

Gender Diversity on Board of Directors and Intellectual Capital Disclosure in Indonesia*

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Abstract

This study investigates the impact of gender diversity on the board of directors on corporate intellectual capital (IC) disclosure in Indonesia. For the study purpose, the sample was divided into two sections, i.e., companies with large capitalizations and companies with small capitalizations. A paired T-test was used to observe significant changes in the disclosure level between period and type of firm. Using linear regression analysis, the influence of gender diversity and other variables on IC disclosure was examined. The findings show that IC disclosure varies for large and small companies. The level of IC disclosure in large companies was stronger than in small companies. The results of the multivariate analysis showed that the profitability, leverage, ownership, and type of business of the company significantly affect IC disclosure. For companies with large capitalization, the presence of women directors on corporate boards or gender diversity on corporate boards does not impact IC disclosure. This is because the Indonesia Stock Exchange (IDX) does not insist on IC disclosure. However, for small companies, the existence of gender diversity has a significant effect on IC disclosure. The findings of this study suggest that policymakers and standard makers must consider the inclusion of IC disclosure on the annual report as mandatory.

Keywords: Intellectual Capital Disclosure; Gender Diversity; Board of Directors; Women's Director

JEL Classification Code: G20, L25, F65, O15, Q34

1. Introduction

Gender diversity on corporate boards has been widely discussed in recent years. More recently, researchers have observed that the presence of women on the corporate board

affects company performance. The majority of previous studies have documented the positive influence of gender diversity on corporate governance activities and firm performance in various contexts of developed countries and developing countries. Women directors have a stronger positive effect on firm performance. Also, the influence of women directors on firm performance is significant in legal person-controlled firms however insignificant in state-controlled firms (Liu et al., 2014). There is a positive and significant relation between board gender diversity and firm performance and the presence of women on the board of directors can improve firm performance (Ahmad & Ahmed, 2016; Fakir & Jusoh, 2020), dividend pay-out policy (Tahir et al., 2020), improve sustainable disclosure (Ahmed et al., 2017), and react positively to the market (Ismail & Manaf, 2016). However, the results of board gender diversity on firm performance are still mixed. While some contributions find modest positive effects other studies show no effects or even point towards the presence of a negative impact. Mandated gender quotas for directors that have been introduced in several European countries can reduce firm value. Some studies investigated the introduction of gender quotas in Norway as a natural experiment, by imposing a 40% quota

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on the women's board of directors, and found, negative performance effects (Ahern & Dittmar, 2012). Hence, the mandated quota led to younger and less experienced boards, increases in leverage and acquisitions, and a decline in operating performance, consistent with less proficient boards. Gender diversity on the board of directors has been considered as a double-edged sword because it can drive or impede strategic change depending on firm performance and the power of women directors (Triana et al., 2013).

This research will review the impact of gender diversity on intellectual capital (IC) disclosure in Indonesia. The results show that gender diversity on the board of directors has a positive and significant correlation to the organization's innovation (Kanadli, et al., 2016). Innovation is essential for the organization to improve efficiency and to build competitiveness. Innovation is one of the components of IC that can contribute to the improvement of the performance and prosperity of the company (Kanadli et al., 2016; Saeed & Sameer, 2017; Sudharma et al., 2020). The resource theory creates a perspective for the board of directors that has a variety of viewpoints, skills, and experiences that would embrace better than the monotonous board of directors (the variety included in gender diversity). If diversity does not occur in the organization it will lead to bias in the decision-making process. However, a conflict can be the solution to reduce these effects.

Conflict, while often avoided, is not necessarily bad for organizations. From the behavioral perspective, the company is viewed as a coalition of stakeholders or actors (Cyert & March, 1963). In this case, the board of directors is representative of actors who have interests and conflicting goals (Van Ees et al., 2009). Therefore, the behavioral perspective stated that inclusive information available and evaluated during the decision-making process will lead to innovative decisions and increase the IC disclosure. Researchers believe that the diversity of human resources (experience, knowledge, and perspective) will create a positive impact on cognitive conflict. The limited knowledge, experience, and view of the male directors will be balanced by the involvement of women directors who can generate innovative ideas to support the better IC disclosure (Matolesy & Wyatt, 2006).

A study by Dumay and Guthrie (2017) confirmed that, currently, IC disclosure by companies in developed and developing countries was low. Intellectual capital refers to the intangible assets that contribute to a company's bottom line. These assets include the expertise of employees, organizational processes, and the sum of knowledge contained within the organization (Hariyati & Tjahjadi, 2017). An intangible asset is a vital resource that serves as the core of value creation and competitive advantage for the firm (Berzkalne & Zelgalve, 2014; Liu et al., 2014; Vishnu & Gupta, 2015). Usually, the company's annual report only contains mandatory reports (Lim et al., 2007), and few make

voluntary reports. Several companies report the IC separately in addition to their mandatory financial statements (Ordonez de Pablos, 2003). IC disclosure is essential to report because it will reduce information asymmetry, increase transparency and accountability, reduce capital costs, and increase stock prices (Dzenopoljac et al., 2017; Ghosh, 2017; Hussinki et al., 2017). Therefore, it will enable the stakeholders to assess the innovation creation ability and the future wealth of the company (Asiaei & Jusoh, 2017; Ayub et al., 2017). Despite the importance of IC, several researchers stress the limitation of such disclosure. There are some IC disclosure concerns, for instance, it is assumed that IC disclosure will eliminate the competitive advantage for a company because the company reveals its secret to the public (through IC disclosure). Besides, low IC disclosure is caused by the absence of the standards related to how the IC information is reported and needed for the report (Solikhah et al., 2020).

Since 2009, IC has gained increasing attention, and its importance has been acknowledged widely including in Indonesia, especially, after changes were made to the Statement of Financial Accounting Standards (SFAS). The International Financial Reporting Standards (IFRS) sets out the criteria for recognizing and measuring IC and requires mandatory disclosure of IC by firms. One of the reasons for the low IC disclosure in Indonesia is the low awareness and pressure from domestic and foreign investors to improve the level of transparency of the company. The absence of the standard measure of qualitative information related to IC disclosure is the main reason for the low IC disclosure in Indonesia (Basuki & Sianipar, 2012; Dwipayani & Putri, 2016; Widiastuty, 2016).

Therefore, this research attempts to:

1. To estimate the overall ICD level and the components on the selected sample company annual report in Indonesia.
2. Observing the pattern of gender diversity and ICD relations
3. Exploring and evaluating the factors that affect ICD in Indonesia.

2. Literature Review

2.1. Gender Diversity and IC Disclosure

According to the researchers, the increasing number of women on the board of directors is related to the increasing number of voluntary disclosures. This view refers to the resource-dependency theory. According to the resource-dependency theory, firms are dependent upon other actors in the immediate task environment to obtain resources. To survive, firms need to obtain resources from (actors in) the external environment. This dependency inflicts a risk to the business (Kraaijenbrink et al., 2010). To reduce dependency and uncertainty, the firm will act to reduce or increase its

level of reliance on those actors, through actions (establish linkages) such as joint ventures or alliances. The board of directors provides valuable resources that contribute to a company's competitive advantages (Arosa, Iturralde, & Maseda, 2013). The board of directors must have diverse views, skills, and professional experiences to create an emphasized value from a resource-based perspective. Diversity member profiles (including gender) gives the board a variety of competencies, a collection of resources and expertise, a range of different leadership experiences, and the capacities to generate new ideas (García, 2016).

The ratio of women directors is positively associated with board strategic control. Besides, the positive effects of women directors on board effectiveness are mediated through increased board development activities and a decreased level of conflict. Women's ability to contribute to the board may be attributable to their different leadership styles. The presence of women on corporate boards increases board effectiveness by reducing the level of conflict and ensuring high quality of board development activities. Women directors give more attention to the welfare of others, being empathetic, sympathetic, sensitive to interpersonal, nurture, and tender (Nielsen & Huse, 2010). The diverse expertise is essential to ensure that the board of directors understand the company's financial goals and the impact of the business on different stakeholders. Gender diversity is considered to increase a board's collective intelligence and contribute to the increase of available talent for the management function and the highest supervision of the company (Kanadli et al., 2016).

The importance of gender representation is based on the belief that women will increase commercial effectiveness by increasing the competence, expertise, collective judgment, and intelligence of the board (Saeed & Sameer, 2017). There is a strong assumption that the company's performance will increase because women directors are more qualified than men in many skills such as multitasking, risk management, and communication (An et al., 2015). Also, women's directors have different opinions during meetings; this will increase transparency and reduce asymmetric information (Abad et al., 2017). Therefore, gender diversity improves the environmental information by correcting the problem of asymmetric information in the capital market.

Two main factors explain the tendency of women directors to reduce asymmetric information. First, women directors use the leadership style more confidently than men such that their commitment toward trust development requires more information exchange and lower information asymmetry (Srinidhi et al., 2011). Second, women directors show greater perseverance in supervision. The better monitoring claimed by gender diversity caused better managerial oversight, increased transparency, and broader information. Thus, the presence of women directors improve management control and enhance the independence of corporate boards, thereby

improving the transparency and disclosure quality of the firm. This will result in the disclosure of IC information because higher levels of women's representation on the board of directors hint at market knowledge and better identification with customers and employees.

Rodrigues, Tejedo-Romero, and Craig (2017) stated that gender diversity is a complementary corporate governance mechanism that has a significant positive effect on levels of disclosure of IC information. Gender diversity on corporate boards influences corporate governance outcomes that in turn impact performance. This is because the presence of women on boards leads to stronger monitoring and oversight behavior. Rodrigues, Tejedo-Romero, and Craig (2017) findings encouraged support for policies that will increase current levels of representation of women on corporate boards and influence the setting of corporate governance requirements relating to disclosure by capital market regulators. Thus, women directors increase boards' monitoring capability, and consequently, boards with women directors are associated with less occurrence of corporate financial fraud and increased transparency. Thus, it can be argued that women directors would be associated with higher IC. Based on the information above, the hypothesis in this research is:

H1: There is a relationship between gender diversity on the board of directors and IC disclosure.

3. Data and Methodology

3.1. Data and Sample

The sample used in this study was companies listed on the Indonesia Stock Exchange (IDX) in the last six years between 2012-2017. Researchers used a 6-year sample because the companies that have large capitalization and are listed on the IDX30 index have only been around since 2012. Samples were determined by using the purposive sampling method with the consideration of the availability of the company's financial statements during the year of observation, and companies that are consistently included in the IDX30 and Pefindo25 Index categories for six consecutive years. The data was obtained from the company's annual report that was got from the IDX.

Table 1 shows the sample selected and used in this research; 21 of 30 companies that are listed on the IDX 30 Index represent companies with large capitalization. While 7 companies were companies with small capitalization that are listed on the Pefindo25 index. For the six years, the IDX30 and Pefindo25 indices were observed and it was observed that issuers (a legal entity that develops, registers, and sells securities to finance its operations) in the IDX30 Index were more consistent and more comfortable than issuers in the Pefindo25 index.

Table 1: Sample Selections

Sector	IDX30	Pefindo25
Mining	1	0
Bank	4	0
Consumer Goods	5	1
Trade, Service, Investment	3	2
Property	4	1
Basic Industri and Chemical	2	2
Infrastructure, Utility, and Transportation	2	0
Various Industry		1
Total	21	7

3.2. Variable

The dependent variable is the IC disclosure that is measured by observing the existence of IC disclosure comprising human capital, structural capital, and relational capital. This measurement was carried out by identifying the components of IC disclosure, referring to the IC disclosure Index (ICI). This refers to previous research on ICI measurement (Santos-Rodrigues, Gupta, & Carlson, 2015; Tejedro-Romero, Rodrigues, & Craig, 2017).

$$ICI = \frac{\sum_{i=1}^m di}{m} \quad (1)$$

Where $di = 0$ or 1 , and $di = 1$ if the disclosure item was found; $di = 0$ if the disclosure item was not found; and $m =$ number of IC items (components) that the company can disclose.

The independent variable is gender diversity. This variable is the primary variable that will be examined and several other variables will be also be used. Many previous studies have used the percentage of women directors in companies (%) to measure gender diversity of the board (An et al., 2015; Tejedro-Romero et al., 2017). In several previous types of research, dummy variables were used to measure gender diversity. However, in this study, the percentage and number of women directors are used as the measurement of gender diversity.

To observe whether gender diversity influences IC disclosure or not, control variables were included. The control variables used were variables that have been researched such as market to book value (MVBV) of the firms, total assets (TA), sales (SALES), leverage (LEV), return on assets (ROA), return on equity (ROE), ownership of the firm (OWNER) and type of firm (TYPE).

3.3. Methodology

The importance of IC disclosure has been examined using two research methods, namely content analysis, and questionnaire survey, but the content analysis is more common and widespread among researchers (Ienciu, 2014). The content analysis attempts to analyze information that is published systematically, objectively, and reliably.

In this study, the content was analyzed using software rather than manually. Analysis of computerized content has been used in previous research involving large samples (Vergauwen, Bollen, & Oirbans, 2007). The use of the tools helps in achieving a higher level of replication reliability and objectivity. Kamath (2017) used 60 terms of IC disclosure in her study. The study comprised three IC components (i) Structural capital (SC) comprising 20 items such as intellectual property, patents, copyrights, trademarks, management philosophy, etc (ii) Human capital (HC) comprising 21 items such as human asset, human value, training, expert, talent, human resource, etc (iii) Relational capital (RC) comprising 19 items such as market share, customer, brand, customer satisfaction, customer loyalty, company image, etc.

The determination of the unit of analysis is carried out after the terms are classified. NVivo software is used to extract frequencies and reports created. Frequency cross-checking is carried out using direct word search from several random pdf documents and no significant differences were found. Therefore, the reliability of the data extraction process is ensured. This study uses all annual reports without making a difference between voluntary and mandatory disclosure.

3.4. Model Analysis

Panel data analysis is used to test the proposed hypothesis. The panel data used is balanced data, because the same period (t) is used for all observed companies (i). The reason for using panel data is to control the heterogeneity of individuals and certain unobserved times that are isolated with explanatory variables. By using time series and cross-sectional data, the specific unobserved individual effects can be controlled.

The ICI value is a linear combination of explanatory variables, including gender diversity and vector control variables (Z). Mathematically the relationship between the two primary variables is stated as follows:

$$ICI_{i,t} = \alpha + \beta_1 Gender_{it} + \beta_2 Z_{it} + v_{it} \quad (2)$$

Referring to model 2, the model explored to be:

$$ICI_{i,t} = \alpha + \beta_1 Gender_{it} + \beta_2 MVBV_{it} + \beta_3 TA_{it} + \beta_4 SALES_{it} + \beta_5 LEV_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 OWNER_{it} + \beta_9 AGE_{it} + \beta_{10} TYPE_{it} + v_{it} \quad (3)$$

Table 2: Variable Operational Definitions

Variable Type	Variable Name	Symbol	Variable Definition
Dependent Variable	Intellectual Capital Index	<i>ICI</i>	$CI = \frac{\sum_{i=1}^m di}{m}$
Independent Variable	Gender Diversity	<i>Gender</i>	The percentage of women on the board of directors (Board Director)
Control Variable	Market to Book Value	<i>MVBV</i>	Equity Market Value
	Total Assets	<i>TA</i>	Total Asset Value
	Sales	<i>SALES</i>	Period Sales Value
	Leverage	<i>LEV</i>	Leverage
	Profitability	<i>ROA</i>	Return on Asset
		<i>ROE</i>	Return on Equity
	Ownership	<i>OWNR</i>	Variable Dummy, 1 for public and 0 for others
	Company's Age	<i>AGE</i>	the age of the company is count from the beginning of company establishment
	Company's Size	<i>TYPE</i>	Variable Dummy, 1 for manufacture and 0 for services

4. Results and Discussion

4.1. Content Analysis

The classified IC disclosure done by the companies based on market capitalization is presented in Figure 1. The items disclosed and the total score of each IC component is presented. In the companies with large capitalization, it was observed that of the total 60 items, 53 items were disclosed by the company. In this study, Structural Capital (SC) consists of 15 items, Human Capital (HC) consists of 20 items, and Relational Capital (RC) consists of 18 terms SC comprises information systems, processes, databases, policies, intellectual property, culture, knowledge embedded in organizational structures and processes, etc. HC refers to the skills/competencies, training and education, and experience and value characteristics of an organization's workforce (knowledge, competencies, skills, experience, know-how, capabilities, and expertise of the human members). These groups show that HC is more dominant than others. RC comprises all relations a company entertains with external subjects, such as partners, suppliers, clients, trademarks, brand names, and reputation. With regard to SC, items such as networking systems (16 percent), leadership (15.6 percent), and R&D (15 percent) are more frequently disclosed. Also, items such as trademark, organizational cultures, information

systems, and process management are frequently disclosed. Knowledge asset is the least disclosed item. With regard to HC, employee items (10 percent) and training (10 percent) are more frequently disclosed. Items such as work atmosphere, expertise, remuneration, and incentives are also disclosed in the company's annual report. Large capitalized companies least report employee skills and employee efficiency. With regard to RC, the item investor (13 percent) is more frequently disclosed. The item customer capital is the least disclosed term (0.13 percent). Referring to the IC items, it can be concluded that large companies in Indonesia have disclosed more IC items (53 of 60 items).

In contrast to large companies (IDX30), we find less disclosure of IC in small companies (pefindo25). In the companies with small capitalization, it was observed that of the total 50 items, 41 items were disclosed by the company. With regard to SC, the terms trademark and leadership dominate (23.3 and 24.8 percent), the terms of organizational cultures, information systems, and R&D are also disclosed. The terms management philosophy, networking systems, and intellectual assets are the least disclosed items. With regard to HC, employee items such as remuneration and training are more frequently disclosed (9.6 percent). The item talent is the least disclosed term. With regard to RC the terms brand, customer, and investor are more frequently disclosed, and the least disclosed item is business collaboration.

Table 3: Descriptive Statistics

Panel A	The Companies with Large Capitalization (IDX30)				
Variable	Obs	Mean	Std. Dev.	Min	Max
ICD	126	37.857	10.521	5	55
GENDER	126	0.060	0.093	0	0.3
MVBV	126	7.136	1.446	4.11	10.5
TA (ln)	126	17.831	1.457	14.84	20.84
SALES (ln)	126	16.990	0.963	14.15	18.57
LEV	126	2.025	2.800	-4.76	18.19
ROA	126	11.723	12.359	0.84	71.51
ROE	126	28.036	77.990	-147.2	799.1
OWNR	126	0.667	0.473	0	1
AGE	126	48.157	31.625	8	135
TYPE	126	0.667	0.473	0	1
Panel B					
	The Companies with Small Capitalization (PEFINDO25)				
ICD	42	33.373	8.847	8.33	53.33
GENDER	42	0.083	0.102	0	0.25
MVBV	42	5.729	0.768	4.6	7.39
TA (ln)	42	14.214	1.810	7.84	15.23
SALES (ln)	42	14.972	0.689	13.7	17.15
LEV	42	0.881	0.707	0.06	2.29
ROA	42	11.993	6.842	-2.4	24.09
ROE	42	19.597	9.855	-7.87	36.75
OWNR	42	1.000	0.000	1	1
AGE	42	32.857	10.214	20	47
TYPE	42	0.714	0.457	0	1

Table 4: Person Correlation Matrix

	GENDER	MVBV	TA	SALES	LEV	ROA	ROE	OWNR	AGE	TYPE
GENDER	1.000									
MVBV	-0.123	1.000								
TA	-0.016	.542**	1.000							
SALES	0.073	.554**	.767**	1.000						
LEV	.158*	.279**	.440**	.285**	1.000					
ROA	.295**	-.315**	-.346**	-0.109	-.186*	1.000				
ROE	0.120	-0.124	-0.073	0.007	.553**	.416**	1.000			
OWNR	-0.137	-.288**	-.489**	-.452**	-.426**	.247**	0.057	1.000		
AGE	0.132	0.060	0.001	0.116	0.138	.468**	.299**	-.204**	1.000	
TYPE	-.237**	-.231**	-.274**	-.183*	-.429**	0.058	-0.064	0.132	-0.110	1.000

*. Correlation is significant at the 0.05 level (2-tailed).

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

4.2.3. Multiple Linear Regression Analysis

To observe the influence of the gender diversity variable and control variables on IC disclosure, regression analysis was performed as shown in Table 5. Analysis of companies with large, small, and combined capitalization values was carried out. Regression using data for 2012-2017 was estimated for all companies with a sample of 28 companies and separately for large companies (21 companies) and small companies (7 companies).

Based on the results shown in Table 5, the three groups, i.e., Pefindo25, IDX30, and cooperated companies have a similar probability value of less than 5%; this means that the independent variable can explain the ICD variables significantly. Gender variables influence IC disclosure in companies with small capitalization; the influence is negative which means that the existence of gender diversity has a negative impact on the disclosure of the company's IC. There are indications that this finding is caused by the compulsion to have women on corporate boards; therefore, it has a negative impact on the company (Ahern & Dittmar, 2012; Triana et al., 2013). IC disclosure varies for large and small companies. There is no impact of gender variables on large companies because in Indonesia there is no mandate for companies to report IC components in the company's financial statements. The MVBV variable does not have a significant influence on IC disclosure for small and large companies. This is because shareholders do not pay attention to this component. Moreover, IC is not explicitly reported in

the annual report; therefore, shareholders are unaware of the IC components. Several variables significantly influenced IC disclosure in Indonesia, namely leverage, profitability (ROA and ROE), type of ownership, and type of company, while others are not significant. Gender variable is a topic in this research that is also not significant; therefore, gender diversity on the board of directors does not directly influence the disclosure of IC in Indonesia. Based on Figure 1 above, there are different results for each group of companies. This depends on the way the company disclosed the IC.

5. Conclusions

This study investigates the relationship between IC disclosure levels and corporate attributes of companies listed on the IDX. The study also investigates the influence of gender diversity on ICD in Indonesia. For the study, the sample was divided into two sections, i.e., companies with large capitalizations and companies with small capitalizations. The sample selected was 28 companies, of which, 21 companies were classified as companies with large capitalization and listed on the IDX30, and the balance 7 companies were classified as companies with small capitalization and listed on the PEFINDO25 Index. The results of this research enrich the findings of other researches related to IC disclosure in Southeast Asia, especially Indonesia. Although Indonesia is not a knowledge-based economy, there are many driving forces such as globalization and the increasing number of information technology use.

Table 5: Regression Result

For All Models	PEFINDO25		IDX30		Combination	
N		42		126		168
Adjusted R2		0.271		0.231		0.2027
F statistic		2.527		4.762		5.25
Prob.		0.023		0.0000		0.0000
Intercept	16.002		54.219		25.953	
Variabel Dependen = ICD						
Independen Variabel	<i>Beta</i>	<i>p Value</i>	<i>Beta</i>	<i>p Value</i>	<i>Beta</i>	<i>p Value</i>
GENDER	-0.006	0.950	-0.537	0.066*	-4.409	0.610
MVBV	0.029	0.760	0.074	0.75	0.439	0.505
TA	-0.141	0.445	0.408	0.027**	0.804	0.189
SALES	0.266	0.032**	-0.257	0.28	0.123	0.904
LEV	-0.330	0.09*	0.440	0.30	-1.115	0.069
ROA	0.127	0.389	1.750	0.009**	0.204	0.053*
ROE	0.218	0.184	-1.164	0.029**	0.027	0.180
OWNR	0.032	0.754	0.111	0.62	-9.270	0.00**
AGE	-0.297	0.006**	-0.343	0.14	0.018	0.578
TYPE	-0.443	0.00**	-0.505	0.26	-3.713	0.046**

* Sig. 10%, ** Sig. 5%

This research uses company data with large and small capitalization. The results showed that there were differences in IC disclosures in large and small companies. Large companies (53:60) disclose more IC components than small companies (41:60). This is also strengthened by the paired T-test wherein significant differences in the disclosure of ICs in large and small companies were found.

Testing of variables influencing the IC disclosure shows different results. The gender diversity variable has no influence on IC disclosure in large companies. However, it has a negative influence on small companies. Variable controls such as MVBV do not influence because market participants do not pay attention to the IC components disclosed in the company's annual report. Other variables such as profitability, leverage, size of the firm, and type of firm influence IC disclosure in Indonesia. Regression analysis shows that gender diversity has not directly influenced IC disclosure in Indonesia. This means that the existence of women on the board of directors has not influenced the innovation of the company and IC disclosure in the company. Further research is expected to use a different approach to identifying IC disclosures, such as using a questionnaire in identifying the disclosure of IC components in the company.

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