan \*: 82 CM  
 NIK Orang tua: 333000000000007  
 Panjang Badan \*: 82 CM  
 Keluarga Miskin: ☐ Ya ☒ Tidak  
 LILA \*: 15 CM  
 Propinsi: JAWA TENGAH  
 BB / U \*: ☒ Buruk ☒ Kurang ☐ Baik  
 Kabupaten / Kota: KOTA SEMARANG  
 Lebih  
 Kecamatan: GAJAH MUNGKUR  
 TB / U Atau PB / U \*: ☒ Sangat Pendek ☐ Pendek  
 Desa: GAJAHMUNGKUR  
 Normal ☐ Tinggi  
 Posyandu: MELATI PUTIH  
 BB / TB Atau BB / PB \*: ☐ Sangat Kurus ☒ Kurus  
 Normal ☐ Gemuk  
 IMT / U \*: ☐ Sangat Kurus ☐ Kurus  
 Normal ☒ Gemuk  
 LILA / U \*: ☐ < 11.5 CM ☒ > 11.5 CM

**EARLY WARNING SYSTEM**

Balita Gizi Buruk 1  
 Balita Stunting 3  
 BB / TB Atau BB / PB 1  
 IMT / U 1

**SIMPAN**

Figure 1. Parameter data entry

**Monitoring Gizi Balita** Warning: Balita ini memiliki TB / U Atau PB / U sangat pendek

**Data Balita**

NIK Orang tua: 3300000000000004  
 Panjang Badan \*: 78 CM  
 Keluarga Miskin: ☐ Ya ☒ Tidak  
 LILA \*: 14 CM  
 Propinsi: JAWA TENGAH  
 BB / U \*: ☐ Buruk ☒ Kurang ☐ Baik  
 Kabupaten / Kota: KOTA SEMARANG  
 Lebih  
 Kecamatan: GAJAH MUNGKUR  
 TB / U Atau PB / U \*: ☒ Sangat Pendek ☐ Pendek  
 Normal ☐ Tinggi  
 Desa: GAJAHMUNGKUR  
 BB / TB Atau BB / PB \*: ☐ Sangat Kurus ☒ Kurus  
 Normal ☐ Gemuk  
 Posyandu: MELATI PUTIH  
 IMT / U \*: ☐ Sangat Kurus ☐ Kurus  
 Normal ☒ Gemuk  
 LILA / U \*: ☐ < 11.5 CM ☒ > 11.5 CM

**Berhasil Menyimpan Data** **TAMBAH BARU**

Copyright 2018 © Aplikasi Monitoring Gizi Balita

Figure 2. Early warning system form

### 3. Method

This type of research used in this study is to use the type of Action Research. Action Research is a systematic study to solve problems in the context of the social domain, through action and aimed at increasing understanding, and reasoning for people involved in solving problems. The data collection time approach used is cross sectional by measuring and collecting data together. This research collected data before and after the development of Mozita application which is used for the process of recording and reporting the nutritional status of children under five. Data collection uses quantitative and qualitative methods. Qualitative is used to identify each stage of Mozita application development by conducting observations and interviews with in-depth interviews. Quantitative is used to evaluate the quality of information generated, consisting of aspects of accuracy, timeliness, suitability, completeness, and ease of access before and after the development of the Mozita application by using the checklist sheet. Sources of data used are primary and secondary data. Primary data were obtained from observations and interviews regarding the process of recording and reporting the nutritional status of children. Secondary data used include posyandu support book documents, SDKN data, and KMS. The subjects of this study used 18 people as respondents consisting of 1 part of the MCH and Nutrition Health Center, 1 midwife Regional Development, and 16 cadres of Posyandu. Data processing techniques are carried out by grouping data to determine differences in the quality of information generated from before and after the development of the Mozita application. Data analysis was carried out by means of content analysis and descriptive analysis. Content analysis is carried out by analyzing the results of research with qualitative data sourced from observations and in-depth interviews presented systematically in the form of narratives. Descriptive analysis is done by using the calculation of the weighted average value before and after the development of the Mozita application using a Likert scale, consisting of Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), and Very Disagree (VG = 1). The weighted average calculation formula used is as below:

$$\bar{x} = \frac{\sum fi \times wi}{\sum fi} \quad (1)$$

with  $\bar{x}$  is the average value,  $fi$  is the frequency, and  $wi$  is the weight.  $wi$  is given the same value, which is value 1.

Then after the weighted average value is obtained by using equation (1), the next process is determining the information quality indicators based on the results of the questionnaire answers that have been filled out by respondents.

### 4. Analysis and result

The sampling technique used is simple random sampling. Simple random sampling is a sampling of members of the population carried out randomly without regard to strata in the population and directly to the sampling unit (Gill, 2010). Each sampling unit as an isolated element of the population has the same opportunity to be sampled. This method is done if a member of the population is considered homogeneous. A simple random sampling technique can be used if the number of sampling units in a population is not too much (Taherdoost, 2016).

This research was conducted by giving questionnaires filled out by respondents as many as 18 people. The questionnaire was filled out before and after the development of the Mozita application using the same respondents. The questions in the questionnaire are focused on the quality of information which includes aspects of accuracy, timeliness, suitability, completeness, and ease of use. Every aspect of the quality of information that is measured has several indicator questions. The accuracy aspect has 4 questions, the accuracy aspect has 3 question items, the suitability aspect has 3 question items, the completeness aspect has 3 question items, and the ease of use aspect has 3 question items.

The results of the calculation of the weighted average pre and post development of the Mozita application are given below. The result of the weighted average calculation on the accuracy aspect is obtained that the pre value is 1.11 and the post value is 3.39 as given in Table 1. R1, ..., R18 are respondents. A1, A2, A3, and A4 are the values of questionnaire question items using a Likert scale on

the accuracy aspect. The sum is the sum of item values A1, A2, A3, and A4. Ave is the average value of the question item on the aspect of accuracy. The accuracy aspect shows an increase in the value of the pre and post floating Mozita applications of 2.28. An increase in value by a difference of 2.28 can be interpreted that the Mozita application can significantly improve the accuracy of information about the process of recording and monitoring the nutritional status of children under five so that it can provide a guarantee of the quality of the status data of children under five.

**Table 1.** Weighted average accuracy aspects

Respondent	Pre						Post					
	A1	A2	A3	A4	Sum	Ave	A1	A2	A3	A4	Sum	Ave
R1	1	1	2	1	5	1	3	3	3	3	12	2.4
R3	1	1	1	1	4	0.8	4	3	4	4	15	3
R4	2	1	1	1	5	1	4	4	4	3	15	3
R5	2	2	1	1	6	1.2	3	4	4	4	15	3
R6	1	1	1	2	5	1	4	4	4	4	16	3.2
R7	2	1	1	2	6	1.2	3	3	3	4	13	2.6
R8	1	1	1	1	4	0.8	3	3	3	3	12	2.4
R9	1	1	1	1	4	0.8	3	4	3	3	13	2.6
R10	1	1	1	1	4	0.8	3	3	3	3	12	2.4
R11	1	1	1	2	5	1	3	3	3	4	13	2.6
R12	1	1	1	1	4	0.8	4	3	4	4	15	3
R13	2	1	1	1	5	1	4	4	4	4	16	3.2
R14	1	1	2	1	5	1	4	4	4	4	16	3.2
R15	1	2	1	1	5	1	4	3	3	3	13	2.6
R16	1	1	1	1	4	0.8	4	4	4	4	16	3.2
R17	1	1	2	1	5	1	4	4	4	4	16	3.2
R18	1	1	1	1	4	0.8	4	4	4	4	16	3.2
Sum	21	19	20	20	80	16	61	60	61	62	244	48.8
	1.17	1.06	1.11	1.11	4.44	0.89	3.39	3.33	3.39	3.44	13.56	2.71
Average	1.11						3.39					
Difference	2.28											

The results of the calculation of the weighted average on the timeliness aspect were obtained that the pre value was 1.03 and the post value was 2.56 as given in Table 2. R1, ..., R18 are respondents. B1, B2, and B3 are the values of questionnaire question items using a Likert scale on the timeliness aspect. The sum is the sum of item values B1, B2, and B3. Ave is the average value of the question item on the aspect of timelines. The Timelines aspect showed an increase in the value of the pre and post floating Mozita applications at 1.53. An increase in value by a difference of 1.53 can be interpreted that the Mozita application can increase the fulfillment of information needs regarding the process of recording and monitoring the nutritional status of children under five in accordance with the planned time schedule of activities in each reporting period.

**Table 2.** Weighted average timeliness aspects

Respondent	Pre					Post				
	B1	B2	B3	Sum	Ave	B1	B2	B3	Sum	Ave
R1	1	2	2	5	1	3	3	3	9	1.8
R3	1	2	1	4	0.8	4	3	4	11	2.2
R4	2	2	1	5	1	4	4	4	12	2.4
R5	3	2	1	6	1.2	3	4	4	11	2.2
R6	1	1	1	3	0.6	4	4	4	12	2.4
R7	2	1	2	5	1	3	4	3	10	2
R8	1	1	1	3	0.6	3	4	4	11	2.2
R9	2	1	1	4	0.8	4	4	3	11	2.2
R10	3	1	1	5	1	3	3	3	9	1.8
R11	1	2	2	5	1	3	4	3	10	2
R12	2	2	1	5	1	4	3	3	10	2
R13	2	2	1	5	1	4	4	4	12	2.4
R14	1	1	2	4	0.8	4	4	4	12	2.4
R15	1	2	1	4	0.8	4	3	3	10	2
R16	1	1	2	4	0.8	4	4	4	12	2.4
R17	1	1	2	4	0.8	4	4	3	11	2.2
R18	1	1	1	3	0.6	4	3	4	11	2.2
Sum	26	25	23	74	14.8	62	62	60	184	36.8
	1.44	1.39	1.28	4.11	0.82	3.44	3.44	3.33	10.22	2.04
Average			1.03					2.56		
Difference					1.53					

The results of the calculation of the weighted average in the suitability aspect were obtained that the pre value was 0.88 and the post value was 2.61 as given in Table 3. R1, ..., R18 are respondents. C1, C2, and C3 are the values of questionnaire question items using a Likert scale on the suitability aspect. The sum is the sum of item values B1, B2, and B3. Ave is the average value of the question item on the aspect of suitability. The conformity aspect showed an increase in the value of the pre and post floating Mozita applications of 1.74. An increase in value by a difference of 1.74 can be interpreted that the Mozita application can meet the information needs of the process of recording and monitoring the nutritional status of children under five in accordance with applicable policy regulations, which include the specified document format, arithmetic calculations using anthropometric tables to assess the nutritional status of children under five based on age, body weight, height, and standard deviations. Therefore the Mozita application has greatly reduced the occurrence of errors in interpreting the assessment of the nutritional status of toddlers.

**Table 3.** Weighted average suitability aspects

Respondent	Pre					Post				
	C1	C2	C3	Sum	Ave	C1	C2	C3	Sum	Ave
R1	1	2	2	5	1	3	4	4	11	2.2
R3	1	1	1	3	0.6	4	3	4	11	2.2
R4	1	1	1	3	0.6	4	4	4	12	2.4
R5	1	1	1	3	0.6	3	4	4	11	2.2



Respondent	Pre					Post				
	C1	C2	C3	Sum	Ave	C1	C2	C3	Sum	Ave
R6	1	1	1	3	0.6	4	3	4	11	2.2
R7	2	1	1	4	0.8	3	4	4	11	2.2
R8	1	1	1	3	0.6	3	4	3	10	2
R9	2	1	2	5	1	4	4	3	11	2.2
R10	1	1	1	3	0.6	3	4	3	10	2
R11	1	2	1	4	0.8	3	4	4	11	2.2
R12	2	1	2	5	1	4	3	4	11	2.2
R13	2	1	1	4	0.8	4	3	4	11	2.2
R14	1	1	2	4	0.8	4	4	3	11	2.2
R15	1	1	2	4	0.8	4	4	4	12	2.4
R16	1	1	1	3	0.6	4	3	4	11	2.2
R17	1	2	1	4	0.8	4	4	4	12	2.4
R18	1	1	1	3	0.6	4	3	4	11	2.2
Sum	21	20	22	63	12.6	62	62	64	188	37.6
	1.17	1.11	1.22	3.50	0.70	3.44	3.44	3.56	10.44	2.09
Average			0.88					2.61		
Difference						1.74				

The results of the calculation of the weighted average in the completeness aspect were obtained that the pre value was 0.89 and the post value was 2.68. The completeness aspect calculations are carried out the same as given in Tables 1, 2, and 3. The completeness aspect shows an increase in the value of the pre and post floating Mozita applications of 1.79. An increase in value with a difference of 1.79 can be interpreted that the Mozita application can meet the needs of the completeness of reporting documents in the process of recording and monitoring the nutritional status of infants with a variety of reporting documents from various stage holders. Therefore, with the Mozita application, reporting documents can be presented in full to meet the reporting needs of various variations using the same data source, so that the validity of the data can be justified. The results of the calculation of the weighted average in the easy of uses aspect were obtained that the pre value of 1.14 and post value of 2.65. The easy of uses aspect shows an increase in the value of pre and post floating Mozita applications by 1.51. An increase in value by a difference of 1.51 can be interpreted that the Mozita application can be operationalized easily by users from various social backgrounds. Mozita application can be easily operated by all users because the technology transfer process is done by providing training, assistance, and is equipped with a guide to using in book format or video tutorial.

The overall aspects of measuring the quality of information on pre and post development of Mozita applications are given in Table 4. Each aspect of information quality has increased significantly by comparing the value of pre and post development of Mozita applications. The weighted average value of all aspects shows that the pre value of 1.01 and the post value of 2.78, resulting in a significant increase in the value of 1.77. An increase in the value of 1.77 can mean that the Mozita application as a whole 5 aspects above can provide benefits in supporting the process of recording and reporting the nutritional status of toddlers, both on the user side and stage holder. The accuracy side of the Mozita application provides precise information accuracy based on available data sources, this is because the processes that are carried out are mostly carried out by the system not entirely dependent on the user. The accuracy side that the Mozita application can help users and stage holders to present information needs in accordance with the agreed time agenda. The suitability side that the Mozita application can accommodate information needs both meets the internal or external needs of the organization in

accordance with applicable regulatory policies. The completeness side of the Mozita application can provide complete information with a variety of formats in detail reporting document requirements. The convenience side that the Mozita application can be easily operationalized by the user, this is because in presenting the user interface strived by considering the varied social background of the user. Therefore, based on an increase in the pre and post value of the development of the Mozita application of 1.77 has a positive influence in terms of supporting business activities related to the process of reporting and monitoring the nutritional status of toddlers. Mozita application is very supportive to be used as an instrument of the process of reporting the nutritional status of infants involving midwives (cadres), and government agencies based on a hierarchical structure.

**Table 4.** Weighted average information quality aspects

Aspect	Pre	Post	Difference
Accuracy	1.11	3.39	2.28
Timeliness	1.03	2.56	1.53
Suitability	0.88	2.61	1.73
Completeness	0.89	2.68	1.79
Easy of Uses	1.14	2.65	1.51
Average	1.01	2.78	1.77

## 5. Conclusions

Mozita application has a positive influence to support the management of the reporting process and monitoring the nutritional status of children. This is indicated by the cumulative increase in the value of information quality on the aspects of accuracy, accuracy, suitability, completeness, and ease of 1.77. An increase of 1.77 is shown from the results of the calculation of the weighted average of the pre-Mozita application development value of 1.01 and a post of 2.78. An increase in the value of information quality of 1.77 can be stated that the Mozita application is very helpful for health workers in the process of recording and reporting the nutritional status of toddlers more quickly, efficiently, completely and accurately.

## Acknowledgments

This work was supported by Research Funding Riset Pengembangan dan Penerapan (RPP) Diponegoro University 2018.

## References

- [1] Anggraini L et al 2015 *Jurnal Gizi Klinik Indonesia* vol **11** No 4 p 143-149
- [2] Buntin M B et al 2011 *Healthaffairs Journal* vol **30** no 3 p 464-471
- [3] Dharmawan Y dkk 2015 *Jurnal Kesehatan Masyarakat* vol **10** (2) p 210-217
- [4] Depkes Republik Indonesia 2008 *Handbook Final Report* (Jakarta) p 102
- [5] Direktorat Bina Gizi 2016 *Handbook Final Report* (Jakarta) p 78
- [6] Fitri M O 2017 *Jurnal Instek* vol 2 no 2 p 140-149
- [7] Gill, J 2010 *Handbook Research Methods for Managers* (SAGE Publications) p 102
- [8] Gunter T D and Terry N P 2005 *Journal of Medical Internet Research* vol 7 no 1 p 97-105
- [9] Jeffrey A et al 2007 *JAMA Internal Medicine* vol 167 no 13 p 94-100
- [10] Novrianda D 2015 *Ners Jurnal Keperawatan* vol 11 no 1 p 9-14
- [11] Putri N E A et al 2017 *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer* vol 1 no 9 p 933-939
- [12] Riskesdas R I 2010 *Handbook Final Report Penelitian dan Pengembangan Kesehatan Kemeterian Kesehatan* (Jakarta) p 67

- [13] Riskesdas R I 2013 *Handbook Final Report Penelitian dan Pengembangan Kesehatan Kemeterian Kesehatan* (Jakarta) p 106
- [14] Sari D Y et al 2017 *Jurnal Teknologi Informatika dan Terapan* vol 04 no 01 p 71-79
- [15] Supariasa B dkk 2012 *Handbook on Penilaian Status Gizi* ed 1 (Jakarta EGC) p 203
- [16] Taherdoost H 2016 *International Journal of Academic Research in Management* vol **5** no 2 p 18-27
- [16] Victora C G et al 2008. *Lancet Journal* vol **371** Issue 9609 p 340-357
- [17] Virga P H et al 2012 *International Journal Medical Informatics* vol **81**(10) p 39-45