HOSPITAL'S REDOWSKO APPLICATION FORMS AND INFLUENCE IN ACTION

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ABSTRACT

The rise of the current digital era brought by further sophisticated technology increases access to global information and advancement in various industry application. In 2012, Hospital Accreditation Commission KARS launched an application to assist hospitals in accreditation assessment. Due to the lack of understanding and perception of accreditation standards, improvements were made to develop new standards using a methodology called ReDOWSKo. This study will look into measuring the use between ReDOWSKo application and book form. Data was collected using google form questionnaire and analyzed using descriptive statistic and correlation method. The results show there is a relationship between the ReDOWSKo assessment in the form book and application with the nature of weak and unidirectional relationships. In this case the application is used to help remember important elements in accreditation. There is also correlation that is statistically significant between application users and book users and there is a positive relationship between the use of ReDOWSKo book form with application form. This application relatively new, and have little literature found while the use of the ReDOWSKo application is indeed considered not yet optimal. This study suggest it would require time for adoption of the use of the application that could enhance the effectiveness of ReDOWSKo. Therefore, will include upgrading the application and further socialization and training in the upcoming years.

Keywords: ReDOWSKo, health application, hospital accreditation, accreditation instrument, accreditation survey

INTRODUCTION

The rise of the current digital era brought by further sophisticated technology increases access to global information and advancement in various industry application. The emergence of mobile application is the most important factor for an organization is to have a competitive advantage in Indonesia. In recent years, especially in Indonesia government, profit to non-profit organization (NGO) have shifted from the conventional approach to knowledge and finding support in information communication and technology (ICT) infrastructures (Hidayat, 2016). Likewise in the hospital industry that prioritizes services for hospital patients.

Hospital accreditation standards are prepared as an effort to improve the quality of health services in hospitals and carry out the mandate of Law Number 44 of 2009 concerning Hospitals that require hospitals to carry out accreditation in order to improve the quality of services in hospitals at least within a period of once every three years. Hospitals are run based on Pancasila, with the foundation of human values, ethics and professionalism, benefits, justice, equal rights and anti-discrimination, equity, protection and patient safety, and have a social function. Arrangements for the organization of hospitals aim to facilitate public access to health services; provide protection for patient safety, the community, the hospital environment and human resources in the hospital. One organization that provides hospital application facilities is the Hospital Accreditation Commission (KARS).

KARS is a national nonprofit accreditation agency that guides and assists hospitals in improving service quality and patient safety through accreditation. Recognized by The International Society for Quality in Health Care (ISQua). In 2012, KARS launched an application to assist hospitals in accreditation assessment. The 2012 version of the application

was originally able to help the hospital manage the achievement of the accreditation assessment, but after almost 6 years, the application received many complaints. Among them are input from the user that is the lack of understanding of accreditation standards (2012 version) between surveyors and surveyors or between the hospital and surveyors. After analysis it is related to the following matters. With the help of the application, the services provided can make it easier for hospital patients to make any transactions at the hospital.

Following the trend of mobile application, promoting such application such as access to point-of-care medical content could to reduce errors, costs and improving outcomes dan effectiveness of results (Gouin-Vallerand, 2014). A Health Mobile Application enabled users to access personal health record at any time and place be accessible to every user (Kim et al., 2016). Indonesia at present has 2,864 hospitals, must be accredited every 3 years. Indonesian Hospital Accreditation Commission (KARS) as a national accreditation institution has carried out accreditation activities since 1995, now KARS has 709 surveyors.

The number of surveyors which were very numerous at that time was approximately 560 surveyors (currently in 2019 around 1000 surveyors) divided into 3 groups, namely the medical, nursing, and management groups. The different background experiences between each surveyor causes each surveyor to have different opinions due to different work experiences. Each surveyor who has background experience in the field of hospital which can be said to be quite senior causes each surveyor to feel that he is the most correct.

Furthermore, there are problems with existing standards. Standards that can lead to double interpretation both grammatically or in perception of language or perception of standards. This is due to the 2012 version which is a translation of the United States 4th edition of the Joint International Commission (JCI) and the translation is poor (lack of understanding of accreditation terms). Challenges: to ensuring the same understanding of accreditation standards between each surveyor and between surveyors and hospital managers.

Based on these difficulties and to improve the accreditation performance of KARS, a national hospital Accreditation standard (SNARS edition 1) was implemented as of January 1, 2018. Improvements made were to develop new standards in Indonesian (then translated into English) this minimizes confusion in Indonesian grammar. In addition, a new innovation called the SNARS instrument edition 1 was compiled, which is the embodiment of all that is required by the assessment elements in the standard. The preparation uses a methodology called ReDOWSKo initiated by dr. Nico Altin Lumenta, a nephrologist consultant.

In the light of the challenge of innovating standardizing accreditation instruments in the form of questionnaires related to regulations, documents, interviews, simulations, and confirmations (in Indonesian abbreviated as ReDOWSKo) both in the form of books and android-based applications The regularity in this classification is expected to discourage different interpretations between surveyors or surveyors and hospitals. This study will look into measuring the success of such application, aiming to present the results of the ReDOWSKo evaluation both for surveyors when conducting surveys and for hospital managers during preparation for their hospital accreditation.

LITERATURE REVIEW

Technological innovations support people's daily lives including various processes and is used as the foundation for economic exchange contributing to value creation (Bruns, 2014). Smartphones have transformed, empowering use for communication but also for tracking and maintaining health fitness (Peddi, 2015). Mobile application usage is intermittently throughout

following a certain routine (Ferreira, 2014). There are various perceived benefits from mobile apps including instrumental, experiential, identity, and social benefits (Larivière et al., 2013).

Instrumental benefits of using mobile application refer to achieving objective external to the interactions between an app and a user leading to enhanced performance and productivity (Yoo, 2010). Mobile app is also studied to enable higher cognitive involvement by functionality (Voss et al., 2003). In contrast, identity benefits see the extent of expressive of one's social or personal identity through the use of mobile application. Meanwhile, social benefits refer to the extent individuals are through a mobile application (Ding, 2015). Furthermore, the experiential benefits is the extent of fun a user experiences when using a mobile app (Venkatesh et al., 2012).

Rising trend of application in healthcare can also be seen for instance in the case of home care services as a strategy to offer customized treatment to fragile patients (Araujo, 2015). The continuity of mobile application use in medical care is essential to the improvement of health service quality and healthcare coverage, such as home consultations, improvement to the treatment results, etc. This suggests an evergrowing architecture to support healthcare integration and automation different tasks related to increasing quality of health care, reducing errors related to misunderstanding or different perceptions, such in the case of ReDOWSKo implementation.

Re stands for regulation, which is an implementation of existing laws and regulations that must be applied in hospitals in the service. R is always put as the first assessment element (EP1) because we consider that regulation is very important, especially in assessing compliance with legislation. The number of regulations in the R category can be more than 1 combined so that the regulatory interests do not exceed the interests of the service application. (I mean the important thing is that the practice is not the theory) and there are only a few where there are regulations in EP 1 and EP 2 and the comparison between regulations and proof of implementation is around 1: 3 or 4.

DO stands for document, which is a document that is needed to prove that there is a preparation process for the preparation of regulations (meetings - meetings, etc.). Other documents include evidence of the implementation of regulations in the field, which are usually documented in the medical record.

W stands for interview. To prove the implementation of regulations in the hospital can be seen from the document (D), interviews (W) on hospital staff, or patients and families, observation (O) or field observations whether the regulations are implemented correctly

S stands for simulation. surveyors may ask certain staff to demonstrate the skills needed in their duties at the hospital such as hand washing, firefighting with APAR (light fire extinguishers) or with HIDRAN (CODE RED team) then each hospital staff is required to be able to perform CPR (pulmonary heart resuscitation) and have a CODE BLUE (heart recitation) TEAM if someone faints in the hospital area.

Ko stands for confirmation is a way for surveyors to cross check data to prove the truth, for example, from documents confirmed by interview, for example, the name is absent, the signature is in accordance with reality.

There is still little research on related mHealth apps especially in Indonesia. Application and integration of information technology and use of mobile application within Indonesia's healthcare is still at its preliminary stages –needing further research to collection data and information to support several diagnoses, studying its impact on both for clinical to nonclinical use. This relates to also the case of KARS in its new methodology implementation, classifying instruments into the categories of *Re-DO-W-S-Ko.*

This study will look into the forms and influence of ReDOWSKo in action, adopting the perceived utility and the gratification for the usage of the mobile application (Alexander,

2004). Several indicators could be measured through the exposure from multiple perspectives (Chan-Olmsted & Chang, 2006), the extent of usage for a mobile app, the intensity such as length and frequency of usage (Hwang et al., 2016)**.** Therefore, this study will inquire ReDOWSKo users (Official KARS Surveyors, Hospital Directors and Healthcare Professionals) in comparison to the usage of preexisting ReDOWSKo physical book, and whether there is a relationship between ReDOWSKo assessment in book form and application form.

RESEARCH METHOD

The method used in this study is the correlation method to determine the relationship between ReDOWSko in the form of applications (Fig. 1) with the form of books. In this case the survey was conducted to the surveyor. Data collection was done by sending a google form-based questionnaire to surveyors and hospital managers. These questions include:

- Do you use the ReDOWSKo application available on Google Play?
- Do you use the ReDOWSKo book?
- If you use ReDOWSKo both in book form and application, which one do you use more?
- In your search, what is the biggest benefit of ReDOWSKo in search?
- What do you think is the least benefit of ReDOWSKo in search?
- For you surveyors, what is the most useful ReDOWSKo for?
- For you, which hospital accreditation team, ReDOWSKo is most useful for?
- In your opinion, how do you compare ReDOWSKo with previous KARS accreditation guidelines?
- Overall how would you rate ReDOWSKo in book form?
- Overall, how would you rate ReDOWSKo in the application form?

Questions are based on a Likert scale, data is processed statistically descriptively simple.

Figure 1. ReDOWSKo Mobile Application Interface Example
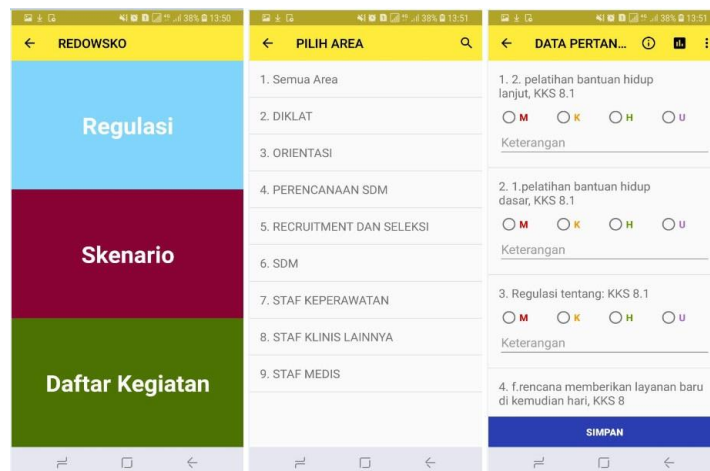
Correlation analysis is a collection of techniques to measure the relationship between two variables (Lind et al., 2018). Correlation is the relationship (association) between variables of interest. Correlation wants to test whether the sample data provides sufficient evidence, with the intention that there is a link or relationship between each variable in the population from which the sample originated. If there is a relationship, how strong is the relationship between

these variables. The closeness of the relationship is stated by the name of the correlation coefficient. According to Lind, Marchal, & Wathen (2018), the correlation coefficient is a measure of the strength of a linear relationship between two variables. The magnitude of the correlation coefficient ranges from +1 to -1. The correlation coefficient shows the strength of the linear relationship and the direction of the relationship between the two random variables.

If the correlation coefficient is positive, then the two variables have a direct relationship. This means that if the value of variable X is high, then the value of variable Y will be high too. Conversely, if the correlation coefficient is negative, then the two variables have an inverse relationship. This means that if the value of variable X is high, the value of variable Y will be low and vice versa. To facilitate the interpretation of the strength of the relationship between the two variables the authors provide the following criteria:

- 0: There is no correlation between the two variables
- > 0 - 0.25: Correlation is very weak
- > 0.25 - 0.5: Correlation is sufficient
- > 0.5 - 0.75: Strong correlation
- > 0.75 - 0.99: Correlation is very strong
- 1: Perfect correlation

RESULTS AND DISCUSSION

A total of 502 people filled out the questionnaire, consisting of 102 (20.3%) surveyors, 354 (70.5%) hospital manager and 46 (9.2%) surveyors as well as hospital managers. Results suggests 434 (86.5%) respondents used ReDOWSKo in book form and 263 (52.4%) in application form, and 49 (10%) respondents did not use both (Fig. 2). In addition, 70.1% respondents considered the greatest benefit of ReDOWSKo were to help with the regulatory and document search process 56,8% respondent considered the smallest benefits were for the simulation and confirmation process. **It can be assumed that the use ReDOWSKo book form is significantly more preferred for all professions than mobile applications.**

The surveyors considered ReDOWSKo primarily helped to guide the survey process (30.2%), while for hospital managers to conduct a self-assumption process (46.9%). Compared to the previous KARS instrument, ReDOWSKo was considered better by 50.7% of respondents, while the other 33.3% considered that each had its own advantages. Respondents gave feedback on improvements to ReDOWSKo android-based applications mainly related to user friendliness, completeness of the contents of the instruments, and explanation for their use.

Figure 2. Respondents Use Between ReDOWSKo Book Form and Application Form
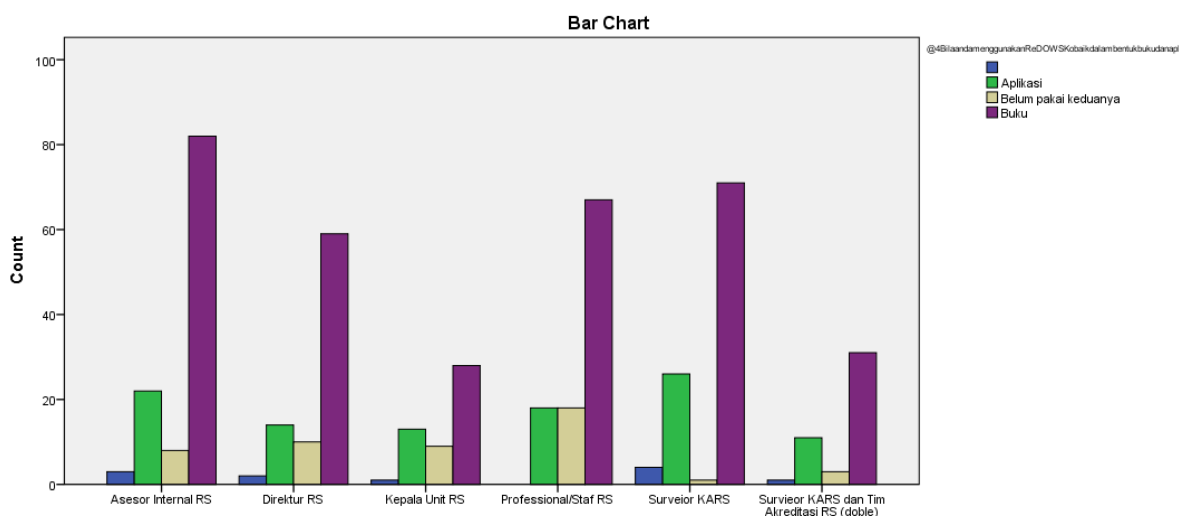
Crosstabulation position data surveyed with comparison between old and new accreditation methods comes to the conclusion that 50% of respondents felt the use of ReDOWSKo was better than KARS 2012, while the remaining 33.1% felt that both accreditation methods felt that they had their own advantages. Based on Table 1, study test on hypothesis analysis:

- Ho: There is no relationship between ReDOWSKo assessment in book form and mobile application form.
- Ha: There is a relationship between ReDOWSKo's assessment in book form and mobile application form.

Basis of Decision Making

Sig >= a => Ho Accepted
Sig < a => Ho Rejected
< 0.05 => Ho Rejected

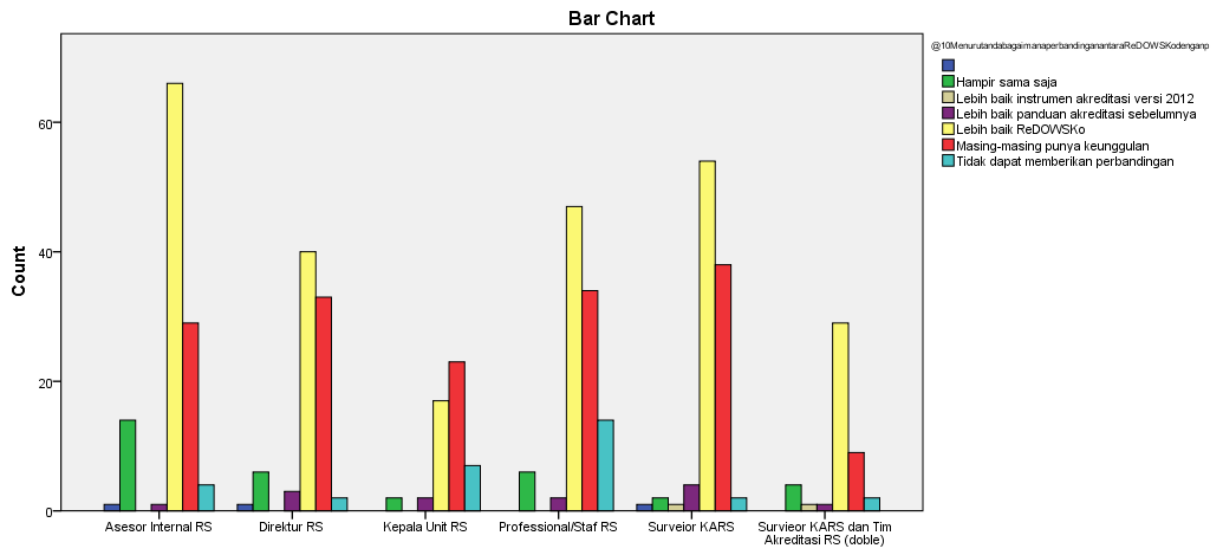**Relationship**

0,396 => Weak and Unidirectional

Table 1. Correlations Between ReDOWSKo Book and Application Form

		Overall how would you rate ReDOWSKo in book form?	Overall how do you rate ReDOWSKo in the application form?
Overall how would you rate ReDOWSKo in book form?	Pearson Correlation	1	,396**
	Sig. (2-tailed)		,000
	N	502	502
Overall how do you rate ReDOWSKo in the application form?	Pearson Correlation	,396**	1
	Sig. (2-tailed)	,000	
	N	502	502

**. Correlation is significant at the 0.01 level (2-tailed).

The results also show the number of respondents who perceived the use of ReDOWSKo was better than KARS 2012 was significant with a p-value of 0.003.

Figure. 3 Respondents Comparison Perceived Uses between ReDOWSKo Book to Mobile Application

So, there is a relationship between ReDOWSKo assessments in the form of applications with the nature of weak and unidirectional relationships. ReDOWSKo significantly facilitates accreditation compared to before the use of ReDOWSKo p-value of 0.003. Books are significantly more used than applications with p-value of 0.021. And finally, there is significant correlation between application and book forms with p-value of 0,000.

This means that the use of applications must continue to be socialized and improved so that more is used compared to books, because there is an apparent significant relationship between the use of applications and books. Reasons may be related to the network problems and availability of between regions across Indonesia. Indonesia is a vast area consisting of more than 7000 islands and most of it is ocean. The stretch from *Sabang* to *Merauke* (the West end to the East end of Indonesia) is the same as the distance between the west coast to the east coast of the United States. This presents a challenge for network in Indonesia, although there is future plans of a stronger 4G network infrastructure by 2020 that will help support the use of application throughout Indonesia.

Familiarity to the used of IT applications among hospital directors and heads of units in hospitals are evidently the lowest, it can be speculated that the cause is the low familiarity to the use of IT. This would require time to adoption, for the use of the application that could enhance the effectiveness of ReDOWSKo. Thus, will include upgrading the application itself and further socialization and training in the upcoming years.

CONCLUSIONS

Mobile phones have multi purposes application in healthcare industry to assist people in various contexts and tasks. The ReDOWSKo accreditation instrument has been well socialized and has been used primarily in book form and is considered useful by both surveyors and hospital managers. The increasing integration of mobile application into people's daily lives demonstrates the importance of this research context in KARS's case.

The first conclusion of this research is that there is a relationship between the ReDOWSKo assessment in the form book and application with the nature of weak and

unidirectional relationships. Therefore, the use of more applications must be maximized so that functional applications could run more effective and efficiently. Based on the results, the application user is maximized because it is already at a 50.02%. In this case the application is used to help remember important elements in accreditation which have an assessment element of 13.64%. This application relatively new, and have little literature found on the use of applications as a tool for surveyors.

In addition, the use of the ReDOWSKo application is indeed considered not optimal in its implementation, and users are yet to familiarize with its use in the accreditation process. Therefore, the application is still not in optimal use, where surveyors analyze and input results of accreditation data into the application. From the data results, there is also correlation that is statistically significant (p-value <0.05) between application users and book users, meaning that if application users increase it can have a positive impact on book users as well and vice versa. The final conclusion in this study is that there is a positive relationship between the use of ReDOWSKo book form with application form.

This study is subject to certain limitations, first the questionnaire was conducted using online questionnaires via google form which was an appropriate method for collecting data due to geographical constraints. Future studies could implement more systematic sampling methods to gather more diverse samples. Second, the study focuses specifically on the ReDOWSKo apps which results may not apply to other forms of apps. Other limitation results from the specific context in which we analyzed the ReDOWSKo in the KARS context, hospital application. Future research should investigate other m-health related cases. Future research data could adopt a qualitative study approach to further examine in the particular area of application usage and perceived usefulness or benefits, technology adoption readiness, including the different personality types of users.

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