

Correlation between University Accreditation and Web-based Intellectual Capital Disclosure

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Abstract. Along with the development of technology and the internet, information disclosure can be done through a wide variety of online media. Higher education or university is part of a public organization and its accreditation is also one of the considerations for the community. This research aims to find out the correlation between university accreditation and intellectual capital disclosure at Public Universities in Indonesia. The research data was taken from the official website of Public Universities in Indonesia. The results showed that from 85 university samples, accreditation variables correlated with intellectual capital disclosure with a relatively low level. The majority of universities with “Good” and “Excellent” accreditation have low level of intellectual capital disclosure, while universities with “Superior” accreditation have medium level of intellectual capital disclosure. The better university accreditation also increase the quality of intellectual capital disclosure provided on the official website. Despite existing limitations, the study provides practical implications as a university reference on the importance of correlation between accreditation and intellectual capital disclosure.

Keywords: Accreditation, Intellectual Capital Disclosure, Universities, Website.

1 Introduction

In this current digitalization era, disclosure of information from companies are something that’s needed by the public. Internet presence makes all activities easier. Along with the development of technology and the internet, information disclosure can be done through a wide variety of online media. One of the online media is website that allow companies to disclose their website content in consideration of the update’s timing [1].

One of the disclosures that can be disclosed through website is intellectual capital. Most intellectual capital disclosure research is only carried out based on the analysis of annual reports as a source of data, due to its availability which is easily obtained and widely used by previous researchers [2]. Today, intellectual capital is beginning to receive attention from community organizations, research centers and universities [3]. Most research on knowledge management and intellectual capital is focused just in private sector companies, while disclosure of intellectual capital in public organizations’ website is still very minimal [4].

Higher education or university is part of a public organization. In education and learning field, university as a producer of knowledge that has outputs in the form of science, research, publications, and productive relationships with stakeholders [5]. Intellectual capital in the public sector, especially universities is one thing that needs to be considered because in some ways it also affects the level of competitiveness of a country [6] and if the trend of intellectual capital mobilization is maintained, then the country's competitiveness can be improved through its universities [7].

As an educational institution, university’s accreditation is also one of the considerations for the community in determining the education quality. Based on statistical data Indonesian Higher Education on 2020 [8], the most accreditation of all Indonesian universities are still at “C or “Good” accreditation, then followed by “B or Excellent” accreditation, and “A or Superior” accreditation has been the lowest.

Accreditation of public universities has not been evenly distributed throughout Indonesia, only on Java and Bali, which are dominant universities with “ A or Superior” accreditation and there are even still public universities that have not been accredited [8]. Even though, this accreditation is very important for the sustainability of the institution. Accreditation status can affect the intellectual capital disclosure, because the better accreditation it has, the better quality of information management and addition of intellectual capital value to universities [9].

Nevertheless, in the existing literature a number of relevant concepts of university accreditation towards website based intellectual capital is not only influential, but also no influential. Thus, the relationship between accreditation and intellectual capital disclosure that made on the website still needs attention, in order to answer consistently regarding the relationship between the two. Previous research that has discussed accreditation and intellectual capital disclosure from Fathony and Ulum [10], Aulia et al. [11] and Gobel et al. [12], the majority of the results of his research only state that there is / is no influence between university accreditation and intellectual capital. Through this study, researchers tried to examine more deeply how the level of relationship between university accreditation and intellectual capital is revealed based on websites.

Based on the background described, this study purpose to determine correlation between university accreditation and intellectual capital disclosure expressed through its official website. The results of this research

are expected to be used by state university managers and the Directorate General of Higher Education, as well as related parties as one of the references in the next relevant research.

2 Literature Review

2.1 Stakeholder Theory

Stakeholder theory emphasizes organizational accountability far beyond simple financial or economic performance [13]. The organization will voluntarily disclose information on its environmental, social and intellectual performance, exceeding the information that must be disclosed in meeting the expectations of stakeholders. By disclosing detailed organizational information to the public, it is hoped that stakeholders will get the information they need regarding the organization [14]. Website of university is a means to make it easier in the process of distributing data and information to the public or stakeholders who need it. Stakeholders in universities according to include: primary stakeholders (academic community), and secondary stakeholders (state, general public, prospective new students, private sector companies, and so on) [15].

2.2 Web-based Disclosure and Intellectual Capital

Conceptually, disclosure is an integral part of financial reporting. Technically, disclosure is the final step in the accounting process, which is the presentation of information in the form of a full set of financial statements [16]. Website based disclosure is a voluntary disclosure, as it is not mandated by an accounting regulator. Beside that, as technology evolves, websites allow companies to disclose their website content in consideration of the timing of updates. Thus, website as means of disclosing information with special technological features that make it easier for interested parties to find all the latest information that can be accessed anytime and from anywhere worldwide [17]. Intellectual capital emphasizes the combination of intelligence and capital to demonstrate the importance of knowledge. According to Ramirez et al. [18] three main and interrelated components of each other that represent intellectual capital are stated as follows:

- a) Human Capital: the entirety of real and hidden knowledge from the academic community (lecturers, researchers, structural officials, educational staff) obtained by taking formal and non-formal education.
- b) Structural Capital: hidden knowledge in the process of internal socialization, science-management insights, communication and technical insights in universities.
- c) Relational Capital: collection of all economic, institutional, and political interactions formed and developed by university agencies with non-academic partners (for example: business organizations, government institutions, other non profit organizations, and society). In addition, it also includes public perceptions of higher education institutions: such as the description of the institution, the attractiveness of the institution, the reliability of the institution, and so on.

2.3 University Accreditation

University Accreditation or Higher Education Accreditation (APT) is an assessment activity to determine the feasibility of Higher Education [19]. Based on the Regulation of National Accreditation Board for Higher Education No. 1 on 2020, the results of the accreditation carried out consist of:

- a) A, B, and C for accreditation carried out with 7 Standards accreditation instruments; and
- b) “Unggul” (Superior), “Baik Sekali” (Excellent), and “Baik” (Good) for accreditation done with IAPS 4.0 and IAPT 3.0.

2.4 The Correlation University Accreditation and Web-based Intellectual Capital Disclosure

According to stakeholder theory, intellectual capital disclosed through the website can assist stakeholders in fulfilling the information needed. Universities that have been accredited, are able to become an information mediation to many parties such as prospective students, parents, and even the labor market and the government, and become an added value to the university itself [11]. Based on inconsistency results of previous research from Fathony and Ulum [10], Aulia et al. [11] and Gobel et al. [12] about influence of accreditation and intellectual capital, the hypothesis can be stated as follows:

H1 : there is a positive and significant correlation between university accreditation and intellectual capital disclosure.

3 Methods

This type of research is correlational with intention of knowing the relationship of variations in a variable with other variables. The population in this study are public universities registered for the UniRank Indonesia 2021. Researchers used purposive sampling for sampling technique. The sample selection procedures are in table 1:

Table 1. Number of samples

Criteria	Number
Public universities version UniRank 2021	86
Official website university is not accessible	(1)
Number of samples	85

For intellectual capital disclosure variable in this study, researchers tried to combine and modified the website based intellectual capital disclosure framework refers to Ramirez et al. [18] with AQAS Criteria Institution Accreditation [20]. The study used an instrument consisting of 23 items. First, for content analysis of website based intellectual capital disclosure approach used weighted index with six-ways numerical coding system as done by Ulum [21] consisting of:

- 0: if the information item is not disclosed;
- 1: if the item of information is disclosed only the title without any content;
- 2: if the information item is expressed in a narrative;
- 3: if the information item is expressed in number;
- 4: if the information item is disclosed in monetary;
- 5: if the item of information is expressed in graphic/image.

Next, formula for calculating the index of intellectual capital disclosure items following the research by Rossi, et. al. [22]:

$$ICD = \frac{\sum_{i=1}^l d_i}{l}$$

Where:

$$\sum_{i=1}^l d_i = \text{score that obtained in the disclosure of IC items (content);}$$

$$l = \text{maximum score available in the intellectual capital items (80).}$$

Furthermore, the level of intellectual capital disclosure by each university (in a website) will be calculated with formula above.

Status of accreditation obtained from National Accreditation Board for Higher Education or BAN-PT. From 85 universities there are 3 types of accreditation which will be measured by being given a score, if A or “Unggul” (Superior) is given a score of “3”; if B or “Baik Sekali” (Excellent) is given a score of “2”; and if C or “Baik” (Good) is given a score of “1”.

The data collection technique in this study used documentation studies obtained from UniRank Indonesia and the websites of each university. Research data collection was carried out from January 2022 to March 2022. In analyzing data, there are three steps that will be followed:

a) Content analysis

Content analysis aims to explain the practice of intellectual capital disclosing at the official website of Indonesian public universities. At this stage, a content analysis of the intellectual capital component is carried out revealed by the university on its official website.

b) Data categorization

Categorization of data or categorization of scores obtained from intellectual capital disclosure variables. Categorization is used to find out an overview of the level of intellectual capital disclosure of state universities. The categorization method is divided into 5 categories with the formula [23]:

Very Low	$X < M - 1.5SD$
Low	$M - 1.5SD < X < M - 0.5SD$
Medium	$M - 0.5SD < X < M + 0.5SD$
High	$M + 0.5SD < X < M + 1.5SD$
Very High	$M + 1.5SD < X$

c) Correlation analysis

The correlation analysis used in this study is Spearman Rank to determine the relationship between accreditation and intellectual capital disclosure. Spearman's ranking correlation measures the close or absence of the relationship between two ordinal variables. As for providing the interpretation of the correlation coefficient, the guideline criteria for the following correlation coefficients are used [24]:

0.00 – 0.20	Almost no correlation
0.21 – 0.40	Low correlation
0.41 – 0.60	Medium correlation

0.61 – 0.80	High correlation
0.81 – 1.00	Perfect correlation

4 Result and Discussion

4.1 Finding of the content analysis on universities website

Table 2 shows result obtained for the intellectual capital information disclosed by Indonesian public universities on their website. It includes the format disclosure for each IC component. Regarding from content categories, the IC components that most disclosed are about “university culture, management philosophy, management process, and information system in the structural capital category. In relational capital, there are “quality standard and public information”. It was seen, 85 public universities (100 percent) disclosed these items. Based on these findings, it can be stated that the universities studied are more likely to disclose information about the components of structural capital and relational capital than human capital. This is because information about structural capital and relational capital are seen as more important to disclose to stakeholders, so disclosure is prioritized.

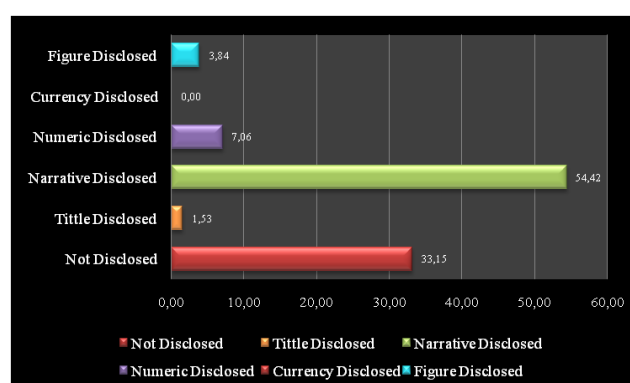
Table 2. Content analysis of disclosure format and Frequency

IC Component	IC Indicators	Frequency	% of universities	Type of disclosure					
				0	1	2	3	4	5
Human Capital									
HC_1	<i>Work-related knowledge</i>	54	63.53	3 2	0	53	n/a	n/a	n/a
HC_2	<i>Employees</i>	77	90.59	8	2	30	45	n/a	n/a
HC_3	<i>Employee's experience in profession</i>	20	23.53	6 5	0	20	0	n/a	n/a
HC_4	<i>Employee qualification</i>	61	71.76	2 4	0	49	3	0	9
HC_5	<i>Employee compensation/benefit</i>	2	2.35	8 3	0	2	0	0	n/a
HC_6	<i>Cultural diversity</i>	45	52.94	4 0	0	22	11	0	12
HC_7	<i>Training program</i>	14	16.47	7 1	0	14	0	0	0
Structural Capital									
SC_1	<i>Intellectual property</i>	53	62.35	3 2	9	19	14	0	11
SC_2	<i>University culture</i>	85	100.00	0	0	85	n/a	n/a	n/a
SC_3	<i>Management philosophy</i>	85	100.00	0	0	85	n/a	n/a	n/a
SC_4	<i>Management process</i>	85	100.00	0	0	85	n/a	n/a	n/a
SC_5	<i>Information system</i>	85	100.00	0	0	85	n/a	n/a	n/a
SC_6	<i>Research projects</i>	57	67.06	2 8	5	25	17	0	10
SC_7	<i>Financial relations</i>	17	20.00	6 8	0	14	0	0	3
SC_8	<i>Design and approval of programmes</i>	84	98.82	1	0	83	0	0	1
SC_9	<i>Student admission</i>	85	100.00	0	0	85	n/a	n/a	n/a
SC_10	<i>Facilities and infrastructure</i>	84	98.82	2	1	75	1	0	6
Relational Capital									
RC_1	<i>Brands</i>	27	31.76	5 8	4	23	n/a	n/a	n/a
RC_2	<i>Students/student satisfaction</i>	4	4.71	8 1	0	4	n/a	n/a	n/a

RC_3	University partnership	77	90.59	8	5	29	33	0	10
RC_4	Student database	38	44.71	4	7	3	8	14	13
RC_5	Quality standards	85	100.00	0	0	85	n/a	n/a	n/a
RC_6	Public information	85	100.00	0	1	84	n/a	n/a	n/a

Source: Processed Research Data, 2022

Based on the disclosure format, intellectual capital at Indonesian public universities are most predominantly disclosed in narrative format (54.42 percent), following by numeric format (7.06 percent), figure format (3.84 percent) and then just title disclosed (1.53 percent). As much as 33.15 percent intellectual capital items are not disclosed on Indonesian public universities' official website. Based on these findings, it can be stated that the universities studied are more likely to disclose intellectual capital information in a narrative format. This is because the narrative format provides a more detailed description of the intellectual capital information disclosed, making it easier for readers /seekers of information about the situation and situation of universities. The results of this study support the research conducted by Ulum, et. al. [25] which states that the narrative disclosure of intellectual capital can provide more thorough information for information seekers.



4.2 Finding of correlation analysis

Table 3 shows the results of cross-tabulation between accreditation with and intellectual capital disclosure rate. In this study, the ICD rate was classified into five categories, namely: very low, low, medium and high and very high disclosure rate.

Table 3. Crosstabs' result of correlations between accreditation and ICD

Accreditation * ICD_rate Crosstabulation			ICD_rate					Total
			Very Low	Low	Medium	High	Very High	
Accreditation	Good (Baik)	Count	0	2	1	0	0	3
		% within Accreditation	0.0%	66.7%	33.3%	0.0%	0.0%	100.0%
	Excellent (Baik Sekali)	Count	4	15	11	5	1	36
		% within Accreditation	11.1%	41.7%	30.6%	13.9%	2.8%	10.0%
	Superior (Unggul)	Count	1	7	21	10	7	46
		% within Accreditation	2.2%	15.2%	45.7%	21.7%	15.2%	100.0%
Total	Count	5	24	33	15	8	85	
	% within Accreditation	5.9%	28.2%	38.8%	17.6%	9.4%	100.0%	

Source: Processed Research Data, 2022

University accreditation is categorized into three, namely: Good (Baik/C), Excellent (Baik Sekali/B), and Superior (Unggul/A). The ICD rate obtained through a categorization process of intellectual capital disclosure scores that have been carried out on content analysis. Based on the table above, it is known that 2 of 3 public

universities with Good/Baik accreditation stated that the level of intellectual capital disclosure is low. Then, 15 of 36 public universities with Excellent/Baik Sekali accreditation stated that the level of intellectual capital disclosure was also in a low position. Meanwhile, 21 of 46 public universities with Superior/Unggul accreditation stated that the level of intellectual capital disclosure is medium.

Overall, from 85 public universities have been studied, 8 universities (9.4 percent) have a very high disclosure rate of ICD, 15 universities (17.6 percent) have a high disclosure rate, 33 universities (38.8 percent) have a medium disclosure rate, 24 universities (28.2 percent) have a low disclosure rate, and 5 universities (5.9 percent) have a very low disclosure rate. Based on university accreditation, majority of universities with “Good” accreditation and “Excellent” accreditation tend to disclosed intellectual capital at a low level. While, majority of universities with “Superior” accreditation tend to disclosed intellectual capital at a medium level. In this case, there is a difference in terms of the level of intellectual capital disclosure at Superior/Unggul accredited is higher than public universities accredited below. Spearman test results correlation between university accreditation and website based intellectual capital disclosures at public universities, can be seen in table 4.

Table 4. Result of Spearman test

Correlation	Sig.	Decision
0,390	0,000	Correlated

Source: Processed Research Data, 2022

The results of spearman test, obtained a significance $0.000 < 0.05$. This means that there is a relationship between university accreditation and website based intelctual capital disclosure at Indonesian public universities registered in Unirank Indonesia 2021. The value of the correlation coefficient 0.390 (39%) indicates that the correlation between variables is relatively low. One of the factors that may be able to influence the strength of such relationships is the quality of human resources. The positive correlation coefficient indicates that there is positive relationship between the type of university accreditation and the level of disclosure of intellectual capital. In other words, the better university accreditation also increase the quality of intellectual capital disclosure provided on the official website. The quality of higher education is closely related to the guidance of the traits of circumstances and services that are equal to or exceed the needs and expectations of both the community and interested parties. Therefore, quality universities always provide the fulfillment of educator needs for students and community expectations.

In this study, university accreditation is one of the institution's efforts to improve intellectual capital disclosure at universities. With the increase in intellectual capital disclosure, it is hoped that it will increase the satisfaction of the community and stakeholders, as well as increase public trust in universities in providing services in the world of higher education. The results of this study support the research conducted by Ulum and Novianty [3] that the status of universities can affect disclosure of intellectual capital.

5 Conclusions

Based on data from the results of research that has been carried out, it can be concluded that there is positive and significant correlation between university accreditation and website based intellectual capital disclosure although at a relatively low level. There is a difference in terms of the level of intellectual capital disclosure at Superior/Unggul/A accredited is higher than public universities accredited below. In other words, university accreditation is one of the institution's efforts to improve intellectual capital disclosure at universities.

The intellectual capital component that are most widely disclosed by Indonesian public universities is related to structural capital, and the lowest disclosed is information about employee benefits (in human capital) and student satisfaction (in relational capital). Secondly, from the overall types of public universities' the majority of the intellectual capital disclosure rate of universities is at a medium level (33 universities or 38.8 percent).

The limitations of this study are the research sample has not yet expanded, the use of the intellectual capital higher education framework from abroad, so there may be differences in indicators with the intellectual capital higher education framework from within the country. Suggestions for the next researcher, it is highly recommended to increase the number of research samples. Then, be more thorough in codifying information about intellectual capital presented. Despite existing limitations, the study provides practical implications as a university reference on the importance of correlation between accreditation and intellectual capital disclosure.

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