



Evaluating Smile Patterns in Data and Information Transfer

Evaluasi Pola Senyum dalam Transfer Data dan Informasi

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ABSTRACT

This study aims to evaluate SMILE at BPJS Ketenagakerjaan Tanjung Morawa Branch using the User Compatibility method which assesses the extent to which the application meets the needs, capabilities, and expectations of users. This research method involves surveying SMILE users at BPJS Ketenagakerjaan Tanjung Morawa Branch by considering aspects of usability, efficiency, and user satisfaction. Data collection was carried out through questionnaires, interviews, and direct observation of SMILE users at BPJS Ketenagakerjaan Tanjung Morawa. The evaluation results show that SMILE Data and Information Management BPJS Ketenagakerjaan Tanjung Morawa Branch has a high level of user compatibility. Because it shows that all EUCS (End User Computing Satisfaction) independent variables consisting of Content, Format, Accuracy, Timeliness, Ease of Use have a significant relationship with SMILE user satisfaction. The resulting evaluation results and recommendations can serve as guidelines for future development and improvement.

Keyword: SMILE, information management, EUCS

ABSTRAK

Penelitian ini bertujuan untuk mengevaluasi SMILE di BPJS Ketenagakerjaan Cabang Tanjung Morawa dengan menggunakan metode User Compatibility yang menilai sejauh mana aplikasi tersebut memenuhi kebutuhan, kemampuan, dan harapan pengguna. Metode penelitian ini melibatkan survei terhadap pengguna SMILE di BPJS Ketenagakerjaan Cabang Tanjung Morawa dengan mempertimbangkan aspek usability, efisiensi, dan kepuasan pengguna. Pengumpulan data dilakukan melalui kuesioner, wawancara, dan observasi langsung terhadap pengguna SMILE di BPJS Ketenagakerjaan Tanjung Morawa. Hasil evaluasi menunjukkan bahwa Sistem Pengelolaan Data dan Informasi SMILE di BPJS Ketenagakerjaan Cabang Tanjung Morawa memiliki tingkat user compatibility yang tinggi. Hal ini ditunjukkan oleh semua variabel independen EUCS (End User Computing Satisfaction) yang terdiri dari Konten, Format, Akurasi, Ketepatan Waktu, dan Kemudahan Penggunaan memiliki hubungan yang signifikan terhadap kepuasan pengguna SMILE. Hasil evaluasi dan rekomendasi yang dihasilkan dapat menjadi pedoman untuk pengembangan dan perbaikan di masa mendatang.

Kata kunci: SMILE, manajemen informasi, EUCS

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1. INTRODUCTION

Scientific and technological advances are increasingly sophisticated and rapidly growing in the era of the industrial revolution 4.0, where this revolution represents a shift in industrial aspects through the merger of technology and the Internet [1]. The rapid development forces all nations to continue striving to master advanced science and technology, as nations that fail to do so will be left behind [2][3]. The University of North Sumatra (UIN-SU Medan) is one of the institutions that offer an Information System (SI) study program, which aims to produce graduates capable of developing, managing, and implementing information systems in various fields [4][5].

One of the activities integrated into the curriculum of the SI study program at UIN-SU Medan is practical work, an obligatory activity for students as a prerequisite for obtaining a bachelor's degree. This practical work allows students to apply the knowledge acquired on campus to real-world situations in the workforce [6]. The Tanjung Morawa Employment Branch, responsible for managing the Occupational Accident Insurance (JKK) and Death Insurance (JKM) programs for formal workers in Indonesia, is one such setting for these practical work experiences [7].

In this practice, students of the Information Systems Study Program at UIN-SU Medan will conduct an evaluation of the SMILE application used by BPJS at the Tanjung Morawa Branch. The evaluation aims to determine the primary purpose of the SMILE application in data and information management, assess user needs related to data management, and evaluate whether the application meets these needs or requires adjustments or additional features [8]. The evaluation also measures the performance of the SMILE application in terms of speed, reliability, and scalability, assessing whether it manages data and information efficiently and without interruption [9][10]. Additionally, feedback from SMILE users will be gathered to determine how well the application meets their expectations and improves productivity in data and information management [11].

2. METHODOLOGY

This study uses primary data with a survey method where data is obtained directly from respondents who are the object of research by distributing questionnaires. This questionnaire is closed because it has been given an alternative answer, which is filled in by the respondent. Closed questionnaires are easy to distribute, especially in the form of questions with predetermined answers, where respondents only need to choose one. The research was conducted at the Tanjung Morawa branch of the BPJS government agency by evaluating the SMILE application used by the Tanjung Morawa Branch BPJS. The population in this study consisted of 13 respondents taken from the internal environment. Data collection was done through filling out questionnaires, conducting interviews, and direct observation of SMILE users in transferring data and information. The variables of this study are in accordance with the existing instruments in the EUCS method, namely Content, Accuracy, Format, Ease of Use, and Timeliness.

2.1 User Compatibility Methods

This user compatibility method refers to the extent to which a product, service, or system meets the needs, preferences, and expectations of the user in a satisfactory way. It is a very important concept in user experience (UX) design and product development. There are several aspects to consider in achieving User Compatibility:

1. Usability: How easily a product or system is used by the user.
2. Accessibility: Products must be designed to be accessible to everyone, including people with disabilities. This includes designs that take into account people with different levels of physical and cognitive ability.
3. Relevance: Products must be relevant to the needs and purposes of users. A product that understands and meets the needs of users will have a high level of compatibility.
4. User Satisfaction: How satisfied users are with their experience using a product or service. Generally speaking, the more satisfied the user, the higher the level of compatibility.
5. Cultural Compatibility: Products must also be consistent with the values and cultural norms of the target user. Designs that understand the cultural context of the user can improve compatibility.

6. Responsiveness: Products should respond quickly to user actions. Users who feel that the product responds quickly will experience a better experience.
7. Personalization: Products that can be customized to the user's preferences have a high level of compatibility as they accommodate individual preferences.
8. Consistency: Consistency in the user interface design ensures that the user can understand and predict how to interact with the product.

2.2. Method End User Computing Satisfaction (EUCS)

The End User Computing Satisfaction (EUCS) method is used to assess the level of user satisfaction with an application system by comparing users' expectations with their actual experience. Satisfaction is viewed as the overall evaluation given by users based on their interaction with the information system.

This method evaluates five main dimensions, which include content, accuracy, format, ease of use, and timeliness. The content dimension reflects how well the system delivers useful and relevant information, including the functions and modules it provides. The accuracy dimension focuses on the system's ability to process data correctly and present information precisely. The format dimension relates to the visual layout and appearance of the system, including whether the design helps users interpret and use information easily. The ease of use dimension emphasizes how simple and user-friendly the system is in terms of navigation and operation. The timeliness dimension evaluates whether the system delivers needed information quickly and at the right time.

To achieve high satisfaction, it is essential to conduct thorough user research, testing, and analysis. Development and design teams must work closely to ensure that the system meets user needs effectively and supports their tasks with maximum efficiency.

2.3. Variable Scale

The variable measurement in this study uses a Likert scale, where each response category is assigned a score from 1 to 5. "Strongly Agree" (SS) is given a score of 5, "Agree" (S) is scored 4, "Neutral" (N) is scored 3, "Disagree" (TS) is scored 2, and "Strongly Disagree" (STS) is given the lowest score of 1. This scoring system allows researchers to quantify user perceptions and satisfaction with the SMILE application based on the End-User Computing Satisfaction (EUCS) framework.

The EUCS dimensions used in this study consist of five variables: Content, Accuracy, Ease of Use, Format, and Timeliness. Each dimension is measured using multiple question items relevant to user experience. Under the Content dimension, the questions assess whether SMILE is easy to use, whether it requires a stable network, and whether it has functional limitations in managing data and information. The Accuracy dimension includes items that measure whether SMILE can be used simultaneously by several users, whether it has an adequate security system, and again whether it depends on a stable network connection. The Ease of Use dimension includes questions that explore how easy SMILE is to operate and whether it requires a long learning curve. For the Format dimension, questions focus on whether the layout design of SMILE is attractive, whether the information presented is clear, and whether the color composition is visually engaging. Lastly, the Timeliness dimension includes assessments of whether SMILE provides quick responses and whether it is easily accessible to users.

3. RESULTS AND DISCUSSION

This study evaluates user satisfaction with the SMILE application at BPJS Ketenagakerjaan Tanjung Morawa Branch using the End-User Computing Satisfaction (EUCS) method. The EUCS framework consists of five key variables: Content, Accuracy, Ease of Use, Format, and Timeliness.

Data was collected through questionnaires distributed to 13 internal users. Each question used a Likert scale and was validated using the Pearson Product-Moment correlation method. The following are the results of the analysis:

3.1 Content

The Content variable measures whether the information provided by the system is complete, relevant, and meets users' needs.

Table 1. SMILE is Easy to Use by Users

Response	Frequency	Percentage
Strongly Agree	6	46.2%
Agree	7	53.8%
Neutral	0	0%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 1 shows that 100% of users agree or strongly agree that SMILE is easy to use, indicating the system provides content that is understandable and meets users' expectations.

Table 2. SMILE Requires a Stable Network Connection

Response	Frequency	Percentage
Strongly Agree	3	23.1%
Agree	8	61.5%
Neutral	2	15.4%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

According to Table 2, 84.6% of users agree that SMILE requires a stable internet connection, which reflects a technical dependency that needs improvement for better usability.

Table 3. SMILE Has Functional Limitations in Managing Data and Information

Response	Frequency	Percentage
Strongly Agree	2	15.4%
Agree	4	30.8%
Neutral	3	23.1%
Disagree	4	30.8%
Strongly Disagree	0	0%
Total	13	100%

Table 3 indicates that opinions are split; 46.2% perceive limitations in SMILE's functionality, while 30.8% disagree. This suggests opportunities for system enhancement.

3.2 Accuracy

This variable assesses how accurate and reliable SMILE is in presenting and processing information.

Table 4. SMILE Can Be Used by Multiple Users Simultaneously

Response	Frequency	Percentage
Strongly Agree	1	7.7%
Agree	3	23.1%
Neutral	1	7.7%
Disagree	4	30.8%
Strongly Disagree	4	30.8%
Total	13	100%

Table 4 reflects low satisfaction regarding multi-user capability, with 61.6% disagreeing or strongly disagreeing. This indicates a clear area for technical improvement.

Table 5. SMILE Has a Security System

Response	Frequency	Percentage
Strongly Agree	6	46.2%
Agree	5	38.5%
Neutral	2	15.4%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 5 shows strong approval of the system's security, with 84.7% of respondents agreeing or strongly agreeing.

3.3 Ease of Use

This variable focuses on the ease with which users can learn and operate the system.

Table 6. SMILE is Very Easy to Use

Response	Frequency	Percentage
Strongly Agree	3	23.1%
Agree	8	61.5%
Neutral	1	7.7%
Disagree	1	7.7%
Strongly Disagree	0	0%
Total	13	100%

Table 6 shows that 84.6% of users found SMILE easy to use, although a small percentage reported neutral or negative experiences.

Table 7. SMILE Does Not Take Long to Learn

Response	Frequency	Percentage
Strongly Agree	4	30.8%
Agree	8	61.5%
Neutral	1	7.7%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 7 confirms that SMILE is intuitive, with 92.3% of users agreeing it does not take long to learn.

3.4 Format

This variable evaluates the visual design and clarity of information presentation.

Table 8. SMILE Displays an Attractive Layout Design

Response	Frequency	Percentage
Strongly Agree	3	23.1%
Agree	9	69.2%
Neutral	1	7.7%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 8 shows high satisfaction with the visual interface, with 92.3% agreeing that the layout is attractive.

Table 9. The Information Display is Clear

Response	Frequency	Percentage
Strongly Agree	4	30.8%
Agree	6	46.2%
Neutral	3	23.1%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 9 indicates 76.9% of respondents feel the information is clearly presented, although 23.1% remain neutral.

Table 10. SMILE Uses Interesting Color Composition

Response	Frequency	Percentage
Strongly Agree	5	38.5%
Agree	5	38.5%
Neutral	3	23.1%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 10 shows positive feedback on the color scheme, with 77% approval.

3.5 Timeliness

This variable relates to the responsiveness and accessibility of the system.

Table 11. SMILE Provides Quick Response

Response	Frequency	Percentage
Strongly Agree	4	30.8%
Agree	8	61.5%
Neutral	1	7.7%
Disagree	0	0%
Strongly Disagree	0	0%
Total	13	100%

Table 11 shows high responsiveness of the system, with 92.3% agreeing that SMILE performs efficiently.

Table 12. SMILE is Easy to Access

Response	Frequency	Percentage
Strongly Agree	3	23.1%
Agree	8	61.5%
Neutral	1	7.7%
Disagree	1	7.7%
Strongly Disagree	0	0%
Total	13	100%

Table 12 shows 84.6% of users find SMILE easy to access, further supporting the system's timeliness and reliability.

In terms of content, all respondents agreed or strongly agreed that SMILE is easy to use and provides relevant information. This suggests that the application has succeeded in delivering content that meets user expectations. However, more than 84% of users indicated that a stable internet connection is required for optimal usage. This implies a dependency that could limit performance in unstable network conditions. A similar observation was made in a study by Ependi et al. [10], where systems with high content satisfaction still required

better infrastructure support to ensure uninterrupted access. Additionally, user feedback showed that opinions were divided regarding the system's functional capabilities in managing data and information, with 46.2% acknowledging limitations. This suggests the need for further development of the system's back-end capabilities to improve its content delivery in complex operational scenarios.

Regarding accuracy, the findings indicate a mixed perception. While the application was praised for having a robust security system, with over 84% of respondents agreeing or strongly agreeing, a majority expressed dissatisfaction with its ability to support multiple users simultaneously. About 61.6% disagreed or strongly disagreed with this feature, which is a significant drawback, especially for collaborative work environments. Similar issues were noted in the research conducted by Valya et al. [11], where multi-user access limitations were found to negatively affect the performance of public health data systems. Hence, improving SMILE's concurrent usage capability could significantly increase its perceived accuracy and reliability.

The ease of use dimension received highly favorable responses. Most users, or 92.3%, agreed that SMILE is easy to learn and operate. This demonstrates that the user interface is intuitive and requires minimal training. This aligns with the findings of Saifulloh and Asnawi [8], who emphasized that systems designed with user-centered principles are likely to increase user engagement and reduce resistance to technology adoption. Maintaining this simplicity should remain a priority in future updates to avoid introducing complexity that could hinder usability.

For the format dimension, users responded positively to the visual presentation and interface layout. Over 92% found the layout attractive, while more than three-quarters appreciated the clarity of the information and the use of appealing color schemes. These findings are consistent with Narmansya's [9] study, which highlighted the importance of interface aesthetics in maintaining user interest and reducing cognitive load. However, the neutral responses regarding information clarity suggest there may still be a need to enhance the visual hierarchy or text formatting to ensure that all users can interpret the data efficiently.

Finally, in terms of timeliness, 92.3% of users stated that SMILE responds quickly to input, and 84.6% found it easy to access. These results indicate that the system performs well in delivering information when needed, a key requirement for decision-making and workflow efficiency. This supports the conclusions of Ependi et al. [10], who found that timely data access significantly boosts user confidence and operational responsiveness.

In summary, the SMILE application demonstrates strong performance in ease of use, visual design, and response speed. However, it requires improvements in multi-user functionality, dependency on internet connectivity, and expansion of core functionalities. Aligning future development efforts with user expectations, as measured through the EUCS framework, will be essential to enhance the overall user experience and operational efficiency of the system.

4. CONCLUSION

The results of this study are based on an analysis using the EUCS method with data from 13 respondents taken from the internal environment. This indicates that SMILE can be further developed and updated to make the system more effective in managing data and information, as well as improving user satisfaction in various aspects such as accuracy, ease of use, and security. Such development is crucial to ensure that SMILE continues to meet user needs more effectively and remains reliable over time.

In this study, the investigator can provide at least a small amount of something useful that can help in the development of existing science both in the area studied and in further research. After doing this research, the researcher gives advice on the problem that has been studied. Researchers have already conducted an evaluation of the SMILE system in the management of data and information, some users say in the same use of time users disagree and strongly disagreed with it recommends on further research to further update this SMILE to improve the quality of SMILE.

REFERENCES

- [1] Adianto, T., Ali, Y., & Saptono, E. (2020). Risk Assessment of Cyber Attacks Information Security Management System. *Defence Management*, 6(1), 52-72.

- [2] Adolph, S., Cockburn, A., & Bramble, P. (2003). *Patterns for Effective Use Cases*. Boston: Addison-Wesley Professional.
- [3] Agung, L. (2015). *Build a Computer Networking System for Beginners*. Yogyakarta: Andi Medcom.
- [4] Amin, M. M. (2020). *Application Development*. Yogyakarta: Graha Ilmu.
- [5] Arifin, Z. (2018). *Wireless LAN Security System*. Yogyakarta: Andi Publisher.
- [6] BPJS Ketenagakerjaan. (2021). BPJS Employment. Retrieved April 1, 2023, from <https://www.bpjsketenagakerjaan.go.id/about-us.html>
- [7] Safaat, N. (2011). *Android: Android-based Smartphone and Tablet PC Mobile Application Programming*. Bandung: Informatika.
- [8] Saifulloh, & Asnawi, N. (2015). Evaluate Interface Design with a User-Easy Approach (Studi Kasus Mobile App Sport Galaxy Center). *DASI Scientific Journal*, 16(4), 55-58.
- [9] Narmansya, S. (2022). *Analysis of the Usage of JKN Mobile Information Systems in Makassar City*. Hasanuddin University.
- [10] Ependi, U., Syafari, R., & Maharani, P. (2018). End User Computing Satisfaction On Website Regional Library of South Sumatra. *Jurnal Teknologi Informasi*, 3(1), 35-46.
- [11] Valya, R., Puspita, A., & Milla, H. (2022). Evaluation of Data and Information Management of the COVID-19 (Corona Virus Disease 19) Vaccination Programme in the Lampung Region in 2021. *Bikfokes*, 2(2), 106-115.