

# INTERNATIONAL CONFERENCE



The Second International Conference on  
Engineering and Technology Development

# 2<sup>nd</sup> ICETD 2013

27, 28, 29 August 2013, Bandar Lampung, Indonesia



**PROCEEDINGS**



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Hosted by :

Faculty of Engineering and Faculty of Computer Science,  
Bandar Lampung University (UBL), Indonesia

# 2<sup>nd</sup> ICETD 2013

THE SECOND INTERNATIONAL CONFERENCE  
ON ENGINEERING AND TECHNOLOGY DEVELOPMENT

28 -30 January 2013  
Bandar Lampung University (UBL)  
Lampung, Indonesia

## PROCEEDINGS

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## PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development ( 2<sup>nd</sup> ICETD 2013) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participans. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia – Malaysia, APTIKOM – Indonesia, Institut Teknologi sepuluh November – Indonesia, Surya Institute – Indonesia, International Islamic University – Malaysia, STMIK Mitra Lampung – lampung, Bandung Institut of Technology – Bandung, Lecture of The Malahayati University, B2TP – BPPT Researcher – lampung, Starch Technology Center – Lampung, Universitas Islam Indonesia – Indonesia, Politeknik Negeri Malang – Malang, University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – lampung, Starch Technology Center – Lampung, Universitas Riau – Riau, Hasanuddin University – Indonesia, Diponegoro University – Indonesia, King Abdulaziz University – Saudi Arabia, Parahyangan Catholic University – Indonesia , National Taiwan University–Taiwan, Surakarta Christian University – Indonesia, Sugijapranata Catholic University – Indonesia, Semarang University – Indonesia, University of Brawijaya – Indonesia, PPKIA Tarakanita Rahmawati – Indonesia, Kyushu University, Fukuoka – Japan, Science and Technology Beijing – China, Institut Teknologi Sepuluh Nopember – Surabaya, Researcher of Starch Technology Center, Universitas Muhammadiyah Metro – Metro, National University of Malaysia – Malaysia.

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also gratefull to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 29 August 2013-08-26

Mustofa Usman, Ph.D  
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## The Evaluation of information system performance in higher education case study with EUCS model at bandar lampung university

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**Abstract** - *Simperti has been used for about more than 10 years at the bandar lampung university, but the system has 'nt been done with the developing which it must be followed the bussiness need in UBL. Sometimes it arises the problem that give obstacles which will give impact to UBL's academy performance, the management has not been taking any actions to improve the simperti's performance, especially in terms of user satisfaction that indicate which parts need to be improved to meet the needs of the user, because it has not been done an analysis of the feasibility of the system in terms of the end user. Several models have been built to analyze and understand the factors that influence the acceptance of the use of computer technology, one of them is model developed by doll and torkzadeh(1998), the purpose of this research is to apply the model of end user computing satisfaction in evaluating the higher education information system (SIMPERTI) bandar lampung university. So that evaluation results obtained by simperti based on EUCS dimension, content, accuracy, format, ease of user, topical, system speed, reliability.*

**Keywords:** EUCS, Evaluation, SIMPERTI

### Introductions:

Since the early 1980s, many studies or observations were conducted a survey in the field of information system, that observe the end-user computing. Moreover, the growth of end-user computing is one of the significant phenomena in 1980, as reported by the information management world data. An observation is conducted by the international data company predicts that four out of five professional workers and administrative will use personal computers to support their work and personal activities. One of the observations that has been done to get the end user's satisfaction from a system and known as EUCS, ilias et, all (2009:1)

The measurement of satifaction has a story of its own in the world of informations system, the scope of end-user computing, a number of studies have been done to capture the overall end-user evaluation which has considered the use

of an information system(eg. Satisfaction) and also the factors that shape this satisfaction. Ilias et al. (2007:2)

Bandar lampung university is the largest private university in lampung province, which was founded in 1984 under the auspices of the foundation administration lampung (YAL) which at taht time was chaired by Drs. RM. Barusman. YAL is a foundation that is engaged in education, which in 1972 also founded the academy of bussiness administration(AAN) tanjung karang, which later changed its name become the secretatiat and academy of management (ASM) bandar lampung.

Handling of teaching and learning activities in bandar lampung university is done professionally by an experienced and qualified lecturer with educational background S2 and S3 graduates from the leading universities at home or abroad, they are supported by an integrated system of academic and the development based on technology curriculum. The information system that available in

bandar lampung university is created and implemented in 2000, as simperti UBL has a function to process the students' data, study plan card, lecture schedule, etc. The simperti is made an effort to present accurate information, timely and required need to support the function of management and making decision function in providing educational services. Simperti has been used for more than 10 years at bandar lampung university, but the system has not done with the match components that need of business development at UBL, a problem that often arises is weakening simperti ability to handle the increasing amount of data, many policy in new management simperti that can't unfulfilled with simperti. , as the executive class retrieval system courses through from the module, moreover many queuer student when they want to fill the krs, the technology that is used considered by most users no longer relevant to the development of technology and user needs. Over all the management problems that arise did not take any actions to improve performance simperti especially in terms of user satisfaction that indicate which parts that need to be improved to meet the needs of the user, because it has not done an analysis of the feasibility of the system in terms of the end user, therefore researchers are trying to conducted a study to determine the application of the model and evaluate the performance of SIMPERTI EUCS is expected to provide input into the management UBL to the users's satisfaction of that system. The problem in this study, there is no the measurement of simperti's so it is difficult to identify the End User satisfaction. It is resulted in a few things suvh as :

1. Simperti weakened ability to handle the amount of data that become more and more.
2. New policies in the management are not related enough with SIMPERTI.
3. The queue up of Students when they wanted to fill the queue KRS it's really wste many times and it was happened conflict and protests from students

4. The technology used is considered by most users no longer relevant to the development of technology and user needs.
5. The management is difficult to determine which parts will be improved end user computing satisfaction.

#### End User Computing Satisfaction

Measurement of satisfaction has had a long history in disciplines information system .in the scope of end-user computing, a number of studies have been done to capture the overall evaluation in which end users have considered the use of an information system (eg, satisfaction) and also the factors that shape this satisfaction ini. Doll et al. 1995 cited by Chin et al., (2000, p1)

End User Computing Satisfaction (EUCS) is a method to measure the level of satisfaction of users an application system by comparing between expectations and the reality of an information system. Definition of End User Computing Satisfaction of an information system is the overall evaluation of the users of information systems based on their experience in using the system Doll, 1988 and Torkzadeh (1991, p2).

EUCS evaluation model was developed by Doll & Torkzadeh. The Evaluation using this model emphasizes satisfaction (satisfaction) end users to the technological aspects, by assessing the content, accuracy, format, time and easy of use of the system. This model has been tested by other researchers to test the reliability and the results showed no significant difference even though is translated in many different languages.

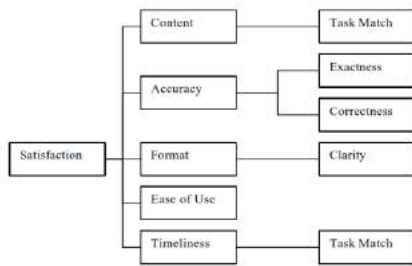


Figure 2.3

### Model Evaluation of End User Computing Satisfaction

Here is an explanation of each dimension is measured by the method End User Computing satisfaction according to Doll & Torkzadeh:

#### Dimensional Content

Content dimensions measuring user satisfaction in terms of the contents of a system. The contents of the system is usually in the form of functions and modules that can be used by system's users and also the information generated by the system. Content dimension also measures whether the system generates information according to user needs. The more complete module and informative system, so the level of satisfaction of users will be higher.

#### Dimensional Accuracy

Dimensional Accuracy measuring user satisfaction in terms of the accuracy of the data when the system receives input then process them into information. The accuracy of the system is measured by looking at how often the system produces incorrect output when processing input from the user, but it can be seen also how often an error or errors in the data processing.

#### Dimension Format

Format dimensions measuring user satisfaction in terms of appearance and aesthetics of the system interface, the format of the report or information is generated by the system if the interface of the system and whether it attractives display of the system will be easier for

users when using a system that can indirectly impact the level of effectiveness of the user .

#### Dimensions Ease of Use

Ease of Use dimensional measuring user satisfaction of easy to use or user friendly conveniences in using systems such as the process of entering the data, process the data and search for the required information.

#### Timeliness dimension

Timeliness measuring the dimensions of user satisfaction in terms of timeliness in the present system or provide data and information required by the user. Timely system can be categorized as real-time systems, it means any request or input that is done by the user will be immediately processed and output will be displayed instantly without having wait too long.

#### Result

The questionnaires are distributed to a sample derived from six faculties that exists at the UBL as the number of respondents are 327 students but there was one respondent who did not answer the question at all so that the number of respondents used in this study/observation was 326 pieces,

In the questionnaire, there are introductory questions that aimed to determine the identity of the respondents in general, namely whether the respondent UBL students, the students are come from (where the faculty, gender,) as well as the student uses SIMPERTI UBL for what purposes. Here is a graph results questioner with introductory questions by the number of questions of 5 pieces:

The first chart introductory question asking whether the respondent is a student at the UBL, with as many as 98% of respondents answered Bandar Lampung University students and as much as 2% who answered are not from Bandar Lampung University students.

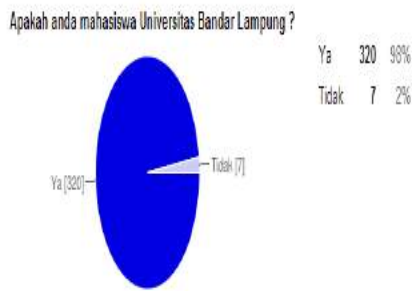


Figure 4.1

Graph the results of the question whether the respondent student UBL

Graph second introductory question that asked to the respondents what is the number of younger students at the University of Bandar Lampung, with as many as 30% of respondents answering class of 2009, and 37% said class of 2010, and as much as 32% who responded class of 2011.

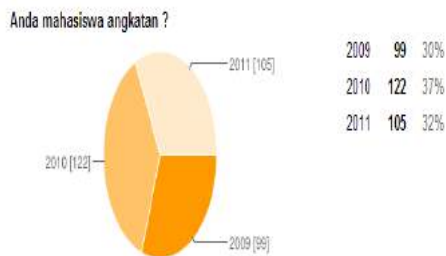


Chart 4.2

Graph the results of the questions asked in the student force UBL

Graph 3 introductory questions that asked the respondent what faculty do you take in bandar lampung university? the number of respondents answering as many as 18% of the Faculty of Economics, Faculty of Law as much as 21%, 15%, Faculty of Engineering, Faculty of Computer Science as much as 22%, of the Faculty of Social and Political

Sciences as 14%, and the Faculty of Teacher Training and Education as much as 9%.

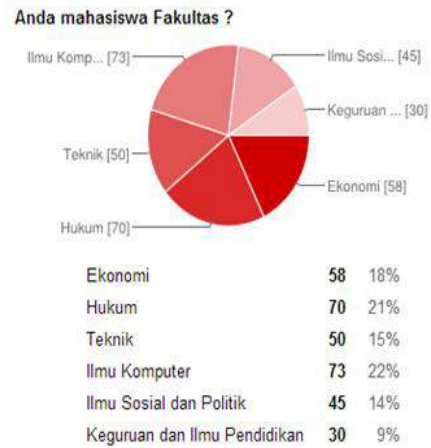


Chart 4.3

Graph the results of questions where respondents were from faculty in UBL

Graph four introductory questions that asked respondents' gender. A total of 58% said men and women were 42% responded.

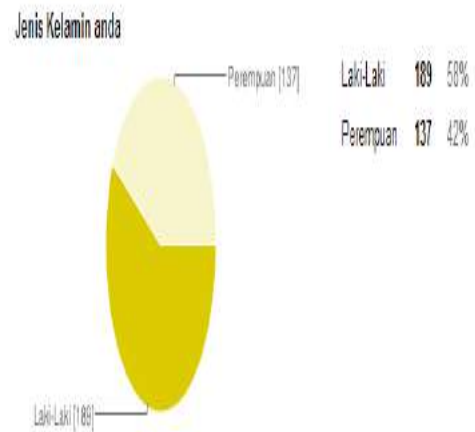


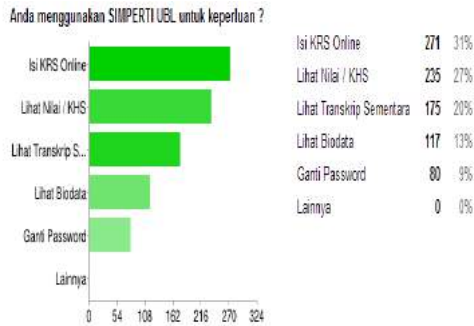
Chart 4.4

Graph the results of question asking respondents' gender.

Graphs fifth introductory questions that asked respondents, what is the function of simperti that usually students use. A total of 31% responded to fill the KRS Online, 27% responded to see the



value or KHS, 20% responded to see transcripts while, 13% responded to see the biodata and 9% responded to change the password or pin.



Graph 4.5

Graph the results question the respondents use SIMPERTI UBL purposes.

After the introductory questions presented in the questionnaire, then the next question that states the core end-user satisfaction of SIMPERTI UBL. In this case the end user that is taken as a sample is ubl's students

There hacc 25 pieces questions, Here is the table of the results of the questionnaire with as many as 25 questions, with answers strongly agree with weights 5, agrees with weights 4, hesitated with weights 3, 2 weights less agree with, and disagree with weight 1, which was answered by 326 respondents.

N <sup>o</sup>	Pertanyaan	Sangat Setuju	Setuju	ag-u-R ag-u	Kuran g Setuju	Tidak Setuju	Total
1	SIMPERTI UBL memberikan informasi yang memenuhi kebutuhan anda.	35	98	100	79	27	326
2	SIMPERTI UBL menghasilkan laporan yang sesuai dengan kebutuhan anda.	4	83	167	70	1	326
3	Jumlah informasi yang diberikan SIMPERTI UBL memenuhi jumlah kebutuhan informasi anda	26	78	138	73	11	326
4	SIMPERTI UBL memiliki keakuratan sistem yang baik	2	103	133	83	5	326
5	SIMPERTI memiliki tingkat kegagalan (error) yang rendah	56	84	81	81	24	326
6	SIMPERTI memberikan informasi yang benar	43	56	173	40	14	326
7	SIMPERTI memberikan informasi yang akurat	9	146	40	126	5	326
8	Informasi yang disajikan oleh SIMPERTI dapat diandalkan	2	108	120	95	1	326
9	Apakah format output yang disajikan SIMPERTI mudah di baca dan bermanfaat	9	91	129	82	5	326
10	Informasi yang dihasilkan SIMPERTI dapat dengan jelas dibaca	48	82	95	71	30	326
11	Format output SIMPERTI sesuai dengan keinginan anda	2	69	189	61	5	326
12	Cara dan proses SIMPERTI dalam menampilkan output sesuai dengan keinginan anda	4	64	187	66	5	326
13	SIMPERTI memiliki tampilan yang ramah pengguna	4	89	139	84	10	326

N <sup>o</sup>	Pertanyaan	Sangat Setuju	Setuju	ag-u-R ag-u	Kuran g Setuju	Tidak Setuju	Total
14	SIMPERTI mudah untuk di gunakan	2	120	91	104	9	326
15	SIMPERTI memiliki tampilan yang mudah untuk berkomunikasi dengan pengguna	3	68	179	68	8	326
16	Informasi yang dimiliki SIMPERTI tepat waktu dengan yang anda perlukan	32	105	38	109	42	326
17	SIMPERTI menyediakan update informasi yang baik	21	77	134	74	20	326
18	SIMPERTI dapat menyajikan histori data dalam kurun waktu yang lama	62	91	41	84	48	326
19	SIMPERTI meminimalisasi keterlambatan informasi yang anda butuhkan	2	148	34	137	5	326
20	Kecapatan operasional sistem SIMPERTI memuaskan pengguna	2	21	274	18	11	326
21	Pada saat proses menjalankan perintah, SIMPERTI memiliki kecepatan yang baik	9	97	106	95	19	326
22	SIMPERTI memiliki kehandalan yang tinggi dari ancaman virus	2	55	218	47	4	326
23	Sistem SIMPERTI memiliki kehandalan dari gangguan listrik (mati lampu)	58	62	94	68	44	326
24	SIMPERTI memiliki keamanan yang tinggi dari gangguan eksternal (hacker)	11	103	108	97	7	326
25	Sistem SIMPERTI memiliki kehandalan dari gangguan alam (bencana alam)	7	52	196	39	12	326

## Discussion

### Test Validity

The population in this observation/ study is Bandar Lampung University students numbered 1807 people and the no. Of student is 1807 and then taken 327

samples with an error rate of 5%. The amount obtained from a table containing the results of the calculation of the number of samples in accordance with the formula Slovin. To test the validity and reliability of research instrument, the 327 questionnaires were distributed for testing the population at random but with 25 questions.

Because the sampling is done as much as 327 pieces, then  $r$  tables used by 0.113 corresponding significant level of 5% or 0.05. Instruments will be declared invalid if the calculated value of  $r$  (Pearson Correlation) is greater than the value of  $r$  table (0.133) and declared reliable when Cronbach's Alpha value is greater than the value of  $r$  table (Arikunto 1997).

The calculation is done by testing the construct validity, which is used for the data, what's for it must be scored from questionnaire is completely appropriate / accurate / valid variables take into research. The calculation is done using excel with attached data.

Table 4.2

No	Pertanyaan	Sangat Setuju	Setuju	Ragu-Ragu	Kurang Setuju	Tidak Setuju	Total
15	ST/PERTI memiliki tampilan yang mudah untuk berkomunikasi dengan pengguna	3	68	179	68	8	306
16	Informasi yang dimiliki ST/PERTI tepat waktu dengan yang anda perlukan	32	105	38	109	42	306
17	ST/PERTI menyediakan update informasi yang baik	21	77	134	74	20	306
18	ST/PERTI dapat menyajikan histori data dalam kurun waktu yang lama	62	91	41	84	48	306
19	ST/PERTI meminimalisasi keterlambatan informasi yang anda butuhkan	2	148	34	137	5	306
20	Kecapatan operasional sistem ST/PERTI memuaskan pengguna	2	21	274	18	11	306
21	Pada saat proses menjalankan perintah, ST/PERTI memiliki kecepatan yang baik	9	97	106	95	19	306
22	ST/PERTI memiliki kehandalan yang tinggi dari ancaman virus	2	55	218	47	4	306
23	Sistem ST/PERTI memiliki kehandalan dari gangguan listrik (mati lampu)	58	62	94	68	44	306
24	ST/PERTI memiliki keamanan yang tinggi dari gangguan eksternal (hacker)	11	103	108	97	7	306
25	Sistem ST/PERTI memiliki kehandalan dari gangguan alam (bencana alam)	7	52	196	59	12	306

excel to get the value, the data can be seen in the attachment.

R values obtained were: 0.572

Continue testing by entering values correlation into the formula Spearman correlation Brown.

$$R = (2 (0.572)) / (1 + 0.572)$$

$$R = 1.71$$

Criteria: the instrument has a high level of reliability if the value of the coefficient

gained > 0.60

$$R = 1.71 > 0.60$$

From the results it was found that the instrument has a high level of reliability.

Results from the questionnaire data processing there are several dimensions that need to be improved related to SIMPERTI's user of satisfaction, dimensions that need to be seen can be seen in this table below

### The reliability test

Reliability testing using the Split Half technique, is used to assess whether the data is in the focus groups / questionnaires can be trusted / reliable or not. The values for testing the reliability derived from valid questionnaire item scores. Invalid items are not included in the testing technique reliabilitas. tabel resulting from Split Half, attached

Calculation of r values is founded with separate the items even and odd items, after it is calculated using the formula in

\:

No	Pertanyaan	Sangat Setuju	Setuju	Ragu-Ragu	Kurang Setuju	Tidak Setuju	Total
1	SIMPERTI UBL memberikan informasi yang memenuhi kebutuhan anda	35	98	100	79	27	326
2	SIMPERTI UBL menghasilkan laporan yang sesuai dengan kebutuhan anda	4	83	167	70	1	326
3	Jumlah informasi yang diberikan SIMPERTI UBL memenuhi jumlah kebutuhan informasi anda	26	78	138	73	11	326
4	SIMPERTI UBL memiliki keakuratan sistem yang baik	2	103	133	83	5	326
5	SIMPERTI memiliki tingkat kegagalan (error) yang rendah	56	84	81	81	24	326
6	SIMPERTI memberikan informasi yang benar	43	56	173	40	14	326
7	SIMPERTI memberikan informasi yang akurat	9	146	40	126	5	326
8	Informasi yang disajikan oleh SIMPERTI dapat diandalkan	2	108	120	95	1	326
9	Apakah format output yang di sajikan SIMPERTI mudah di baca dan bermanfaat	9	91	129	82	5	326
10	Informasi yang dihasilkan SIMPERTI dapat dengan jelas dibaca	48	82	95	71	30	326
11	Format output SIMPERTI sesuai dengan keinginan anda	2	69	189	61	5	326
12	Cara dan proses SIMPERTI dalam menampilkan output sesuai dengan keinginan	4	64	187	66	5	326

## Conclusions

From the processing data that has been done, it is given a conclusion of each dimension of satisfaction. End Using Computing Satisfaction are not met by SIMPERTI UBL, the results obtained from the survey of 326 samples of the population.

### Contents

Acquisition of the contents of the average dimensions is 3.09, indicating that there is still a lack of users satisfaction to the dimensions of the content, so it need to have improvement in the content of the information produced SIMPERTI, finally it can be fulfilled in level level 4 and 5.

### Accuracy

Average acquisition dimensional accuracy is 3.12, indicating that there is still a lack of user satisfaction for dimensional accuracy, so it needs to have improvement in the precision and accuracy of the system is done SIMPERTI, finally it can be fulfilled in level level 4 and 5.

### Format

Acquisition of the contents of the average dimensions is 3.06, indicating that there is still a lack of user satisfaction to the dimensions of the format, so it needs to have improvement in simperti formats ranging from display format, output format and output format SIMPERTI, finally it can be fulfilled in level 4 and 5.

### Ease Users

Acquisition of the contents of the average dimensions is 2.98, indicating that there is still a lack of user satisfaction to the dimensions of the user convenience, so there needs to be improvement in the look of the application, the application is easy to use technology by users simperti SIMPERTI, finally it can be fulfilled in level 4 and 5.

### Topicality

Acquisition of the contents of the average dimensions is 3.02, indicating that there is still a lack of user satisfaction to the dimensions of actuality, so it needs to have improvement in the actualization of the data provided by SIMPERTI, finally it can be fulfilled in level 4 and 5.

### Speed system

Acquisition of the contents of the average dimensions is 2.97, indicating that there is still a lack of user satisfaction to the dimensions of speed systems, so it needs to have improvement in the speed of data processing by SIMPERTI, finally it can be fulfilled in level 4 and 5.

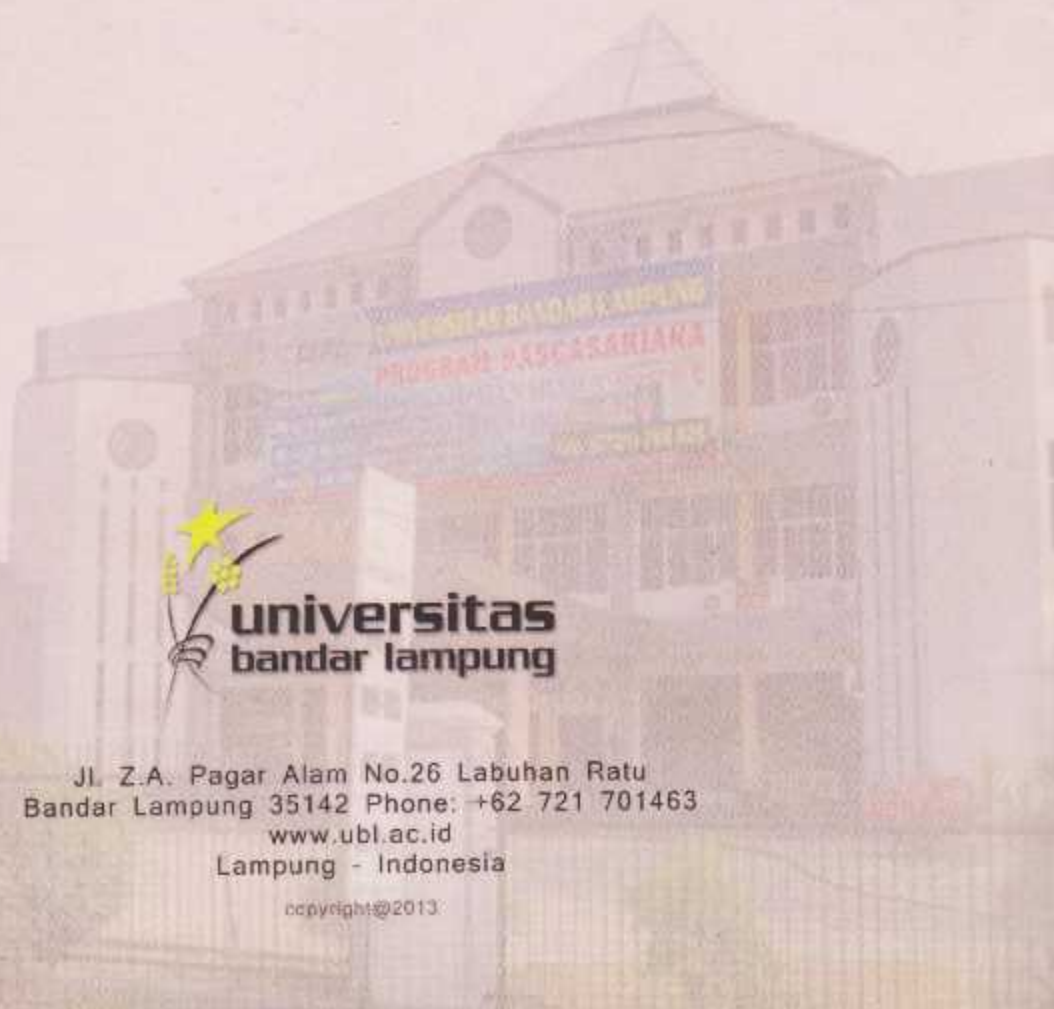
## Reliability

Acquisition of the contents of the average dimensions is 3.02, indicating that there is still a lack of user satisfaction to the dimensions of reliability, so it needs to have improvement in the reliability of some disturbance in SIMPERTI, finally it can be fulfilled in level 4 and 5.

Overall results of the review showed us that still less people who use simperti of EUCS dimension at ubl, feel satisfied and the rest still fell not really satisfied.

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