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ARTIKEL: Integrated Reporting, Sustainable Development Goals and the Role of Regional Information System

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Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential

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Abstract

Purpose: The purpose of this research article is to assess what information should be connected and how its information can be connected based on integrated thinking fit within integrated reporting (IR) into information system of regional investment potential (ISRIP) of regional government. To explores and to develop insight into how it can be implemented over changes of investment climate due to the top down pressures to fulfill sustainable development goals (SDGs).

Design/methodology/approach: we conducted research for regional governments (province / district / city) in Indonesia with investment characteristics of the potential, priorities and opportunities of regional investment units. By taking samples for 100 (one hundred) regional investment units. Measurement used nominal scale with chi-square test for goodness of fit to get the measurement of observation frequency (OF) and compared with the expected frequency (EF).

Findings: the measurement results showed observed frequency (OF) with a value of 137.97. Afterwards, for expected frequency (EF), with degrees of freedom (6-1) (7-1) and a significance level of 0.05, within the chi-square showed the value of 43.77. Due to $OF > EF$, this result indicated for being of corresponding between integrated thinking of regional investment within implementation of information system of regional investment potential (ISRIP). With has the relationship level of Pearson contingency coefficient that showed value of 0.4057, as moderate relationship.

Originality: This research article contributes to the growing debate about the benefits of integrated reporting as a voluntary reporting initiative, and in which some others organization have adopted (IR) as a mandatory initiative for the mode of reporting up to date. More specifically, in the efforts of regional governments to adopt an integrated thinking that is in line with the role of an integrated reporting system, in communicating of regional investment units.

Practical implications: To be as an early adopter of (IR) reporting practices towards the implementation of the information system of regional Investment potential (ISRIP). We imply that the six capital (IR) with strategic communication will enhance performance of of ISRIP, through by fundamental way and as regional strategic wisdom. To meet the values of accountable organization within regional investment units's management. In line with national alignment in global megatrends with the sustainable development goals (SDGs) accomplishment.

Keywords: integrated thinking, integrated reporting (IR) ; regional investment, information system for regional investment

INTRODUCTION

Public Investment Management needs to be done with effective investment communication. To manage this public investment at various levels, besides effectiveness, the government also needs to enhance efficiency, by coordinating, strengthening capacities, and ensuring a healthy framework at all levels of government (OECD, 2014). Furthermore, this Investment communication fulfillment in context of sustainable development will be related to environmental management systems (Malmborg, 2002). This relates to development and audit to investment accountability. As implementing of a reference related to the international standard ISO 14001 (IOS, 2004). Investment management in Indonesia for sustainable development has been stated within the vision of the general plan of investment until year of 2025 for Indonesia. With the aim for "sustainable investment in the framework of realizing an independent, advanced, and prosperous Indonesia (CICB, 2017, 2019).

The global development communication has mandate referring to sustainable development in accordance with the integration of the SDGs (UN, 2017) throughout the investment cycle. Furthermore, where public investment management must be able to contribute to sustainable development targets (Pineiro et al., 2018). This is a moral aspect within an investment ethics (Rankin et al., 2012), in line with ethics in the use of information technology (Reynolds, 2015). Investment management is implemented with the support of information system functions and roles. Until this time being, the Government of Indonesia establishes regional investment management in the types of potential investments, investment priorities and leading investments or investment opportunities that are ready to be offered. These types of superior investments are determined by capital investment coordination board (CICB), from top to bottom up, through by selected the regional governments within in the regional champion program. Otherside, with another approach through by the promotion of regional investment which determined from the bottom up through the proposed the Provincial, Regency and City Governments (CICB, 2017).

Normatively, to fulfill the role of information system performance, it is necessary to orientate towards an integrated reporting system model (IIRC, 2011, 2013, 2018, 2019). This reporting system is a reporting model developed and refining the sustainable reporting system (Jones, 2010) or triple bottom line reporting (Slaper and Hall, 2011) from global reporting initiatives (GRI, 2013, 2018). As it is known that the above reporting types only result in an evaluation of historical value. Therefore, relevant efforts can be considered with integrated thinking fit with integrated reporting (IR) towards creating value over time (IIRC, 2011, 2013, 2018, 2019; WICI, 2013, Adams, 2015; Dumai and Dai, 2017). For fulfillment the performance of the function and role of information system of regional investment potential (ISRIP) (CICB, 2017, 2019).

Indonesia as part of the global community, need for the improvement within effective investment communication, with the basis for investment decisions that take into account the fulfillment of investment principles and objectives (Law No 25, 2007). More than about financial achievement for investment (Kalev and Wallace, 2012), that investment has relationship with environmental principles that are sustainable and environmentally sound by promoting sustainable economic development (Law Number 32, 2009; SDGs-UN, 2017). Based on these regulation or guidance, all activities referring to investment management is governed for the requirements for sustainable investment. Such, being requirements to fulfill a strategic environmental assessment, which must be carried out by the government before granting investment permits. Therefore, this is the main thing for all investment management regulatory approaches in Indonesia that must be in line with the global context in the management of public investment (Presidential Regulation, Number 16 of 2012; CICB, 2017; 2019).

Being functionally the implementation of investment management requires the communication for all of information which needed by investors. For their investments decision, in where of the region which be easily accessible, and with availability for comprehensive information on the website (CICB, 2019). In this context, the CICB has established a national information system through by the regional governments, which manages information on potential investment on the www.regionalinvestment.bkpm.go.id website with the name "information system regional investment potential (ISRIP)". Functionally and according to its role, an information system really needs its development to fulfill the completeness of contents and basic communication methods. An information system such as for regional investment management is designed to meet the performance of the information system. As an implementation of investment cycle communication (Pineiro et al., 2018) that meets investment management accountability requirements for global development sustainability (SDGs, UN, 2017). Until now, efforts to meet the sustainability of development through investment activities have been pursued (CICB, 2017, 2019).

Formally, until this time being, for ISRIP website that has been using, information was limited and most regions, had not updated their data, so the information could not be implemented as a

reference by investors. Meanwhile, in deciding to invest in an area, investors need investment information that is easily accessible and comprehensive on one site. Until now, data updating was carried out by each region, meanwhile otherside , most of the regions had not updated it. For the sake of effectiveness, CICB (2019) has overhauled this system with fulfill the completeness of information role contained. It includes perspective content element in ISRIP, such as, information for why Indonesia, investment opportunities, incentives, OSS licensing, infrastructure, and potential companies that are ready to partner with up dates on collaboration data / links between Ministries / Institutions and business associations. The capital investment coordinating board (CICB) developed of investment potential information in the Regional Investment Potential Information System (ISRIP). Encouraging competition between regions in increasing investment potential and updating data on the website. The focus is on five provinces that are very promising and investment friendly which will be circulated and communicated every three months to be pushed to become regional investment champions. The focus of the first phase of investment is in the Java region, namely West Java, Banten, DKI Jakarta, Central Java and East Java (Kristianus, 2019; CICB, 2017).

Based on the state of condition of investment management in Indonesia, it can be seen that there are challenges in investment management today. There are challenges in the management of domestic direct Investment (DDI) and foreign direct investment (FDI) in terms of equitable growth. Data on investment realization based on investment sector and location shows the distribution of investment, around 60% is still concentrated in Java and 40% outside Java. Among 34 provinces with 514 districts / cities, shows investment activities are concentrated in only around 30 districts / cities. This has resulted in a widening gap in economic development between regions. One of the obstacles faced by investors in exploring investment is the lack of information on investment potential and infrastructure support in the regions (Kristianus, 2019). It also becomes a challenge in the global context for investment management within investment promotion effectively (UNCTAD, 2018a). This matter also can be viewed as the impact of the challenges, which showed in the criteria for “ease of doing business” (IBRD, 2019), where Indonesia's position is at level 73 out of 190 countries (UNCTAD, 2018b).

Figure 1 is presented as a normative idea in fulfilling the role of ISRIP. Normatively, we refer to integrated thinking that is in accordance with integrated reporting (IIRC, 2011, 2013, WICI, 2013) within creating value over time. Furthermore, the organization's business model is used in the investment management cycle (Pineiro et al., 2018). As explained by the OECD (2014), there are 3 (three) perspectives in investment management. The development model also refers to a perspective (UNCTAD, 2018a) which emphasizes the importance of a strategic approach to SDGs. In line with the idea, regarding the role of information systems for investment, namely by aligning investment with SDGs and putting real data behind the word 'impact'. (Pineiro et al., 2018). Regional governments need to fulfill guarantees that investment management communications with the ISRIP design can be accounted for for sustainable development (UN, 2017). For important reasons as stated, normative ideas are put forward in the 'integrated thinking component according to (IR) (IIRC, 2011, 2013; WICI, 2013) for the development of ISRIP ”(CICB, 2017, 2019).

Integrated thinking (IT) ISRIP development fit with integrated reporting (IR)		
What information is connected and how information is connected	Content of information within regional investment units into ISRIP	Strategic regional investment management communication within ISRIP
Connecting strategy	Information for regional investment units	6 (six) (IR) capital
Governance	Description of investment opportunities,	Financial Coordinating a cross level of

	market opportunities, estimated investment value, feasibility to offer	(economic measures)	government and polices.
Past performance	Human resources: feasibility to offer	Human	Strengthen capacities at all levels of government.
Future prospect	Facilities and infrastructure: production and investment scale offered, available infrastructure, supporting industries, feasibility to offer	Manufacture	Proper framework conditions for public investment at all level of government.
Connecting functional department	SME's stakeholders and large entrepreneurs, feasibility to offer	Social	Sourcing and due diligence of screening investments to advance an SDG
	Support of regional regulations, regulatory aspects, land ownership status, feasibility to offer	Intellectual property right	Investment selection and structuring (analysis and verification)
	General condition of the area, availability of land for development, environmental aspects, feasibility to offer	Natural (environment)	Measuring and reporting progress made toward the SDGs

(Sources: WICI, 2013; OECD, 2014; IIRC, 2011,2013, 2018, 2019; UNCTAD, 2018a; Pineiro et al., 2018; CICB, 2017, 2019)

Figure 1
The integrated thinking's components fit with (IR) for ISRIP development"

Figure 1 shows the idea of using the pillars of best practices of investment management adopted as the important cycle of investment management. The development of information system of regional investment potential (ISRIP) that is represented by the achievement of this performance of the information system. First, the application of complete information on the profile of regional investment units with a benchmark for 6 (six) capital of integrated reporting (IR) aspects. Second, by system strengthening with a communication strategically through by ISRIP of regional government.

In the context of regional investment unit information criteria, regional governments refer to (CICB, 2017) with information representation of regional investment units. As description (Table 1) is representation of information criteria. These information are presented in the ISRIP are related to the evaluation of investors, with the analysis that carried out on investment opportunities for the offered regional investment units.

Table 1 . Information criteria within a regional investment unit

Information criteria for regional investment units	Information on analysis results	Information on the results of factual verification
The object offered (name of the investment unit)	Name of regional investment unit	Name of regional investment unit
Availability of raw materials	There is (name of place)	Support
Availability of competent human resources	There are graduate educational institutions available	Support
Availability of facilities and infrastructure	complete facilities and infrastructure available	Support
Short term and long term market	The existence of a captive market for the products produced	Support
Domestic and foreign markets	There is a captive market for domestic and abroad	Support
The involvement of small and medium stakeholders and large entrepreneurs	There are areas for SMEs and partnership facilities	Support
Compliance with statutory regulations	Already have principal permits and and other related regulations	Support
Environmental aspects	there has been an analysis of environmental	Support

	impact studies	
Land availability and status and ownership	already controlled by the area manager with an area (... hectares), available land (..... hectares)	Support
Estimated investment (IDR)	--- (money term)	Support
Eligibility to be offered to investors	---	worth offering to investors

(Sources, CICB, 2017)

The management of ISRIP requires aligning both strategic and technical aspects. First is strategic, because ISRIP is part of investment promotion carried out through the function and role of the "Indonesia Investment Promotion Center (IIPC). In investment management, the functions and roles of ISRIP be integrated (UNCTAD, 2018a; Pineiro et al., 2018; CICB, 2017, 2018, 2019), to achieve the strategic objectives in line with SDGs (UN, 2017). Therefore, strategically, fulfilling the information criteria for communication of regional investment units is needed as a strategic way to fulfill objectives that are in line with the functions and roles of the IIPC. In accordance with the functions and roles of IIPC, the function orientation and strategic role of ISRIP is to fulfill several tasks and functions according to IIPC, namely: (i) 1. Increase investment from domicile countries and working areas to Indonesia; (ii) Facilitating investment from Indonesia to domicile countries and working areas. Second, from an information technology perspective, because ISRIP is an integrated part of the National Single Window for Investment (NSWI) (CICB, 2018). Functionally, for operational capability, ISRIP is managed through its implementation at the Regional Government Investment Service. Become an integrated part of the joint sitemap in NSWI, namely with a homepage for the public (individuals / communities), and for investors (individuals or companies).

Based on the explanation regarding investment management to fulfill the role of ISRIP performance, then the approach described (Figure 1 and Figure 2) can be used. Therefore, in general, the approach to fulfilling the information criteria alignment for the regional investment profile represented in the fulfillment of 6 (six) integrated reporting capital (IR) (IIRC, 2011, 2013, WICI, 2013, IIRC, 2018, 2109) is relevant to be implemented in ISRIP . Then strategically by laying a foundation based on strategic communication investment management (UNCTAD, 2018a; Pineiro et al., 2018; CICB, 2017, 2018, 2019), to achieve the strategic objectives in line with SDGs (UN, 2017).). Both of these approach as a relevant way to achieve the role of information systems on the potential for regional investment (ISRIP) for regional governments.

Some of previous studies (Ratnatunga and Jones, 2012; Adams, 2013; 2015; Black Sun, 2014; Bernardi and Stark, 2016; Giordano et al., 2018; Dragomir, 2018) were put forward as contextual discussing for this research. The study previously shows using theory such as legitimacy and stakeholder theories in environmental control through an organizational reporting approach (Rankin et al., 2012; Mata, et al, 2018). Study for role of country –and firm-level determinants in environmental, social, and governance disclosure (Baldini et al., 2018). Other studies (Dumai and Dai, 2017; Dumai et al., 2017) showed research themes for different study subjects. Then research related to best practice reporting (IR) on 164 company organizations around the globe (Black Sun, 2017). As well as a study on disclosure of social investmet through the role of (IR) (Adams et al., 2016).

Our research serves as an indicating a cap to address discuss aspects of investment management related to aspects of regional investment information. The study is carried out based on the extensively used the legitimacy theory to explain and control for what that to be planned and to be realized. With accountability for investment as social contracts point of view. Also, it relates to stakeholder theory within fulfillment the performance accountability (Rankin et al., 2012). Research uses aspects in the integrated thinking model with their alignment in the integrated reporting system (IIRC, 2011, 2013, WICI, 2013; IIRC, 2018, 2019) within the implementation of ISRIP (CICB, 2017, 2019).

The benefit of the normative model of investment management development (Figure 1) is to support the role of ISRIP according to the promotional strategy approach carried out in 3 (three) groups of regional investment potential (CICB, 2017). Therefore, it is stated whether there are aspects (integrated thinking and aspects of a connecting functional department), meeting an alignment with strategic communication and with the information criteria towards on regional investment units that are potential, priority and investment being ready to be offered. Therefore, this study aims to answer for 2 (two) following questions: (i) Are there differences in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance, past performance, future prospects, and connecting functional departments) (ii) Are there relationship in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance, past performance, future prospects, and connecting functional departments). The benefit of this research is to provide insight within the development of regional investment management. Being through by the information system of regional investment potential (ISRIP) as an accountability tool that according to the harmony within achievement of the SDGs.

RESEARCH METHODS

This section describes the approach used in the study, identified the sample unit and unit of analysis, data collection process approach, and data analysis process approach. This research is a quantitative research using non-parametric statistical analysis tool.

2.1. Sample and unit of analysis

The research sample is regional government in Indonesia that manages the information system of regional investment potential (ISRIP). The units of analysis are regional investment units as investment profiles offered to investors through ISRIP communications. Regional investment units are classified into 3 (three) regional investment classifications, namely: (i) potential investment (P), (ii) priority investment (Pr), and (iii) investment that has an opportunity (Opportunity (O)) ready to offer (CICB, 2017). The selection for sample unit and for the unit of analysis are carried out with gradual judgment sampling on a cluster basis. With top down and bottom up investment management approaches (CICB, 2017). This stage resulted into 3 (three) research sample clusters, namely: (i) selected sample for 4 (four) provinces with 8 (eight) regional government entities (district / cities) (top down approach, CICB, 2017). (ii) selected sample for East Kalimantan Province (contemporary issue of being the new capital city for Indonesia (JLL, 2020), bottom up approach (CICB, 2017). (iii). Determination of samples at the government entities of South Kalimantan Province (related contemporary issues as the gateway to the new capital city of the State, bottom up approach, CICB, 2017). The second stage is the selection within regional investment units within selected regional government, with investment criteria: (i) potential investment criteria to be carried out (in accordance with development plans, sectoral strategic plans, investment locations and spatial plans, linkages between sectors, can be cover costs, preliminary studies), (ii) priority investment criteria to be carried out (regional government proposals or investor requests, pre-feasibility studies, identified risk management, proposed priority public-private partnership programs, government support for identification of poverty alleviation investments), (iii) investment criteria that are ready to be offered (complete investment supporting documents, government approval support, administrative readiness related to the realization of investment programs / activities / projects) (CICB, 2017). Results of sample selection and unit analysis: (i) with 48 (forty eight) regional investment units in the top down cluster, (ii) with 24 (twenty four) regional investment units in the bottom up cluster and (iii) with selected sampe for 28 (twenty eight) regional investment units in the bottom up cluster.

This amount is considered sufficient (Wolf et al., 2013) for the purposes of analysis and for conclusions.

2.2. Variables and measurement

The operational definitions of variables, indicator items and their measurement are presented in Table 2.

Table 2. Variables and measurement

Types of variable	Variables and Indicators	Measurement
Independent	X.1. Connecting strategy. Be defined as connecting strategy for what information is connected, towards potential investment, priority investment, and leading investment opportunities. (IIRC, 2011; 2013; CICB, 2017; Dumay and Dai, 2017).	Nominal
	X.2.. Governance. Be defined as governance for what information is connected, towards potential investment, priority investment and leading investment opportunities. (IIRC, 2011; 2013; WICI, 2013; CICB, 2017; Dumay and Dai, 2017).	Nominal
	X3:Past performance. Be defined as past performance for what information is connected, towards potential investment, priority and leading investment opportunities. (IIRC, 2011; 2013, WICI, 2013; CICB, 2017; Dumay and Dai, 2017).	Nominal
	X4: Future prospect. Be defined as future prospect for what information is connected, towards potential investment, priority investment and leading investment opportunities. (IIRC, 2011; 2013; WICI, 2013; CICB, 2017; Dumay and Dai, 2017).	Nominal
	X5: Connecting functional departements. Be defined as connecting functional departements for how information is connected, towards potential investment, priority investment and leading investment opportunities. (IIRC, 2011; 2013; WICI, 2013; CICB, 2017).	Nominal
Dependent	Y.1. Implementation of information system of regional investment potential (ISRIP)	Nominal
	Y.1.1. Implementation of six (IR) capital for ISRIP. Be defined as in central connectivity for completeness of information within regional investment units to be informed into six (IR) capital that can be reported within ISRIP (IIRC, 2011, 2013, WICI, 2013; CICB, 2017).	
	Y.1.2. Implementation for strategic communication of ISRIP. Be defined as connecting functional between regional governmental work units internally, and with other level of government externally towards performance of ISRIP. (IIRC, 2011, 2013, WICI, 2013; CICB, 2017; UNCTAD, 2018a; Pineiro et al., 2018).	Nominal

(Sources, 2020)

The independent variable and the dependent variable of this study with each indicator item, measured by a nominal scale. Measurement using items of indicator of each research variable towards the research analysis unit (regional investment unit) with the type of potential investment (P), priority (Pr) and investment ready to offer (O). In accordance with the nominal measurement scale, direct measurements are made with the relevant documentation source (CICB document, 2017, 2019; general investment plan document (online data reference related to regional investment) related to the study subject). For measurements that indicate the indicator item is met in the investment profile of the regional investment unit, the value is given 1. While for the measurement showing the characteristics of the not exist indicator item is fulfilled in the investment profile of the regional investment unit, the value is given 0.

2.3. Data analysis

The results of direct measurement of the indicator items of the alignment of the information criteria in the regional investment unit profile (P / Pr / O) are then used in the analysis phase. In accordance with the research objectives, the results of the analysis are used to assess the propositions in the first statement, whether there is a difference, and for the second statement whether there is a relationship between the variables. For data analysis and testing of hypothesis statements (Ho1 and Ho2) used non-parametric statistical test tools, namely the chi-Square goodness of fit test or the chi-square test for independence (Conover, W.J, 1980). With use the chi-square test tool and the use of the contingency within measure the frequency of observation (OF) and the expected frequency (EF), to value of test difference of hypotheses (Ho1). Then to test the level of relationship between variables (Ho2) is used the correlation test with referring to the C-contingency value. For the analysis stage and fulfillment of the conclusions of this study, we also use a focus group discussion (FGD) approach as a semi-structured discussion forum. And by conducting field research for 1 (one) district that is currently developing to upload data to ISRIP as a role model for this research. Several key people were involved in making the statement. As part of thoughts and ideas related to efforts to develop investment management according to regional conditions in the context of investment promotion nationally and globally.

1. Result and Discussion

Hypothesis testing for the difference test (H₀₁) and for the relationship test (H₀₂) was carried out using the chi-square test for goodness of fit. Testing for the Ho1 hypothesis is done by comparing the X₂ table with the X₂ observation as the basis for acceptance or rejection of the research Ho1. Furthermore, to assess the closeness of the relationship within Ho2 between variables X and Y, be valued, after obtained the results of the chi square difference test, with a measure of the contingency coefficient (C Contingency). The data in Table 6 are the basis for testing the research hypothesis.

Hypothesis Testing (H₀₁), is a test for different tests in the application of aspects from the dimensions of integrated thinking (IT) with the implementation of a regional investment potential information system (ISRIP). Testing by measuring the frequency of observation (OF) with the expected frequency (EF) whichever is the greater the frequency. The measurement results show that the observation frequency reaches a value of 137.97. Then for the expected frequency (EF) which is determined by referring to the degrees of freedom of rows and columns (6-1) (7-1) with a significance level of 0.05, the frequency value in the chi squared table is 43.77. Based on the comparison of X₂ observation 137.97 which is greater than X₂ table 43.77, this means that Ho1 can be rejected, at the chi-square significance value < 0.05. The results of testing this hypothesis indicate that there are differences in the application of the Regional Investment Potential Information System (ISRIP) and the fulfillment of the integrated thinking aspect. These results also mean that fulfillment of (connecting strategy, governance, past performance, future prospects and connecting functional departments) provides performance outcomes in the regional government's ISRIP role.

Table 5. Observation frequency (OF) and expectation frequency (EF)

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six (IR) C	Cont El (IR)	Amount
The rhetorical components of integrated thinking fit with (IR)								
Very Rhetorical Component IT & IR								
Score 6 (OF)	28	32	32	63	75	73	89	392
Fe	56	56	56	56	56	56	56	
Rhetorical Component IT & IR								
Score 5 (OF)	42	25	43	24	8	15	1	158
Fe	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	

Rhetorical Enough								
Score 4 (OF)	19	32	23	11	3	1	10	99
Fe	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	
Less Rhetorical								
Score 3 (OF)	11	9	2	1	8	11	0	42
Fe	6	6	6	6	6	6	6	
Very Less Rhetorical								
Score 2 (OF)	0	2	0	1	4	0	0	7
Fe	1	1	1	1	1	1	1	
Bad Rhetorical								
Score 1 (OF)	0	0	0	0	2	2	0	4
Fe	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	
Amount	100	100	100	100	100	100	100	700

(Sources, processed from primary data, 2020)

Table 6
Contingency & chi square observation

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six (IR) Cap	Cont EI (IR)	Amount
	-28	-24	-24	7	19	17	33	
	784	576	576	49	361	289	1089	
Xo Observation	14	10,2857	10,2857	0,875	6,4464	5,1607	19,4464	35,4464
	19,4285	2,42857	20,4285	1,42857	-14,5714	-7,5714	-21,5714	
	377,4693	5,8979	417,3265	2,0408	212,3265	57,3265	465,3265	
Xo Observation	16,7233	0,2613	18,4891	0,0904	9,4068	2,5397	20,6157	35,5641
	4,8571	17,8571	8,8571	-3,1428	-11,1428	2,8571	-4,1428	
	23,5918	318,8775	78,4489	9,8775	124,1632	8,1632	17,1632	
Xo Observation	1,6681	22,5468	5,5468	0,6984	8,7792	0,5772	1,2135	30,4603
	5	3	-4	-5	2	5	-6	
	25	9	16	25	4	25	36	
Xo Observation	4,1666	1,5	2,6666	4,1666	0,6666	4,1666	6	12,5
	-1	1	-1	0	3	-1	-1	
	1	1	1	0	9	1	1	
Xo Observation	1	1	1	0	9	1	1	14
	-0,5714	-0,5714	-0,5714	-0,5714	1,4285	1,4285	-0,5714	
	0,3265	0,3265	0,3265	0,3265	2,0408	2,0408	0,3265	
Xo Observation	0,5714	0,5714	0,5714	0,5714	3,5714	3,5714	0,5714	10
Amount				X2 Observation				137,9709
				X2 table				43.77
				N				700
				C Contingency				0,4057

(Sources, processed from primary data, 2020)

Hypothesis Testing (H₀₂), is a hypothesis testing in assessing the level of relationship between the variables from the different test results (H₀₁). By calculating the value of the Pearson contingent coefficient ($C = \sqrt{XO2} / (N + XO2)$). Based on the data in Table 6 (appendix-Contingency & chi square observation), the value of $C = \sqrt{137.97} / (700 + 137.97)$ is obtained = 0 , 4057. Referring to Guilford's empirical rule, it shows that the C-contingency value is a bounded association coefficient between $0 < 1$, where: 0 = no association / relationship, and 1 = perfect association / relationship. contingency C of 0.4057 can be expressed as “moderate correlation.” These results indicate that there is a significant relationship with moderate correlation in the performance of the regional investment potential information system (ISRIP) through integrated thinking for completeness of information on six capital (IR) , and with strategic communication in enhancing the role of ISRIP.

4. Conclusions

The results of this study gave evidences form the basis for the coherence of an integrated thinking model that is in line with integrated thinking in the management of communication of regional investment units. The results of this study are empirical facts about the role clarity (future prospects, connected functional departments, implementation of six capital (IR) for ISRIP, and implementation for ISRIP strategic communication) in ISRIP implementation. These empirical facts are in line with a number of studies related to the integrated reporting aspect in creating value over time (Adams, 2013; 2015; Black Sun, 2014; 2017; Bernardi and Stark, 2016; Giordano et al., 2018; Dragomir, 2018; Baldini et al., 2018). The results of this study are also in line with Ratnatunga and Jones (2012) in communicating the five bottom line theory of reporting with the reporting index criteria. Then with moderate results, where the empirical facts from aspects (connecting strategy, governance, and past performance) which have relatively low achievements in strengthening ISRIP performance, show alignment with the study perspective (Dumai et al., 2017). However, the results of the study provided moderate empirical facts that investment management has a relationship with a social contract perspective related to its decisions, with the theory of legitimacy and stakeholders in environmental control through an organizational reporting approach (Rankin et al., 2012 ; Mata et al., 2018).

In the context of managing Indonesia's regional investment for the ASEAN and global environment, it is necessary to implement the functions and roles of ISRIP (CICB, 2017, 2019). This system is implemented formally by complying with national regulations (Law No. 25 of 2007). The functions and roles of ISRIP are fulfilled in relation to the suitability of the investment communication approach with the agreement in the AEC (AEC, 2017). Because Indonesia is a member of the ASEAN Community and the integration of the AEC, investment management in the Indonesian region must be related to the ASEAN Comprehensive Investment Agreement (ACIA). This step is also in line with investment policies in the integration of development priorities and sectors for investment (AEC, 2015). Furthermore, investment management within regional, however, should obey to enhance within compliance of the SDGs (UN, 2017).

This study has limitations regarding the use of nominal scale measurement. Therefore, next research is needed with strengthen the measurement scales, also with expanding the research sample. With the support of a more comprehensive study, a regional investment management policy should be able to receive input in a more substantive and massive manner.

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Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential

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Abstract

Purpose: The purpose of this research article is to examine whether aspects of integrated thinking are applied in the integration of information in the profile of regional investment units and supported by strategic communication through the role of information system of regional investment potential (ISRIP) which is managed by regional government. **Design / methodology / approach:** we conducted a literature study with a quantitative approach in 6 (six) Provinces and 28 (twenty eight) Regency / City Government agencies. With 100 units of regional investment analysis (potential, priority, and opportunity). The measurement uses a nominal scale with the chi-square test for goodness of fit to obtain a measurement of the frequency of observation (OF) compared to the expected frequency (EF). **Findings:** the measurement results show differences in implementation and a moderate level of relationship with the application of integrated thinking in the integrated reporting <IR> criteria for ISRIP implementation. **Originality:** This research article contributes to the growing debate about the benefits of integrated reporting <IR> as a voluntary and mandatory reporting initiative, which has been adopted by various global organizations **Practical Implications:** Being an early adopter of reporting practices (IR) on the implementation of an ISRIP, in line with global norms in achieving sustainable development goals (SDGs).

Keywords: integrated thinking, integrated reporting <IR>, regional investment, regional investment information system

Keywords integrated thinking, integrated reporting <IR>, regional investment, information system for regional investment

1. Introduction

Public Investment Management needs to be done with effective investment communication. To manage this public investment at various levels, besides fulfillment an effectiveness, the government also needs to enhance efficiency, by coordinating, strengthening capacities, and ensuring a healthy framework at all levels of government [1]. Furthermore, this Investment communication fulfillment in context of sustainable development will be related to environmental management systems [2]. This relates to development and audit to investment

accountability. As implementing of a reference related to the international standard ISO 14001 [3]. It is in line with the global development communication which has mandate referring to sustainable development in accordance with the integration of the SDGs, throughout the investment cycle [4]. Furthermore, where public investment management must be able to contribute not only within economic value [5], but more to sustainable development targets [6]. This is a moral aspect within an investment ethics [7], according with ethics in the use of information technology [8], due to the investment management is implemented with the support of information system functions and roles.

Recently, efforts to control the environment related to investment management have been continuously improved, through initiative to enhance the role of an integrated reporting system [9]. Triggered by a significant environmental impact related to the sustainability of investment management. As facts related to the impact of investment management, which until now shows the various challenges that cause damage to the natural environment [10, 11]. As well as the impact of social costs faced from an investment management [12, 13, 14]. The overall challenge of the impact of investment management is a challenge in the regional, national and global context according with the effective management of regional investment in investment promotion [15]. Therefore, investment management accountability is needed to strengthen the measurement and reporting approach for sustainability investment information [16]. This need is in line with the momentum of the evolution of the reporting system for global organizations with global norms by implementing an integrated reporting system framework <IR> [17, 18, 19], which is projected to be applied to global organizations since 2020 [20]. As a contemporary reporting system that can be applied voluntarily, or as well as compulsorily in its implementation [21].

Normatively, to fulfill the role of information system performance, it is necessary to orientate towards an integrated reporting system model [17, 18, 19]. This reporting system is a reporting model developed and refining the sustainable reporting system [22] or with term triple bottom line reporting [23] from global reporting initiatives [24, 25]. As it is known that the above reporting types of GRI only result in an evaluation of historical value, meanwhile <IR> can create value over time [26]. Therefore, generally, it can become relevant efforts with considered the integrated thinking fit with integrated reporting <IR> [27, 28] towards creating value over time [17,18, 19] referring to regional investment management.

The management of investment in Indonesia for sustainable development has been stated in the vision of the general investment plan until 2025. With the aim of “sustainable investment in the context of realizing an independent, advanced and prosperous Indonesia [29, 30]. As part of global community, Indonesia has mandatory to increase effective investment communication, based on investment decisions that pay attention to the fulfillment of investment principles and objectives [31]. The investment context related to the achievement of the financial aspect for investment [32], and also within where investment is related to environmental principles which are sustainable and environmentally friendly by encouraging sustainable economic development [33, 4]. Based on these regulations or guidelines, all activities related to investment management are regulated for sustainable investment requirements, the fulfillment of requirements for strategic environmental assessments that must be carried out by the government before granting investment licenses. Therefore, this is the main thing of all investment management regulatory approaches in Indonesia which must be in line with the global context in the management of public investment [34]. In socio-technical terms, this is related to the realization of the performance of the functions and roles referring to the information system of regional investment potential (ISRIP) [29, 30].

Being functionally the implementation of investment management requires the communication for all of information which needed by investors. For their investments decision, in where of the region which be easily accessible, and with availability for comprehensive information on the website [30]. In this context, the CICB has established a national information system through by the regional governments, which manages information on potential investment on the www.regionalinvestment.bkpm.go.id website with the name "information

system of regional investment potential (ISRIP). Functionally and according to its role, an information system really needs its development to fulfill the completeness of contents and basic communication methods. An information system such as for regional investment management is designed to meet the performance of the information system. As an implementation of investment cycle communication [6] that meets investment management accountability requirements for global development sustainability [4].

Until this time being, efforts have been made to meet the sustainability of development through investment activities [29, 30]. With the ISRIP website that has been used, it shows facts related to the fulfillment of information which is still very limited and most regions have not updated the data, so that information communication cannot be implemented as a reference for investors. Meanwhile, in deciding to invest in an area, investors need information about investments that is easily accessible and complete on one site. Until now, data updating has been carried out by each region, while on the other hand most regions have not updated it. For the sake of information system effectiveness, ISRIP has overhauled this system by fulfilling the role of completeness of information contained in the communication of regional investment units. This includes content elements in ISRIP, such as information on why Indonesia, investment opportunities, incentives, OSS licensing, infrastructure, and potential companies that are ready to partner with up to date data / collaboration links between Ministries / Agencies and business associations. The Investment Coordinating Board (CICB) keep on develops information on investment potential in the information system of Regional Investment Potential (ISRIP) [30]. For encouraging competition between regions in increasing investment potential with updating data on the website. The focus is on five provinces that are very promising and investment friendly which will be circulated and communicated every three months to be pushed to become regional investment champions. The focus of the first phase of investment is in the Java region, namely West Java, Banten, DKI Jakarta, Central Java and East Java [29, 35].

Based on the state of condition of investment management in Indonesia, it can be seen that there are challenges in investment management today. There are challenges in the management of domestic direct Investment (DDI) and foreign direct investment (FDI) in terms of equitable growth. Data on investment realization based on investment sector and location shows the distribution of investment, around 60% is still concentrated in Java and 40% outside Java. Among 34 provinces with 514 districts / cities, shows investment activities are concentrated in only around 30 districts / cities. This has resulted in a widening gap in economic development between regions. One of the obstacles faced by investors in exploring investment is the lack of information on investment potential and infrastructure support in the regions [35]. It also becomes a challenge in the global context for investment management within investment promotion effectively [15]. This matter also can be viewed as the impact of the challenges, which showed in the criteria for “ease of doing business” [36], where Indonesia's position is at level 73 out of 190 countries [37].

In Table 1 is presented a normative idea for development for fulfilling the role of ISRIP. Normatively, it refer to integrated thinking which is in accordance with integrated reporting [27, 28] towards sustainable investment management within creating value over time [9]. The perspective for adoption and implementation <IRF> be researched [8] is explained through accounting theories as antecedents and consequences, and the existence of internal and external determinant factors that determine the success of implementation. Therefore, adoption and intended factor of implementation <IR> for ISRIP can be used within the organization's business model [18] which is used in management for the investment management cycle [6].

Table 1

The integrated thinking's components fit with (IR) for ISRIP development

Integrated thinking (IT) ISRIP development fit with integrated reporting (IR)			
What information is connected and how information is connected	Content of information within regional investment units into ISRIP		Strategic regional investment management communication within ISRIP
Connecting strategy	Information for regional investment units	6 (six) (IR) capital	
Governance	Description of investment opportunities, market opportunities, estimated investment value, feasibility to offer	Financial (economic measures)	Coordinating a cross level of government and polices.
Past performance	Human resources: feasibility to offer	Human	Strengthen capacities at all levels of government.
Future prospect	Facilities and infrastructure: production and investment scale offered, available infrastructure, supporting industries, feasibility to offer	Manufacture	Proper framework conditions for public investment at all level of government.
Connecting functional department	SME's stakeholders and large entrepreneurs, feasibility to offer	Social	Sourcing and due diligence of screening investments for: environmental feasibility and to advance an SDGs
	Support of regional regulations, regulatory aspects, land ownership status, feasibility to offer	Intellectual property right	Investment selection and structuring (analysis and verification)
	General condition of the area, availability of land for development, environmental aspects, feasibility to offer	Natural (environment)	Measuring and reporting progress made toward the SDGs

(Sources: WICI, 2013; OECD, 2014; IIRC, 2011,2013, 2018, 2019; UNCTAD, 2018a; Pineiro et al., 2018; CICB, 2017, 2019)

As described in Table 1, this represents an idea from the OECD [1, 38], with 3 (three) perspectives on investment management. The development model also draws on a perspective [15] that emphasizes the importance of a strategic approach to SDGs. In line with this thought, fulfilling the role of information systems for investment requires fulfilling investment management in the context of the objectives in the SDGs, and putting factual data behind the word 'impact' for investment management performance [6]. Regional governments need to fulfill the assurance that investment management communication with the ISRIP design can be accounted for for sustainable development [4]. For important reasons as has been stated, normative ideas are put forward in the fulfillment of the 'thinking component integrated into the integrated reporting system <IR> [17, 18, 27, 28] for the development of ISRIP [29, 30]. Furthermore, as described in Table 1, it also shows the idea of using the pillars of best practice investment management adopted as an important cycle of investment management. For ISRIP developments represented by the achievement of the information system performance. First, within the integration of core information, additional information, and the credibility of information for regional investment unit profile information (Table 2) towards benchmarks of 6 (six) of capitals of integrated reporting <IR> [18]. Second, with strengthening the system with strategic communication through the regional government ISRIP.

Table 2 . Information Criteria Within a Regional Investment Unit

Information criteria for regional investment units	Information on analysis results	Information on the results of factual verification
The object offered (name of the investment unit)	Name of regional investment unit	Name of regional investment unit
Availability of raw materials	There is (name of place)	Support
Availability of competent human resources	There are graduate educational institutions available	Support
Availability of facilities and infrastructure	complete facilities and infrastructure available	Support
Short term and long term market	The existence of a captive market for the products produced	Support
Domestic and foreign markets	There is a captive market for domestic and abroad	Support
The involvement of small and medium stakeholders and large entrepreneurs	There are areas for SMEs and partnership facilities	Support
Compliance with statutory regulations	Already have principal permits and and other related regulations	Support
Environmental aspects	there has been an analysis of environmental impact studies	Support
Land availability and status and ownership	already controlled by the area manager with an area (... hectares), available land (..... hectares)	Support
Estimated investment (IDR)	--- (money term)	Support
Eligibility to be offered to investors	---	worth offering to investors

(Sources, CICB, 2017)

The presentation of data descriptions in Table 2 shows the context of information criteria for each regional investment unit communicated in the ISRIP, which refers to the content for regional investment information criteria for regional government communication [29]. As applied to the information criterion (Table 2), it comprises a description of the core information, additional information and credibility of the information which is presented as a representation of the relevant and reliable biological assets [7] information which offered as unit of the regional investment.. This information is presented in the ISRIP for regarding of investor evaluation needs, within cost and fair value analysis carried out on investment opportunities in the offered regional investment units. Integration of information and information communication through ISRIP must be able to prevent information asymmetry and adverse selection [7] for regional investment information within investment management.

Based on the explanation regarding investment management to fulfill the ISRIP performance role, the approach described (Table 1 and Table 2) can be used. Therefore, in general the approach to meeting the information criteria for the alignment of regional investment profiles is represented in the fulfillment 6 (six) of capitals of integrated reporting <IR> [18], that relevant to be implemented in ISRIP. Then strategically by laying a foundation based on investment management to fulfill the strategic communication aspects of investment [6, 15, 29, 30], to achieve strategic goals that are in line with the SDGs [4]. Both approaches are relevant means of realizing the role of the information system of regional investment potential (ISRIP) for regional governments.

The management of ISRIP requires aligning both strategic and technical aspects. First, with strategic manner, because ISRIP is part of investment promotion carried out through the function and role of the Indonesia Investment Promotion Center (IIPC). Due to in investment management, the functions and roles of ISRIP be integrated [29, 30, 39], to achieve the strategic objectives in line with SDGs [4]. Therefore, strategically, fulfilling the information criteria for communication of regional investment units is needed as a strategic way to fulfill objectives that

are in line with the functions and roles of the IIPC. In accordance with the functions and roles of IIPC, the function orientation and strategic role of ISRIP is to fulfill several tasks and functions according to IIPC, namely: (i) Increase investment from domicile countries and working areas to Indonesia; (ii) Facilitating investment from Indonesia to domicile countries and working areas. Second, from an information technology perspective, because ISRIP is an integrated part of the National Single Window for Investment (NSWI) [39]. Functionally, for operational capability, ISRIP is managed through its implementation at the Regional Government Investment Service. Become an integrated part of the joint sitemap in NSWI, namely with a homepage for the public (individuals / communities), and for investors (individuals or companies).

Some of previous studies [40, 41, 42, 43, 44, 45] were put forward as contextual discussing for this research. The study previously shows using theory such as agency theory and institutional theories in environmental control through an organizational reporting approach [7, 46]. Study for role of country and firm-level determinants in environmental, social, and governance disclosure [47]. Other studies (Dumai and Dai, 2017; Dumai et al., 2017) [48, 49] shows research themes <IR> for different study subjects. Then research related to best practice reporting (IR) on 164 company organizations around the globe [50]. As well as a study on disclosure of social investmet through the role of <IR> [51]. Facts, shows for an innovative investment information system which is needed to be built to fulfill critical role in shaping belief about the environment from role of information system, with the Belief-Action-Outcomes model [52]. Other of study were put forward in accordance with information systems and their role in management decision making. Such as, technology impact models, social impact models and integration models, information technology on organizations as contingent perspective for information systems [53]. Research that shows the fact of the fulfillment of information system innovations that can fulfill sustainability processes and practices with green information systems and technology [54, 55]. Business and strategy with the concept of investment in information systems with technology, organization, environment [56, 57]. Fact with the aspect of dependence on government policies and projects, and policy effectiveness is measured by short-term benefits [58]. Research related to information technology blockchain [59]. Technology-related studies such as the Internet of Things (IoT), Virtual Reality (VR) or Cloud Computing [60].

2.Objectives of Research

This research was conducted in relation to the problems faced and where several previous studies showed a connection with the aspects of the discussion in this study. Therefore, there is interest in the effort to verify the empirical facts referred to by raising the questions in this study. The main research questions addressed in this study are:

- Are the aspects of integrated thinking (linking strategy, governance, past performance, future performance prospects, departmental functional relationships) implemented in the fulfillment of information integration and strategic communication of regional investment units through implementation role of ISRIP?
- Does the fulfillment of integrated thinking cause differences in implementation achievements in information integration of 6 (six) capital cities <IR>, and strategic communication of regional investment units through implementation role of ISRIP?
- How strong is the relationship between implementation achievements in the integration of information for 6 (six) capitals of <IR>, and strategic communication of regional investment units through implementation role of ISRIP?

3. Research Methods

This research approach used a quantitative systematic review [61, 62], using a different test approach and a test of the relationship between aspects or variables with non-parametric statistics, with using the chi-square goodness of fit test or the chi-square test [63]. This section

describes the approach used in the study, identifies the sample and analysis units, variables and measurements, the data collection process approach, and the data analysis process approach.

3.1. Sample and unit of analysis

The research sample are regional government in Indonesia that manages a information system of regional investment potential (ISRIP). From regional government in Indonesia consist of 34 (thirty-four) Provinces, 415 (four hundred and fifteen) Districts/Regencies, and 93 (ninety-three) Cities, samples were selected by judgment sampling on the basis of the following considerations: (i) Regional governments that determine top-down regional investment management through the investment coordinating body, (ii) the regional governments that are rumored to be the location of the new capital city of Indonesia which manages the bottom up regional investment management, (iii) The regional government as the gateway to the nation's capital city which determines the bottom up regional investment management [64]. Then, for the determination of the unit of analysis from the regional investment units which is offered through ISRIP communication, undertaken based on 3 (three) types of investment, namely: (i) potential investment (P), (ii) priority investment (Pr), and (iii) opportunity investment (Opportunity (O) or as investment that ready to offer [29]. For sample and data of analysis units are described in the following Table 3:

Table 3
Sample and Unit of Analysis

Regional Government	Approach	Regional investment units	Amount
4 (four) Provinces- and 8 (eight) Regencies/Cities	Top Down	Potential (P) Priority (Pr) Opportunity (O)	16 units 21 units 11 units
1 (one) Province- and 7 (seven) Regencies/Cities	Bottom up	Potential (P) Priority (Pr) Opportunity (O)	7 units 5 units 12 units
1 (one) Province- and 13 (thirteen) Regencies/Cities	Bottom up	Potential (P) Priority (Pr) Opportunity (O)	11 units 10 units 7 units
			100 Units

(Sources, CICB, 2017 [29], Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025 [65^a, 65^b]; Investment Agency & Integrated Services - Tanah Laut Regency and Center for Research and Community Service, Lambung Mangkurat University, Banjarmasin, 2019 [66]; Regional Planning Agency for South Kalimantan Province, 2019; General plan for investment in South Kalimantan 2016-2025 [67^a, 67^b].

The units of analysis are regional investment units as investment profiles offered to investors through ISRIP communications. Detail information for the sample region and unit of analysis are presented in table 3.1., Table, 3.2., and table 3.3 (appendix). With results of sample selection and unit of analysis covered: (i) 48 (forty eight) regional investment units in the top down cluster, (ii) 24 (twenty four) regional investment units in the bottom up cluster and (iii) 28 (twenty eight) regional investment units in the bottom up cluster. This amount is considered sufficient [68] for the purposes of analysis and for conclusions.

3.2. Variables and Measurement

The research variables are built from a framework of an integrated thinking model into integrated reporting [27, 28], which is in accordance with the determinants of the framework [69]. Furthermore, an integrated thinking model is determined as an independent variable that determines the implementation of integrated reporting as the dependent variable [70]. Research variables and measurement approaches are built according to implementation theory that fulfills a breadth of coverage [71] as a micro and meso level theory in explaining, and predicting

variable relationships. The operational definitions of variables, indicator items and their measurement are presented in Table 4.1 and Table 4.2.

Table 4.1. Independent Variables and Measurement

Variables and Indicators	Measurement
Connecting strategy for what information is connected. Be defined as as connecting strategy for potential investment, priority investment, and opportunity investment. With items of indicators, namely: (i) referring to the strategic objectives of the regional government, (ii) Set for the sustainability of the natural environment, (iii) economic feasibility, (iv) in terms of financial feasibility, (v) as organization's business model with reporting requirements, and (vi) with social situation analysis for stakeholder needs [17, 18, 27, 29, 48]	Nominal
Governance for what information is connected. Be defined as governance of potential investment, priority investment and opportunity investment . With items of indicators, namely: (i) Compliance Process for investment working groups, (ii) Support from regional investment of leading sector of work units, (iii) Implementation of communication process between work units in investment management (iv) Strategic direction of regional investment policies (v) The strategic decision process in investment offerings, (vi) Consideration of values and relationships with stakeholders [17, 18, 27, 29, 48, 72, 73, 74]	Nominal
Past performance for what information is connected. Be defined as past performance of potential investment, priority invstment and opportunity investement .With items of indicators, namely: (i) The supply of investment resources has been determined by KPIs, (ii) Information resource offerings have been established with KRIs, (iii) Consideration of economic (financial) performance with other aspects of capital, (iv) regional investment value takes into account significant external factors, (v) Providing facilities and / or incentives for regional investment, and (vi) Availability for performance information "major external economic", environmental, and social impacts [17,18, 27, 29, 48, 72, 75, 76, 77]	Nominal
Future prospect for what information is connected . Be defined as future prospect of potential investment, priority investment and opportunity investment. With items of indicators, namely: (i) : Balance of short-term and long-term interests, (ii) Management's expectation of future prospects, (iii) Sustainable organizational business model, (iv) Investment area with estimation and sensitivity analysis, (v) Assessment of prospects and uncertainties faced, (vi) Information about target, forecast, performance projection [17, 18, 27, 29, 48, 72, 75,76, 78, 79]	Nominal
Connecting functional departements (CFD) for how information is connected. Be defined as connecting functional departements used ISRIP With items of indicator, namely: (i) Offer regional investment potential and opportunities with application systems (desktop and Web-based), (ii) Communication on human resource management in the regions, (iii) GIS for managing the investment environment, (iv) Individual ethical intelligence between work Governmental Units, (v) Working unit groups with information for sustainability feasibility, (vi) Implementation of e-Government with information system of regional investment potential [17, 18, 27, 29, 48, 72, 80, 81, 82, 83]	Nominal

(Sources, 2020)

Table 4.2. Dependent Variables and measurement

Variables and Indicators	Measurement
Implementation of 6 (six) capitals of <IR> capitals for ISRIP. Be defined as in connectivity of integrated information to ensuring that all <IR> capital might be reported within business process for ISRIP as an innovative integrated information for sustainability development. With items of indicator : (i) Natural capital: environmental aspects, natural resources, availability of raw materials, analysis of environmental impact, pre-feasibility study, (ii) Human capital: Availability of competent human resources, (iii) Manufacture Capital: Availability of facilities and infrastructure, (iv) Financial Capital, with short and long term markets, domestic markets, foreign markets, investment forecasts, (v) Socio and relationship capital: Involvement of stakeholders and investors, and (vi) Intellectual Property Right: land ownership, geography indicated, Compliance with statutory regulations [9, 17, 18, 24, 25, 27, 29, 83, 84]	Nominal
Implementation for strategic communication of ISRIP. Be defined as connecting functional between governmental work units with others entites and with investors, as innovative strategic communication which connecting departments functionally through by ISRIP. With items of indicators, namely: (i) Overview of the organization and business model of the investment unit cycle, (ii) The operating context, including the risks and opportunities of the investment unit, (iii) To reach strategic objectives and strategies to achieve the objectives of the investment unit, (iv) Governance related to investment unit management, (v) Performance achievements related to the investment unit, and (vi) Future prospects related to investment units [6, 15, 17, 18, 27, 29, 69, 73, 83, 84]	Nominal

(Sources, 2020)

The process of measuring all variables on each indicator item uses a nominal measurement scale. Measurements are made of the integrated thinking indicator items that are measured (present or not) applied to the integration of information in the unit of analysis for regional investment units: potential investment (P), priority investment (Pr), and opportunity investment (O), in the documentation of reports of CICB (2017) related to investment in region, investment plan reports from the Provincial / Regency / City Governments, which are available in hard copy or online. In accordance with the rhetorical component of integrated thinking with <IR>, where the results of the assessment that meet the criteria for indicator items are given a value of 1, and 0 for criteria where there is no application. Each assessment result is entered into a nominal scale achievement, based on 6 (six) integrated thinking descriptor items on 5 (five) independent research variables and 1 (one) dependent variable in 2 (two) research dimensions of <IR> characteristics.

3.3. Data collection

Research data collection was carried out through the following stages:

-Stage 1: Determination of Provincial / Regency / City Government entities as sample of research.

-Stage 2; Determination of regional investment unit as unit of analysis within the selected Provincial / Regency / City Government entities as samples, into the type: potential investment (P), priority investment (Pr), and investment ready to offer of opportunity investment (O).

-Stage 3 : Collecting data according to document sources as document review approach through by: (i) Documents of Capital Investment Coordinating Board, 2017; General plans for investment in the province / district concerned (ii) Document on Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025), and (iii) Document of Investment Agency & Integrated Services - Tanah Laut Regency, Center for Research and Community Service, Lambung Mangkurat University Banjarmasin, 2019; Regional Planning Agency for South Kalimantan Province, 2019).

-Stage 4: Measuring the presence or absence of each indicator item of integrated thinking variables / aspects (Table 4.1. and Table 4.2.), with the criteria for regional investment information within Table 2 as information criteria which be determined by (CICB, 2017). Measurement stage be undertaken of regional investment units for: (i) criteria for potential investment (P) to be implemented (according to development plans, sectoral strategic plans, investment locations and spatial plans, linkages between sectors, can cover costs, preliminary studies), (ii) criteria for priority investment (Pr) to be undertaken (with regional government proposals or investor requests, pre-feasibility studies, identified risk management, proposed public-private partnership programs, government support for identification of poverty alleviation investments), (iii) ready-to-offer investment criteria or opportunity investment (O) (with complete investment supporting documents, support for government approval, administrative readiness related to the realization of investment programs / activities / projects)

3.4. Data analysis

The results of direct measurement of the indicator items of the alignment of the information criteria in the regional investment unit profile (P / Pr / O) are then used in the data analysis phase. In accordance with the research objectives, the results of the analysis are used to assess the propositions in the first statement, whether there is a difference, and for the second statement whether there is a relationship between the variables. For data analysis and testing of hypothesis statements (Ho1 and Ho2) used non-parametric statistical test tools, namely the chi-Square goodness of fit test or the chi-square test for

independence (Conover, W.J, 1980). With use the chi-square test tool and the use of the contingency within measure the frequency of observation (OF) and the expected frequency (EF), to value of test difference of hypotheses (Ho1). Then to test the level of relationship between variables (Ho2) is used the correlation test with referring to the C-contingency value. For the analysis stage and fulfillment of the conclusions of this study, we also use a focus group discussion (FGD) approach as a semi-structured discussion forum. Several key persons (Table 5) were involved in making the statement as part of thoughts and ideas related to efforts to develop investment management, according to regional conditions in the context of investment promotion nationally and globally.

Table 5
Summary of Key Persons of FGD

Pseudonym	Position	2019	2020
B1	Regent	X	
B2	Assistant II of the Regional Secretariat	X	
B3	Assistant III Regional Secretariat	X	
B4	Head office of the Investment Service	X	
B5	Sub-Regent	X	
B6	Regional Development Planning Agency-District		X
B7	Regional Development Planning Agency -Provincial		X

(Sources, 2020)

4. Result And Discussion

Hypothesis testing for the difference test (H01) and for the relationship test (H02) was carried out using the chi-square test for goodness of fit. Testing for the Ho1 hypothesis is done by comparing the X2 table with the X2 observation as the basis for acceptance or rejection of the research hypothesis Ho1. Furthermore, to assess the closeness of the relationship within Ho2 between variables X and Y, be valued, after obtained the results of the chi square difference test, with a measure of the contingency coefficient (C Contingency). The data in Table 6 are the basis for testing the research hypothesis .

Hypothesis Testing (H01), is a test for different tests in the application of aspects from the dimensions of integrated thinking (IT) with the implementation of information system of regional investment potential system (ISRIP). Testing by measuring the frequency of observation (OF) with the expected frequency (EF) whichever is the greater the frequency. The measurement results show that the observation frequency reaches a value of 137.97. Then for the expected frequency (EF) which is determined by referring to the degrees of freedom of rows and columns (6-1) (7-1) with a significance level of 0.05, the frequency value in the chi squared table is 43.77. Based on the comparison of X2 observation 137.97 which is greater than X2 table 43.77, this means that Ho1 can be rejected, at the chi-square significance value < 0.05. The results of testing this hypothesis indicate that there are differences in the implementation of information system of Regional Investment Potential (ISRIP) and the fulfillment of the integrated thinking aspect. These results also mean that fulfillment of (connecting strategy, governance, past performance, future prospects and connecting functional departments) provides performance outcomes in the regional government's ISRIP role.

Table 6. Observation frequency (OF) and expectation frequency (EF)

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> C	Stra.Com (IR)	Amount
The rhetorical components of integrated thinking fit with (IR)								
Very Rhetorical Component IT & IR								
Score 6 (OF)	28	32	32	63	75	73	89	392
Fe	56	56	56	56	56	56	56	
Rhetorical Component IT & IR								
Score 5 (OF)	42	25	43	24	8	15	1	158
Fe	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	
Rhetorical Enough								
Score 4 (OF)	19	32	23	11	3	1	10	99
Fe	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	
Less Rhetorical								
Score 3 (OF)	11	9	2	1	8	11	0	42
Fe	6	6	6	6	6	6	6	
Very Less Rhetorical								
Score 2 (OF)	0	2	0	1	4	0	0	7
Fe	1	1	1	1	1	1	1	
Bad Rhetorical								
Score 1 (OF)	0	0	0	0	2	2	0	4
Fe	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	
Amount	100	100	100	100	100	100	100	700

(Sources, processed from primary data, 2020)

Table 7. Contingency & chi square observation

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> Cap	Stra.Com (IR)	Amount
	-28	-24	-24	7	19	17	33	
	784	576	576	49	361	289	1089	
Xo Observation	14	10,2857	10,2857	0,875	6,4464	5,1607	19,4464	35,4464
	19,4285	2,42857	20,4285	1,42857	-14,5714	-7,5714	-21,5714	
	377,4693	5,8979	417,3265	2,0408	212,3265	57,3265	465,3265	
Xo Observation	16,7233	0,2613	18,4891	0,0904	9,4068	2,5397	20,6157	35,5641
	4,8571	17,8571	8,8571	-3,1428	-11,1428	2,8571	-4,1428	
	23,5918	318,8775	78,4489	9,8775	124,1632	8,1632	17,1632	
Xo Observation	1,6681	22,5468	5,5468	0,6984	8,7792	0,5772	1,2135	30,4603
	5	3	-4	-5	2	5	-6	
	25	9	16	25	4	25	36	
Xo Observation	4,1666	1,5	2,6666	4,1666	0,6666	4,1666	6	12,5
	-1	1	-1	0	3	-1	-1	
	1	1	1	0	9	1	1	
Xo Observation	1	1	1	0	9	1	1	14
	-0,5714	-0,5714	-0,5714	-0,5714	1,4285	1,4285	-0,5714	
	0,3265	0,3265	0,3265	0,3265	2,0408	2,0408	0,3265	
Xo Observation	0,5714	0,5714	0,5714	0,5714	3,5714	3,5714	0,5714	10
Amount				X2 Observation				137,9709
				X2 table				43,77
				N				700
				C Contingency				0,4057

(Sources, processed from primary data, 2020)

Hypothesis Testing (H0₂), is a hypothesis testing in assessing the level of relationship between the variables from the different test results (H0₁). By calculating the value of the Pearson contingent coefficient ($C = \sqrt{XO_2} / (N + XO_2)$). Based on the data in Table 7, the value of $C = \sqrt{137.97} / (700 + 137.97)$ is obtained = 0,4057. Referring to Guilford's empirical rule [85], it

shows that the C-contingency value is a bounded association coefficient between $0 < 1$, where: 0 = no association / relationship, and 1 = perfect association / relationship. With contingency C of 0.4057 can be expressed as “moderate correlation.” These results indicate that there is a significant relationship with moderate correlation in the performance of the information system of regional investment potential (ISRIP) through integrated thinking for completeness of information on six capital (IR) , and with strategic communication in enhancing the role of ISRIP.

Referring to the facts (Table 6), it shows that each indicator item has relative performance aspects in the fulfillment of integrated thinking within component very rhetorical in <IR> (6), rhetorical component in <IR> (5), and quite rhetorical in <IR> (4). The implementation of the connecting strategy, governance, and past performance aspects achieved the highest implementation which was relatively the same, namely 28% and 32%. Meanwhile, the implementation of the future prospect aspect achieved a high implementation of 63% and the highest implementation achievement was 75% for the aspect connecting functional department. The application of this aspect of integrated thinking has an impact on the achievement of the implementation of ISRIP performance which is relatively high in the integration of information content in regional investment units by 73%, and for the role of strategic communication by 89% through the implementation of ISRIP. This fact is in accordance with the research of Dumai and Dai (2017) in the context of integrated thinking as a control through by <IR> within organizational culture which refers to different research subjects.

Based on the measurement of the integrated thinking relationship aspect in integrated reporting for the implementation of ISRIP (Table 7), it shows a moderate relationship with the C Contingency coefficient 0.4057 [85]. This is in line with empirical facts, there are challenges in the implementation level of <IR> for organizations (Dumai et al., 2017). As in perspective, where there are determinants that are internal and external (Ara and Harani, 2020). External determinants, such as regulatory pressures, market forces. For internal organizational determinants include personal interests, governance, business models, stakeholder management, managerial attitudes. The application of a normative conceptual framework for developing the role of ISRIP can also be explained by accounting theory (stakeholders, institutional, legitimacy, stewardship, signaling theory) with the consequences of agency theory (principal and agent) (Rankin). et al., 2012). This is in line with Ratnatungan and Jones (2012) who proposed voluntary reporting theory with five basic reporting lines. Reporting moves from sustainability reporting (Bernardi and Stark, 2016) which is a historical evaluation towards reporting with resources towards integrated reporting (Adams, 2013; Adams et al., 2016). There is a need for entities to build information systems, invest in fulfilling accountable information systems (El-Gayar and Fritz, 2006; Myrtidis and Weerakkody, 2008; ElAbbassi and Khalid, 2014). Building information systems in the context of technical and social requirements as well as behavior for performance information systems outcomes (Melville, 2010).

The empirical facts of this study also are in harmony with previous studies related to the determinants of information system implementation and information system performance goals towards sustainable development (Sarkis et al., 2013; Dragomir, 2018; Giordano et al., 2018; Mata et al., 2018). Within alignment with implementation facts related to aspects of connecting strategies, good governance, in the implementation of information system communication in role of ISRIP for the level of government entities, investors and related stakeholders (Baldini et al., 2018). Building ISRIP by implementing integrated thinking is related to long-term goals. This is to show differences related to the effectiveness of policy implementation that is fulfilled in the short term (Pradhan et al., 2017). The implementation of ISRIP even requires a perspective in the completeness of the methods of working information technology, driven by the conditions behind how intensive investment communication is carried out (Orcutt, 2020). Meet the perspectives of investors at various levels of business scope for the investment made (Contrino et al., 2020).

For regional government entities that manage ISRIP, it requires development efforts for it supports the successful implementation of integrated reporting (Black Sun, 2014) and how this takes place becomes a global norm, but is contingent (Betts, 2003), which can be applied voluntarily or mandatory (Lodhia, 2012), because the system benefits that drive organizational performance (Black Sun, 2017). The ISRIP development perspective be needed within corresponding to the attention being given by regional government entities. This perspective is supported by the perspective of the ISRIP management bureaucracy's involvement. Several statements that can be restated from the focus group discussion (FGD) and semi-structured interviews are presented below.

- Connecting strategy for what information should be connected within role of ISRIP. Strategically, this results provide meaning for the role in implementation of ISRIP from regional government entities. As according to being stated, that there was important which emphasizes the meaning for integration of development policies in regional governments (B1, 2019). Referring to the subject and object of this research, (B7, 2020) has stated that there is a national issue of moving the country's capital city to East Kalimantan, making it a strategic opportunity for South Kalimantan to become the gateway to the country's capital. This can significantly increase for regional investment.
- Governance for what information should be connected with role for ISRIP. Administratively, these results provide meaning for a role perspective in implementing ISRIP in regional government entities. As stated (B1, 2019), we stated other statement (B2, 2019) with point of view, that for importance of integration in the context of investment in regional owned company entities.
- Past performance for what information should be connected with role for ISRIP. With referring to operational ability, an opinion is presented (B5, 2019) which assesses business performance related to strengths and weaknesses in administrative development areas, such as sub-districts. Past performance gave insight for regional government, in context the importance of managing regional commodities for business growth
- Future prospect for what information should be connected with role for ISRIP. It was argued, with the role of the leading investment sector in the regions still stagnant, through the role of regional government work units (B4, 2019). It is necessary in the future to be intensively and integrated with the using of contemporary technology. Regional government is important to intensively build cross-sectoral development performance. The future prospects provide insight for regional governments, in the context of the importance of managing technological aspects that support the attractiveness of regional investment units in communicating through by ISRIP.
- Connecting functional departments to how the relationship of each work function in information integration communication through the ISRIP role. This was stated in relation to research conducted on one of the research subjects, with a statement (B3, 2019). It was argued, that it is important to present quality primary data in the presentation of regional investment information. This aspect is also an insight for local governments, in the context of the importance of regional investment management that involves all work units for the performance of regional investment management. Because each work unit contributes to the integration of information and becomes part of the communication for regional investment management.
- Implementation of role for ISRIP. First, based on the point of view of this research, the results of measurement within difference testing and relationship testing show that, First, the integrated information for core information, additional information, and

credibility information for the profile of regional investment units be reported within a benchmark for 6 (six) capital of integrated reporting <IR> aspects [18]. Second, by fulfillment system with strengthening for communication strategically through by ISRIP of regional government. Furthermore, because of the implementation of ISRIP for regional government as mandatory involvement and to be a part of the national investment marketing system in the context of investment communication globally. Being effort to fulfill the role for ISRIP performance development, it was suggested (B6, 2020), about the need to strengthen technical aspects for ISRIP administrators. There is also a need for the formation of an ISRIP development coordination team, and its funding support since in year of 2020.

5. Conclusions

The results of this study provide empirical facts for the process model (Nilsen, 2015) from integrated thinking within implementation of integrated reporting for information system of regional investment potential (ISRIP). In accordance with the facts, the existence of aspects of integrated thinking (connecting strategy, governance, past performance, future prospects, connecting functional departments) exist in the content of regional investment information (P / Pr / O) provides a basis for development of implementation of ISRIP performance. The integration of information in the regional investment profile that is communicated strategically gives the role of accountability of regional government entities in sustainable development, due to the consequences of fulfilling agency theory and institutional theory (Rankin et al., 2012). Through fulfillment integrated thinking for elimination of "information asymmetry" and "adverse selection" events in regional investment information and communication.

The results of the study show that there are differences in the implementation of ISRIP with integrated reporting criteria with moderate closeness of the relationship. This shows acceptance of the contingency context of the implementation of information systems (Betts, 2003). There are internal and external contingency factors that determine the successful adoption and implementation of <IR>, (Betts, 2003; Ara and Hrani, 2020). As well as the role of micro theory as an explanatory, ISRIP phenomenon, with the role of the meso theory level as a controller and prediction of ISRIP implementation which connects the micro level theory at the macro theory level (Neuman, 2007) or grand theory for antecedents and consequences related to ISRIP implementation.

This study has limitations regarding the use of nominal scale measurement. Limitation of sample and unit of analysis. Therefore, next research is needed with strengthen the measurement scales, also with expanding the research sample. With the support of a more comprehensive study, a regional investment management policy should be able to receive input in a more substantive and massive manner for enhancement sustainable development.

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APPENDIX

Table 3.1
Sample Unit and Unit of Analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
1	East Java/Jombang	Tourist Area Development Panglungan (O)
2	East Java/ Tuban	Industrial Estate Development of Tuban (O)
3	Central Java/Rembang	Development of Main Port of Rembang (O)
4	Central Java/Semarang	Development of Tologo Wening Tourism (O)
5	South Sumatera/Palembang	Development of The Kamaro Island Tourist Area (O)
6	South Sumatera /Banyuasin	Development of the Animal Feed Industry (O)
7	Jambi/Bungo	Processing Industri development (Rubber & Palm Oil (O)

8	Jambi/Bungo	Natural Tourism Development (O)
9	Jambi/Sarolangun	Processing Industry development (Rubber & Palm Oil (O)
10	Jambi/Sarolangun	Natural Cave Tourism Development (P)
11	East Java/Tuban	The Development of Power Generation Energy (Pr)
12		Beach and Cave Tourism development (P)
13		Agriculture and Farming (O)
14		Food Processing Industry (O)
15		Trade and Service (Pr)
16	East Java/Jombang	Coffee Commodity Development (Pr)
17		Woor Furniture Processing (P)
18		Craft Industry (P)
19	Central Java/Semarang	Industrial Area (Bawen-Susukan-Kaliwungu) (Pr)
20	Central Java/Rembang	Sea Water Treatment Industry (P)
21		Salt Processing Industry (P)
22		Warehousing Services (P)
23	South Sumatera/Palembang	Tourism Development (40 Tourist Attractions) (P)
24		Development of Jakabaring Sport Center Area (P)
25		Development of Gandus Industrial Area (Pr)
26	South Sumatera/Banyuasin	Special Economic Zone Tanjung Api-Api (Pr)
27		Tourism Development (P)
28		Mining Industry (P)
29		Railroad Infrastructure Development (Pr)
30		Fisheries Development (Pr)
31		Reclamation of Tanjung Carat (Pr)
32		Construction of CPO Processing Plant (Pr)
33		Development of Residential Area Around Tanjung Api-Api (Pr)
34	Jambi/Bungo	Development of Palm Oil Processing Industry (Pr)
35		Development of Rubber Processing Industry (Pr)
36		Wood Processing Factory (Pr)
37		Natural Tourism and Homestay Development (P)
38		Industrial Estate Development (Pr)
39		Development of Education (Pr)
40		Development of Chocolate Plantation (Pr)
42		Development of Cattle Farming (Pr)
42		Superior Fisheries Cultivation (Pr)
43		Goal and Coal Mining (P)
44	Jambi/Sarolangun	Processing of Limestone Mining (P)
45		Precious Stone Handicraft Industry (Natural Stone) (P)
46		Development of Natural Cave Tourism and Resorts (P)
47		Development of Hydro/Steam Power Plants (Pr)
48		Dragon Fruit Plantation (Pr)

(Sources: Compiled, 2020, Capital Investment Coordinating Board, 2017; General plans for investment in the province concerned)

Table 3.2
Sample Unit and Unit of Analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
49	East Kalimantan/Kutai Kartanegara	Implementation for Rice Food Estate Program (Pr)
50	Samarinda	Industrial Area and Trade Services (O)
51	Balikpapan	Industrial Area of Kariangau (O)
52	Bontang	Industrial Area of Kaltim Industrial Estate (O)
53		Development of Seaweed and Kerapu Fish (O)
54		Tourist Attraction of Pulau Beras Besar (P)
55	East Kutai	Industrial Area and International Harbour-Maloy (O)
56	Berau	Industrial Area of Tourism Derawan Island (O)
57	Mahakam Hulu	Industrial Estate of Strategic Border (O)
58	North Panajam Paser	Industrial Area Api-Api (O)
59	Kutai Kartanegara	Industrial Mining (P)
60		Industrial Area of Pendingin (Pr)
61		Main Commodity of Lowland Rice (O)
62		Main Commodity of Fruits (Pr)
63		Main Commodity of Rubber (Pr)
64		Main Commodity of Palm Oil (O)
65		Main Commodity of Coconut (P)
66		Main commodity of Kalang Buffalo Breeding (O)
67		Infrastructure (Building) (Pr)
68		Trade, Hotel and Restaurant (P)
69	North Panajam Paser	Food Crop Agriculture (P)
70		Palm Oil & Rubber Plantations (P)
71		Mining and Excavation (O)
72		Agriculture Industry (P)

(Sources: Compiled, 2020, Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025)

Table 3.3
Sample Unit and Unit of analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
73	South Kalimantan/Tanah Laut	Industrial Area of Jorong (O)

74	Tanah Bumbu	Industrial Area of Batu Licin (O)
75	Kotabaru	Cantung-Sengayam Economic Growth Region (Pr)
76	Tabalong	Banua Anam Economic Growth Region (Pr)
77	Hulu Sungai Selatan	Food Buffer Area of Rawa Batang Banyu (Pr)
78	Barito Kuala, Banjarmasin, Banjarbaru, Banjar, Tanah Laut	Central Trade Area (Pr)
79	Hulu Sungai Tengah	Development of Meratus Geopark (P)
80	Kotabaru	Specific Economic Area (Export-Import) of Mekar Putih (P)
81	Kotabaru	Integrated Fisheries Center (Pr)
82	Kotabaru, Tanah Bumbu, Tanah Laut	Coal Mining and Downstreaming (P)
83	Tanah Bumbu, Kotabaru, Tanah Laut	Marble Stone Mining and Downstreaming (P)
84	Tanah Laut, Kotabaru, Tanah Bumbu	Iron Ore Mining and Downstreaming (P)
85	Tanah Laut, Kotabaru, Tanah Bumbu	Agro Business (O)
86	Tanah Laut, Kotabaru, Tanah Bumbu	Steel Industry (P)
87	Tanah Laut, Kotabaru,	Tourist Attraction (P)
88	Tanah Laut, Kotabaru, Tanah Bumbu	Limestone Mining and Downstreaming (P)
89	Kotabaru	Fisheries and Downstreaming for Marine Fish (O)
90	Kotabaru,	Fisheries and downstream for seaweed (Pr)
91		Plantations and Downstreaming for Palm Oil and Rubber (Pr)
92	Balangan	Regional Integrated and Support Area (O)
93	Banjar	Development of Sport City -Kiram (P)
94	Banjar	Silicon Valley of Borneo-Kiram (P)
95	Banjarmasin	wholesale markets and regional distribution centers (O)
96	Banjar	Diamond Industry and Trade (O)
97	Hulu Sungai Utara, Tabalong, Tapin-Barito Kuala	Infrastructure (Road, Bridge) - West Crossing (P)
98	Hulu Sungai Tengah	Infrastructure (dam) (Pr)
99	Banjarbaru-Banjar-Tanah Bumbu	Infrastructure (Freeway) (Pr)
100	Banjarmasin, Banjarbaru, Barito Kuala, Tanah Bumbu, Tanah Laut	Schools that are connected with the business world (Pr)

(Source: Compiled, 2020, Investment Agency & Integrated Services - Tanah Laut Regency, Center for Research and Community Service, Lambung Mangkurat University Banjarmasin, 2019; Regional Planning Agency for South Kalimantan Province, 2019; General plan for investment in South Kalimantan 2016-2025).

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Manuscript Information	
Manuscript ID:	12223028
Manuscript Title:	Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential
Evaluation Report	
General Comments	The paper is generally well written, having not bad contribution to field of discussing, free of inconvenience formulations and logically structured. In the other hand did not explain why discussing such years. Also the object and subject of research must be written in details in the introduction and in abstract. The title must be more short, for readers it will be more simple to understand.
Advantage & Disadvantage	Advantage: Paper is interesting on theme and relevant. Introduction information can be used in the future researches and in the education process. The study gives opportunity to understand new knowledge. Disadvantage: Introduction must include more reference information. Paper must be read more carefully, many mistakes. OF and EF information in table 5 must be described more careful. Conclusion can be more detailed for people, who are not professional in this sphere or research. References are adequate and appropriate, they are wide, but must be more on 5 recent years.
How to improve	English level must be much higher. Literature review must be much wider, especially for readers, who do not know much on theme of paper. Strange title to Figure 1, maybe it is Table 1? In table 1 must be 2 points for “The involvement of small and medium stakeholders and large entrepreneurs”, i.e. separately for large enterprises and SMEs. You must explain more detailed why in table 2 are such variables.
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Originality:	2
Contribution to the Field:	3
Technical Quality:	3
Clarity of Presentation :	2
Depth of Research:	2
Recommendation	
Kindly mark with a ■	
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Evaluation Report	
General Comments	The paper finds that there are differences in the application of ISRIP and the fulfillment of the integrated thinking aspect.
Advantage & Disadvantage	
How to improve	The conclusion can be better polished.
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April 30th , 2021

Dear, Mr. Daniel Anderson
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As we have received 2 (two) peer review report referring to the research article of us entitled “ Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential.

First of all, we sincerely appreciate the referee’s helpful commnets on our intended manuscript, ID-12223028. Here is our response to point raised by the referee:

Reply to Peer Review Report (Comment 1)

We do agree that for comment that the result show there are differences in the implementation of ISRIP with the fulfillment of integrated thinking aspects within this research.

Also, we will follow for suggestion to improve the conclusion of article, according with the aim of research and its implication for next research.

Reply to Peer Review Report (Comment 2)

As in general comments, we will improve the writing by providing complete references to emphasize claiming centrality of this research. Then provide reinforcement of the generalization of "das sollen das sein" and to add research previously for clarity of information in the introduction section. Due to the disadvantage of this article, we also try to complement the more contemporary literatures, confirming the measurement results (OF and EF) according with table 4 and table 5.

We try to improve the technical compatibility of writing, the suitability of tables and contents and the quality of language aspects.

Thank you for suggestion for citation: Tax Wedge Phenomenon and Its Possible Analytical Impacts on the Investments in OECD <https://doi.org/10.13189/ujaf.2020.080202>
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Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential

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Abstract

Purpose: The purpose of this research article is to examine whether aspects of integrated thinking are applied in the integration of information in the profile of regional investment units and supported by strategic communication through the role of information system of regional investment potential (ISRIP) which is managed by regional government. **Design / methodology / approach:** we conducted a literature study with a quantitative approach in 6 (six) Provinces and 28 (twenty eight) Regency / City Government agencies. With 100 units of regional investment analysis (potential, priority, and opportunity). The measurement uses a nominal scale with the chi-square test for goodness of fit to obtain a measurement of the frequency of observation (OF) compared to the expected frequency (EF). **Findings:** the measurement results show differences in implementation and a moderate level of relationship with the application of integrated thinking in the integrated reporting <IR> criteria for ISRIP implementation. **Originality:** This research article contributes to the growing debate about the benefits of integrated reporting <IR> as a voluntary and mandatory reporting initiative, which has been adopted by various global organizations **Practical Implications:** Being an early adopter of reporting practices (IR) on the implementation of an ISRIP, in line with global norms in achieving sustainable development goals (SDGs).

Keywords: integrated thinking, integrated reporting <IR>, regional investment, regional investment information system

Keywords integrated thinking, integrated reporting <IR>, regional investment, information system for regional investment

1. Introduction

Public Investment Management needs to be done with effective investment communication. To manage this public investment at various levels, besides fulfillment an effectiveness, the government also needs to enhance efficiency, by coordinating, strengthening capacities, and ensuring a healthy framework at all levels of government [1]. Furthermore, this Investment communication fulfillment in context of sustainable development will be related to environmental management systems [2]. This relates to development and audit to investment

accountability. As implementing of a reference related to the international standard ISO 14001 [3]. It is in line with the global development communication which has mandate referring to sustainable development in accordance with the integration of the SDGs, throughout the investment cycle [4]. Furthermore, where public investment management must be able to contribute not only within economic value [5], but more to sustainable development targets [6]. This is a moral aspect within an investment ethics [7], according with ethics in the use of information technology [8], due to the investment management is implemented with the support of information system functions and roles.

Recently, efforts to control the environment related to investment management have been continuously improved, through initiative to enhance the role of an integrated reporting system [9]. Triggered by a significant environmental impact related to the sustainability of investment management. As facts related to the impact of investment management, which until now shows the various challenges that cause damage to the natural environment [10, 11]. As well as the impact of social costs faced from an investment management [12, 13, 14]. The overall challenge of the impact of investment management is a challenge in the regional, national and global context according with the effective management of regional investment in investment promotion [15]. Therefore, investment management accountability is needed to strengthen the measurement and reporting approach for sustainability investment information [16]. This need is in line with the momentum of the evolution of the reporting system for global organizations with global norms by implementing an integrated reporting system framework <IR> [17, 18, 19], which is projected to be applied to global organizations since 2020 [20]. As a contemporary reporting system that can be applied voluntarily, or as well as compulsorily in its implementation [21].

Normatively, to fulfill the role of information system performance, it is necessary to orientate towards an integrated reporting system model [17, 18, 19]. This reporting system is a reporting model developed and refining the sustainable reporting system [22] or with term triple bottom line reporting [23] from global reporting initiatives [24, 25]. As it is known that the above reporting types of GRI only result in an evaluation of historical value, meanwhile <IR> can create value over time [26]. Therefore, generally, it can become relevant efforts with considered the integrated thinking fit with integrated reporting <IR> [27, 28] towards creating value over time [17,18, 19] referring to regional investment management.

The management of investment in Indonesia for sustainable development has been stated in the vision of the general investment plan until 2025. With the aim of “sustainable investment in the context of realizing an independent, advanced and prosperous Indonesia [29, 30]. As part of global community, Indonesia has mandatory to increase effective investment communication, based on investment decisions that pay attention to the fulfillment of investment principles and objectives [31]. The investment context related to the achievement of the financial aspect for investment [32], and also within where investment is related to environmental principles which are sustainable and environmentally friendly by encouraging sustainable economic development [33, 4]. Based on these regulations or guidelines, all activities related to investment management are regulated for sustainable investment requirements, the fulfillment of requirements for strategic environmental assessments that must be carried out by the government before granting investment licenses. Therefore, this is the main thing of all investment management regulatory approaches in Indonesia which must be in line with the global context in the management of public investment [34]. In socio-technical terms, this is related to the realization of the performance of the functions and roles referring to the information system of regional investment potential (ISRIP) [29, 30].

Being functionally the implementation of investment management requires the communication for all of information which needed by investors. For their investments decision, in where of the region which be easily accessible, and with availability for comprehensive information on the website [30]. In this context, the CICB has established a national information system through by the regional governments, which manages information on potential investment on the www.regionalinvestment.bkpm.go.id website with the name "information

system of regional investment potential (ISRIP). Functionally and according to its role, an information system really needs its development to fulfill the completeness of contents and basic communication methods. An information system such as for regional investment management is designed to meet the performance of the information system. As an implementation of investment cycle communication [6] that meets investment management accountability requirements for global development sustainability [4].

Until this time being, efforts have been made to meet the sustainability of development through investment activities [29, 30]. With the ISRIP website that has been used, it shows facts related to the fulfillment of information which is still very limited and most regions have not updated the data, so that information communication cannot be implemented as a reference for investors. Meanwhile, in deciding to invest in an area, investors need information about investments that is easily accessible and complete on one site. Until now, data updating has been carried out by each region, while on the other hand most regions have not updated it. For the sake of information system effectiveness, ISRIP has overhauled this system by fulfilling the role of completeness of information contained in the communication of regional investment units. This includes content elements in ISRIP, such as information on why Indonesia, investment opportunities, incentives, OSS licensing, infrastructure, and potential companies that are ready to partner with up to date data / collaboration links between Ministries / Agencies and business associations. The Investment Coordinating Board (CICB) keep on develops information on investment potential in the information system of Regional Investment Potential (ISRIP) [30]. For encouraging competition between regions in increasing investment potential with updating data on the website. The focus is on five provinces that are very promising and investment friendly which will be circulated and communicated every three months to be pushed to become regional investment champions. The focus of the first phase of investment is in the Java region, namely West Java, Banten, DKI Jakarta, Central Java and East Java [29, 35].

Based on the state of condition of investment management in Indonesia, it can be seen that there are challenges in investment management today. There are challenges in the management of domestic direct Investment (DDI) and foreign direct investment (FDI) in terms of equitable growth. Data on investment realization based on investment sector and location shows the distribution of investment, around 60% is still concentrated in Java and 40% outside Java. Among 34 provinces with 514 districts / cities, shows investment activities are concentrated in only around 30 districts / cities. This has resulted in a widening gap in economic development between regions. One of the obstacles faced by investors in exploring investment is the lack of information on investment potential and infrastructure support in the regions [35]. It also becomes a challenge in the global context for investment management within investment promotion effectively [15]. This matter also can be viewed as the impact of the challenges, which showed in the criteria for "ease of doing business" [36], where Indonesia's position is at level 73 out of 190 countries [37].

In Table 1 is presented a normative idea for development for fulfilling the role of ISRIP. Normatively, it refer to integrated thinking which is in accordance with integrated reporting [27, 28] towards sustainable investment management within creating value over time [9]. The perspective for adoption and implementation <IRF> be researched [8] is explained through accounting theories as antecedents and consequences, and the existence of internal and external determinant factors that determine the success of implementation. Therefore, adoption and intended factor of implementation <IR> for ISRIP can be used within the organization's business model [18] which is used in management for the investment management cycle [6].

Table 1

The integrated thinking's components fit with (IR) for ISRIP development

Integrated thinking (IT) ISRIP development fit with integrated reporting (IR)			
What information is connected and how information is connected	Content of information within regional investment units into ISRIP		Strategic regional investment management communication within ISRIP
Connecting strategy	Information for regional investment units	6 (six) (IR) capital	
Governance	Description of investment opportunities, market opportunities, estimated investment value, feasibility to offer	Financial (economic measures)	Coordinating a cross level of government and polices.
Past performance	Human resources: feasibility to offer	Human	Strengthen capacities at all levels of government.
Future prospect	Facilities and infrastructure: production and investment scale offered, available infrastructure, supporting industries, feasibility to offer	Manufacture	Proper framework conditions for public investment at all level of government.
Connecting functional department	SME's stakeholders and large entrepreneurs, feasibility to offer	Social	Sourcing and due diligence of screening investments for: environmental feasibility and to advance an SDGs
	Support of regional regulations, regulatory aspects, land ownership status, feasibility to offer	Intellectual property right	Investment selection and structuring (analysis and verification)
	General condition of the area, availability of land for development, environmental aspects, feasibility to offer	Natural (environment)	Measuring and reporting progress made toward the SDGs

(Sources: WICI, 2013; OECD, 2014; IIRC, 2011,2013, 2018, 2019; UNCTAD, 2018a; Pineiro et al., 2018; CICB, 2017, 2019)

As described in Table 1, this represents an idea from the OECD [1, 38], with 3 (three) perspectives on investment management. The development model also draws on a perspective [15] that emphasizes the importance of a strategic approach to SDGs. In line with this thought, fulfilling the role of information systems for investment requires fulfilling investment management in the context of the objectives in the SDGs, and putting factual data behind the word 'impact' for investment management performance [6]. Regional governments need to fulfill the assurance that investment management communication with the ISRIP design can be accounted for for sustainable development [4]. For important reasons as has been stated, normative ideas are put forward in the fulfillment of the 'thinking component integrated into the integrated reporting system <IR> [17, 18, 27, 28] for the development of ISRIP [29, 30]. Furthermore, as described in Table 1, it also shows the idea of using the pillars of best practice investment management adopted as an important cycle of investment management. For ISRIP developments represented by the achievement of the information system performance. First, within the integration of core information, additional information, and the credibility of information for regional investment unit profile information (Table 2) towards benchmarks of 6 (six) of capitals of integrated reporting <IR> [18]. Second, with strengthening the system with strategic communication through the regional government ISRIP.

Table 2 . Information Criteria Within a Regional Investment Unit

Information criteria for regional investment units	Information on analysis results	Information on the results of factual verification
The object offered (name of the investment unit)	Name of regional investment unit	Name of regional investment unit
Availability of raw materials	There is (name of place)	Support
Availability of competent human resources	There are graduate educational institutions available	Support
Availability of facilities and infrastructure	complete facilities and infrastructure available	Support
Short term and long term market	The existence of a captive market for the products produced	Support
Domestic and foreign markets	There is a captive market for domestic and abroad	Support
The involvement of small and medium stakeholders and large entrepreneurs	There are areas for SMEs and partnership facilities	Support
Compliance with statutory regulations	Already have principal permits and and other related regulations	Support
Environmental aspects	there has been an analysis of environmental impact studies	Support
Land availability and status and ownership	already controlled by the area manager with an area (... hectares), available land (..... hectares)	Support
Estimated investment (IDR)	--- (money term)	Support
Eligibility to be offered to investors	---	worth offering to investors

(Sources, CICB, 2017)

The presentation of data descriptions in Table 2 shows the context of information criteria for each regional investment unit communicated in the ISRIP, which refers to the content for regional investment information criteria for regional government communication [29]. As applied to the information criterion (Table 2), it comprises a description of the core information, additional information and credibility of the information which is presented as a representation of the relevant and reliable biological assets [7] information which offered as unit of the regional investment.. This information is presented in the ISRIP for regarding of investor evaluation needs, within cost and fair value analysis carried out on investment opportunities in the offered regional investment units. Integration of information and information communication through ISRIP must be able to prevent information asymmetry and adverse selection [7] for regional investment information within investment management.

Based on the explanation regarding investment management to fulfill the ISRIP performance role, the approach described (Table 1 and Table 2) can be used. Therefore, in general the approach to meeting the information criteria for the alignment of regional investment profiles is represented in the fulfillment 6 (six) of capitals of integrated reporting <IR> [18], that relevant to be implemented in ISRIP. Then strategically by laying a foundation based on investment management to fulfill the strategic communication aspects of investment [6, 15, 29, 30], to achieve strategic goals that are in line with the SDGs [4]. Both approaches are relevant means of realizing the role of the information system of regional investment potential (ISRIP) for regional governments.

The management of ISRIP requires aligning both strategic and technical aspects. First, with strategic manner, because ISRIP is part of investment promotion carried out through the function and role of the Indonesia Investment Promotion Center (IIPC). Due to in investment management, the functions and roles of ISRIP be integrated [29, 30, 39], to achieve the strategic objectives in line with SDGs [4]. Therefore, strategically, fulfilling the information criteria for communication of regional investment units is needed as a strategic way to fulfill objectives that

are in line with the functions and roles of the IIPC. In accordance with the functions and roles of IIPC, the function orientation and strategic role of ISRIP is to fulfill several tasks and functions according to IIPC, namely: (i) Increase investment from domicile countries and working areas to Indonesia; (ii) Facilitating investment from Indonesia to domicile countries and working areas. Second, from an information technology perspective, because ISRIP is an integrated part of the National Single Window for Investment (NSWI) [39]. Functionally, for operational capability, ISRIP is managed through its implementation at the Regional Government Investment Service. Become an integrated part of the joint sitemap in NSWI, namely with a homepage for the public (individuals / communities), and for investors (individuals or companies).

Some of previous studies [40, 41, 42, 43, 44, 45] were put forward as contextual discussing for this research. The study previously shows using theory such as agency theory and institutional theories in environmental control through an organizational reporting approach [7, 46]. Study for role of country and firm-level determinants in environmental, social, and governance disclosure [47]. Other studies (Dumai and Dai, 2017; Dumai et al., 2017) [48, 49] shows research themes <IR> for different study subjects. Then research related to best practice reporting (IR) on 164 company organizations around the globe [50]. As well as a study on disclosure of social investmet through the role of <IR> [51]. Facts, shows for an innovative investment information system which is needed to be built to fulfill critical role in shaping belief about the environment from role of information system, with the Belief-Action-Outcomes model [52]. Other of study were put forward in accordance with information systems and their role in management decision making. Such as, technology impact models, social impact models and integration models, information technology on organizations as contingent perspective for information systems [53]. Research that shows the fact of the fulfillment of information system innovations that can fulfill sustainability processes and practices with green information systems and technology [54, 55]. Business and strategy with the concept of investment in information systems with technology, organization, environment [56, 57]. Fact with the aspect of dependence on government policies and projects, and policy effectiveness is measured by short-term benefits [58]. Research related to information technology blockchain [59]. Technology-related studies such as the Internet of Things (IoT), Virtual Reality (VR) or Cloud Computing [60].

2.Objectives of Research

This research was conducted in relation to the problems faced and where several previous studies showed a connection with the aspects of the discussion in this study. Therefore, there is interest in the effort to verify the empirical facts referred to by raising the questions in this study. The main research questions addressed in this study are:

- Are the aspects of integrated thinking (linking strategy, governance, past performance, future performance prospects, departmental functional relationships) implemented in the fulfillment of information integration and strategic communication of regional investment units through implementation role of ISRIP?
- Does the fulfillment of integrated thinking cause differences in implementation achievements in information integration of 6 (six) capital cities <IR>, and strategic communication of regional investment units through implementation role of ISRIP?
- How strong is the relationship between implementation achievements in the integration of information for 6 (six) capitals of <IR>, and strategic communication of regional investment units through implementation role of ISRIP?

3. Research Methods

This research approach used a quantitative systematic review [61, 62], using a different test approach and a test of the relationship between aspects or variables with non-parametric statistics, with using the chi-square goodness of fit test or the chi-square test [63]. This section

describes the approach used in the study, identifies the sample and analysis units, variables and measurements, the data collection process approach, and the data analysis process approach.

3.1. Sample and unit of analysis

The research sample are regional government in Indonesia that manages a information system of regional investment potential (ISRIP). From regional government in Indonesia consist of 34 (thirty-four) Provinces, 415 (four hundred and fifteen) Districts/Regencies, and 93 (ninety-three) Cities, samples were selected by judgment sampling on the basis of the following considerations: (i) Regional governments that determine top-down regional investment management through the investment coordinating body, (ii) the regional governments that are rumored to be the location of the new capital city of Indonesia which manages the bottom up regional investment management, (iii) The regional government as the gateway to the nation's capital city which determines the bottom up regional investment management [64]. Then, for the determination of the unit of analysis from the regional investment units which is offered through ISRIP communication, undertaken based on 3 (three) types of investment, namely: (i) potential investment (P), (ii) priority investment (Pr), and (iii) opportunity investment (Opportunity (O) or as investment that ready to offer [29]. For sample and data of analysis units are described in the following Table 3:

Table 3
Sample and Unit of Analysis

Regional Government	Approach	Regional investment units	Amount
4 (four) Provinces- and 8 (eight) Regencies/Cities	Top Down	Potential (P) Priority (Pr) Opportunity (O)	16 units 21 units 11 units
1 (one) Province- and 7 (seven) Regencies/Cities	Bottom up	Potential (P) Priority (Pr) Opportunity (O)	7 units 5 units 12 units
1 (one) Province- and 13 (thirteen) Regencies/Cities	Bottom up	Potential (P) Priority (Pr) Opportunity (O)	11 units 10 units 7 units
			100 Units

(Sources, CICB, 2017 [29], Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025 [65^a, 65^b]; Investment Agency & Integrated Services - Tanah Laut Regency and Center for Research and Community Service, Lambung Mangkurat University, Banjarmasin, 2019 [66]; Regional Planning Agency for South Kalimantan Province, 2019; General plan for investment in South Kalimantan 2016-2025 [67^a, 67^b].

The units of analysis are regional investment units as investment profiles offered to investors through ISRIP communications. Detail information for the sample region and unit of analysis are presented in table 3.1., Table, 3.2., and table 3.3 (appendix). With results of sample selection and unit of analysis covered: (i) 48 (forty eight) regional investment units in the top down cluster, (ii) 24 (twenty four) regional investment units in the bottom up cluster and (iii) 28 (twenty eight) regional investment units in the bottom up cluster. This amount is considered sufficient [68] for the purposes of analysis and for conclusions.

3.2. Variables and Measurement

The research variables are built from a framework of an integrated thinking model into integrated reporting [27, 28], which is in accordance with the determinants of the framework [69]. Furthermore, an integrated thinking model is determined as an independent variable that determines the implementation of integrated reporting as the dependent variable [70]. Research variables and measurement approaches are built according to implementation theory that fulfills a breadth of coverage [71] as a micro and meso level theory in explaining, and predicting

variable relationships. The operational definitions of variables, indicator items and their measurement are presented in Table 4.1 and Table 4.2.

Table 4.1. Independent Variables and Measurement

Variables and Indicators	Measurement
Connecting strategy for what information is connected. Be defined as as connecting strategy for potential investment, priority investment, and opportunity investment. With items of indicators, namely: (i) referring to the strategic objectives of the regional government, (ii) Set for the sustainability of the natural environment, (iii) economic feasibility, (iv) in terms of financial feasibility, (v) as organization's business model with reporting requirements, and (vi) with social situation analysis for stakeholder needs [17, 18, 27, 29, 48]	Nominal
Governance for what information is connected. Be defined as governance of potential investment, priority investment and opportunity investment . With items of indicators, namely: (i) Compliance Process for investment working groups, (ii) Support from regional investment of leading sector of work units, (iii) Implementation of communication process between work units in investment management (iv) Strategic direction of regional investment policies (v) The strategic decision process in investment offerings, (vi) Consideration of values and relationships with stakeholders [17, 18, 27, 29, 48, 72, 73, 74]	Nominal
Past performance for what information is connected. Be defined as past performance of potential investment, priority invstment and opportunity investement .With items of indicators, namely: (i) The supply of investment resources has been determined by KPIs, (ii) Information resource offerings have been established with KRIs, (iii) Consideration of economic (financial) performance with other aspects of capital, (iv) regional investment value takes into account significant external factors, (v) Providing facilities and / or incentives for regional investment, and (vi) Availability for performance information "major external economic", environmental, and social impacts [17,18, 27, 29, 48, 72, 75, 76, 77]	Nominal
Future prospect for what information is connected . Be defined as future prospect of potential investment, priority investment and opportunity investment. With items of indicators, namely: (i) : Balance of short-term and long-term interests, (ii) Management's expectation of future prospects, (iii) Sustainable organizational business model, (iv) Investment area with estimation and sensitivity analysis, (v) Assessment of prospects and uncertainties faced, (vi) Information about target, forecast, performance projection [17, 18, 27, 29, 48, 72, 75,76, 78, 79]	Nominal
Connecting functional departements (CFD) for how information is connected. Be defined as connecting functional departements used ISRIP With items of indicator, namely: (i) Offer regional investment potential and opportunities with application systems (desktop and Web-based), (ii) Communication on human resource management in the regions, (iii) GIS for managing the investment environment, (iv) Individual ethical intelligence between work Governmental Units, (v) Working unit groups with information for sustainability feasibility, (vi) Implementation of e-Government with information system of regional investment potential [17, 18, 27, 29, 48, 72, 80, 81, 82, 83]	Nominal

(Sources, 2020)

Table 4.2. Dependent Variables and measurement

Variables and Indicators	Measurement
Implementation of 6 (six) capitals of <IR> capitals for ISRIP. Be defined as in connectivity of integrated information to ensuring that all <IR> capital might be reported within business process for ISRIP as an innovative integrated information for sustainability development. With items of indicator : (i) Natural capital: environmental aspects, natural resources, availability of raw materials, analysis of environmental impact, pre-feasibility study, (ii) Human capital: Availability of competent human resources, (iii) Manufacture Capital: Availability of facilities and infrastructure, (iv) Financial Capital, with short and long term markets, domestic markets, foreign markets, investment forecasts, (v) Socio and relationship capital: Involvement of stakeholders and investors, and (vi) Intellectual Property Right: land ownership, geography indicated, Compliance with statutory regulations [9, 17, 18, 24, 25, 27, 29, 83, 84]	Nominal
Implementation for strategic communication of ISRIP. Be defined as connecting functional between governmental work units with others entites and with investors, as innovative strategic communication which connecting departments functionally through by ISRIP. With items of indicators, namely: (i) Overview of the organization and business model of the investment unit cycle, (ii) The operating context, including the risks and opportunities of the investment unit, (iii) To reach strategic objectives and strategies to achieve the objectives of the investment unit, (iv) Governance related to investment unit management, (v) Performance achievements related to the investment unit, and (vi) Future prospects related to investment units [6, 15, 17, 18, 27, 29, 69, 73, 83, 84]	Nominal

(Sources, 2020)

The process of measuring all variables on each indicator item uses a nominal measurement scale. Measurements are made of the integrated thinking indicator items that are measured (present or not) applied to the integration of information in the unit of analysis for regional investment units: potential investment (P), priority investment (Pr), and opportunity investment (O), in the documentation of reports of CICB (2017) related to investment in region, investment plan reports from the Provincial / Regency / City Governments, which are available in hard copy or online. In accordance with the rhetorical component of integrated thinking with <IR>, where the results of the assessment that meet the criteria for indicator items are given a value of 1, and 0 for criteria where there is no application. Each assessment result is entered into a nominal scale achievement, based on 6 (six) integrated thinking descriptor items on 5 (five) independent research variables and 1 (one) dependent variable in 2 (two) research dimensions of <IR> characteristics.

3.3. Data collection

Research data collection was carried out through the following stages:

-Stage 1: Determination of Provincial / Regency / City Government entities as sample of research.

-Stage 2; Determination of regional investment unit as unit of analysis within the selected Provincial / Regency / City Government entities as samples, into the type: potential investment (P), priority investment (Pr), and investment ready to offer of opportunity investment (O).

-Stage 3 : Collecting data according to document sources as document review approach through by: (i) Documents of Capital Investment Coordinating Board, 2017; General plans for investment in the province / district concerned (ii) Document on Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025), and (iii) Document of Investment Agency & Integrated Services - Tanah Laut Regency, Center for Research and Community Service, Lambung Mangkurat University Banjarmasin, 2019; Regional Planning Agency for South Kalimantan Province, 2019).

-Stage 4: Measuring the presence or absence of each indicator item of integrated thinking variables / aspects (Table 4.1. and Table 4.2.), with the criteria for regional investment information within Table 2 as information criteria which be determined by (CICB, 2017). Measurement stage be undertaken of regional investment units for: (i) criteria for potential investment (P) to be implemented (according to development plans, sectoral strategic plans, investment locations and spatial plans, linkages between sectors, can cover costs, preliminary studies), (ii) criteria for priority investment (Pr) to be undertaken (with regional government proposals or investor requests, pre-feasibility studies, identified risk management, proposed public-private partnership programs, government support for identification of poverty alleviation investments), (iii) ready-to-offer investment criteria or opportunity investment (O) (with complete investment supporting documents, support for government approval, administrative readiness related to the realization of investment programs / activities / projects)

3.4. Data analysis

The results of direct measurement of the indicator items of the alignment of the information criteria in the regional investment unit profile (P / Pr / O) are then used in the data analysis phase. In accordance with the research objectives, the results of the analysis are used to assess the propositions in the first statement, whether there is a difference, and for the second statement whether there is a relationship between the variables. For data analysis and testing of hypothesis statements (Ho1 and Ho2) used non-parametric statistical test tools, namely the chi-Square goodness of fit test or the chi-square test for

independence (Conover, W.J, 1980). With use the chi-square test tool and the use of the contingency within measure the frequency of observation (OF) and the expected frequency (EF), to value of test difference of hypotheses (Ho1). Then to test the level of relationship between variables (Ho2) is used the correlation test with referring to the C-contingency value. For the analysis stage and fulfillment of the conclusions of this study, we also use a focus group discussion (FGD) approach as a semi-structured discussion forum. Several key persons (Table 5) were involved in making the statement as part of thoughts and ideas related to efforts to develop investment management, according to regional conditions in the context of investment promotion nationally and globally.

Table 5
Summary of Key Persons of FGD

Pseudonym	Position	2019	2020
B1	Regent	X	
B2	Assistant II of the Regional Secretariat	X	
B3	Assistant III Regional Secretariat	X	
B4	Head office of the Investment Service	X	
B5	Sub-Regent	X	
B6	Regional Development Planning Agency-District		X
B7	Regional Development Planning Agency -Provincial		X

(Sources, 2020)

4. Result And Discussion

Hypothesis testing for the difference test (H01) and for the relationship test (H02) was carried out using the chi-square test for goodness of fit. Testing for the Ho1 hypothesis is done by comparing the X2 table with the X2 observation as the basis for acceptance or rejection of the research hypothesis Ho1. Furthermore, to assess the closeness of the relationship within Ho2 between variables X and Y, be valued, after obtained the results of the chi square difference test, with a measure of the contingency coefficient (C Contingency). The data in Table 6 are the basis for testing the research hypothesis .

Hypothesis Testing (H01), is a test for different tests in the application of aspects from the dimensions of integrated thinking (IT) with the implementation of information system of regional investment potential system (ISRIP). Testing by measuring the frequency of observation (OF) with the expected frequency (EF) whichever is the greater the frequency. The measurement results show that the observation frequency reaches a value of 137.97. Then for the expected frequency (EF) which is determined by referring to the degrees of freedom of rows and columns (6-1) (7-1) with a significance level of 0.05, the frequency value in the chi squared table is 43.77. Based on the comparison of X2 observation 137.97 which is greater than X2 table 43.77, this means that Ho1 can be rejected, at the chi-square significance value < 0.05. The results of testing this hypothesis indicate that there are differences in the implementation of information system of Regional Investment Potential (ISRIP) and the fulfillment of the integrated thinking aspect. These results also mean that fulfillment of (connecting strategy, governance, past performance, future prospects and connecting functional departments) provides performance outcomes in the regional government's ISRIP role.

Table 6. Observation frequency (OF) and expectation frequency (EF)

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> C	Stra.Com (IR)	Amount
The rhetorical components of integrated thinking fit with (IR)								
Very Rhetorical Component IT & IR								
Score 6 (OF)	28	32	32	63	75	73	89	392
Fe	56	56	56	56	56	56	56	
Rhetorical Component IT & IR								
Score 5 (OF)	42	25	43	24	8	15	1	158
Fe	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	22,5714	
Rhetorical Enough								
Score 4 (OF)	19	32	23	11	3	1	10	99
Fe	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	14,1428	
Less Rhetorical								
Score 3 (OF)	11	9	2	1	8	11	0	42
Fe	6	6	6	6	6	6	6	
Very Less Rhetorical								
Score 2 (OF)	0	2	0	1	4	0	0	7
Fe	1	1	1	1	1	1	1	
Bad Rhetorical								
Score 1 (OF)	0	0	0	0	2	2	0	4
Fe	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	0,5714	
Amount	100	100	100	100	100	100	100	700

(Sources, processed from primary data, 2020)

Table 7. Contingency & chi square observation

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> Cap	Stra.Com (IR)	Amount
	-28	-24	-24	7	19	17	33	
	784	576	576	49	361	289	1089	
Xo Observation	14	10,2857	10,2857	0,875	6,4464	5,1607	19,4464	35,4464
	19,4285	2,42857	20,4285	1,42857	-14,5714	-7,5714	-21,5714	
	377,4693	5,8979	417,3265	2,0408	212,3265	57,3265	465,3265	
Xo Observation	16,7233	0,2613	18,4891	0,0904	9,4068	2,5397	20,6157	35,5641
	4,8571	17,8571	8,8571	-3,1428	-11,1428	2,8571	-4,1428	
	23,5918	318,8775	78,4489	9,8775	124,1632	8,1632	17,1632	
Xo Observation	1,6681	22,5468	5,5468	0,6984	8,7792	0,5772	1,2135	30,4603
	5	3	-4	-5	2	5	-6	
	25	9	16	25	4	25	36	
Xo Observation	4,1666	1,5	2,6666	4,1666	0,6666	4,1666	6	12,5
	-1	1	-1	0	3	-1	-1	
	1	1	1	0	9	1	1	
Xo Observation	1	1	1	0	9	1	1	14
	-0,5714	-0,5714	-0,5714	-0,5714	1,4285	1,4285	-0,5714	
	0,3265	0,3265	0,3265	0,3265	2,0408	2,0408	0,3265	
Xo Observation	0,5714	0,5714	0,5714	0,5714	3,5714	3,5714	0,5714	10
Amount				X2 Observation				137,9709
				X2 table				43,77
				N				700
				C Contingency				0,4057

(Sources, processed from primary data, 2020)

Hypothesis Testing (H0₂), is a hypothesis testing in assessing the level of relationship between the variables from the different test results (H0₁). By calculating the value of the Pearson contingent coefficient ($C = \sqrt{XO_2} / (N + XO_2)$). Based on the data in Table 7, the value of $C = \sqrt{137.97} / (700 + 137.97)$ is obtained = 0,4057. Referring to Guilford's empirical rule [85], it

shows that the C-contingency value is a bounded association coefficient between $0 < 1$, where: 0 = no association / relationship, and 1 = perfect association / relationship. With contingency C of 0.4057 can be expressed as “moderate correlation.” These results indicate that there is a significant relationship with moderate correlation in the performance of the information system of regional investment potential (ISRIP) through integrated thinking for completeness of information on six capital (IR) , and with strategic communication in enhancing the role of ISRIP.

Referring to the facts (Table 6), it shows that each indicator item has relative performance aspects in the fulfillment of integrated thinking within component very rhetorical in <IR> (6), rhetorical component in <IR> (5), and quite rhetorical in <IR> (4). The implementation of the connecting strategy, governance, and past performance aspects achieved the highest implementation which was relatively the same, namely 28% and 32%. Meanwhile, the implementation of the future prospect aspect achieved a high implementation of 63% and the highest implementation achievement was 75% for the aspect connecting functional department. The application of this aspect of integrated thinking has an impact on the achievement of the implementation of ISRIP performance which is relatively high in the integration of information content in regional investment units by 73%, and for the role of strategic communication by 89% through the implementation of ISRIP. This fact is in accordance with the research of Dumai and Dai (2017) in the context of integrated thinking as a control through by <IR> within organizational culture which refers to different research subjects.

Based on the measurement of the integrated thinking relationship aspect in integrated reporting for the implementation of ISRIP (Table 7), it shows a moderate relationship with the C Contingency coefficient 0.4057 [85]. This is in line with empirical facts, there are challenges in the implementation level of <IR> for organizations (Dumai et al., 2017). As in perspective, where there are determinants that are internal and external (Ara and Harani, 2020). External determinants, such as regulatory pressures, market forces. For internal organizational determinants include personal interests, governance, business models, stakeholder management, managerial attitudes. The application of a normative conceptual framework for developing the role of ISRIP can also be explained by accounting theory (stakeholders, institutional, legitimacy, stewardship, signaling theory) with the consequences of agency theory (principal and agent) (Rankin). et al., 2012). This is in line with Ratnatungan and Jones (2012) who proposed voluntary reporting theory with five basic reporting lines. Reporting moves from sustainability reporting (Bernardi and Stark, 2016) which is a historical evaluation towards reporting with resources towards integrated reporting (Adams, 2013; Adams et al., 2016). There is a need for entities to build information systems, invest in fulfilling accountable information systems (El-Gayar and Fritz, 2006; Myrtidis and Weerakkody, 2008; ElAbbassi and Khalid, 2014). Building information systems in the context of technical and social requirements as well as behavior for performance information systems outcomes (Melville, 2010).

The empirical facts of this study also are in harmony with previous studies related to the determinants of information system implementation and information system performance goals towards sustainable development (Sarkis et al., 2013; Dragomir, 2018; Giordano et al., 2018; Mata et al., 2018). Within alignment with implementation facts related to aspects of connecting strategies, good governance, in the implementation of information system communication in role of ISRIP for the level of government entities, investors and related stakeholders (Baldini et al., 2018). Building ISRIP by implementing integrated thinking is related to long-term goals. This is to show differences related to the effectiveness of policy implementation that is fulfilled in the short term (Pradhan et al., 2017). The implementation of ISRIP even requires a perspective in the completeness of the methods of working information technology, driven by the conditions behind how intensive investment communication is carried out (Orcutt, 2020). Meet the perspectives of investors at various levels of business scope for the investment made (Contrino et al., 2020).

For regional government entities that manage ISRIP, it requires development efforts for it supports the successful implementation of integrated reporting (Black Sun, 2014) and how this takes place becomes a global norm, but is contingent (Betts, 2003), which can be applied voluntarily or mandatory (Lodhia, 2012), because the system benefits that drive organizational performance (Black Sun, 2017). The ISRIP development perspective be needed within corresponding to the attention being given by regional government entities. This perspective is supported by the perspective of the ISRIP management bureaucracy's involvement. Several statements that can be restated from the focus group discussion (FGD) and semi-structured interviews are presented below.

- Connecting strategy for what information should be connected within role of ISRIP. Strategically, this results provide meaning for the role in implementation of ISRIP from regional government entities. As according to being stated, that there was important which emphasizes the meaning for integration of development policies in regional governments (B1, 2019). Referring to the subject and object of this research, (B7, 2020) has stated that there is a national issue of moving the country's capital city to East Kalimantan, making it a strategic opportunity for South Kalimantan to become the gateway to the country's capital. This can significantly increase for regional investment.
- Governance for what information should be connected with role for ISRIP. Administratively, these results provide meaning for a role perspective in implementing ISRIP in regional government entities. As stated (B1, 2019), we stated other statement (B2, 2019) with point of view, that for importance of integration in the context of investment in regional owned company entities.
- Past performance for what information should be connected with role for ISRIP. With referring to operational ability, an opinion is presented (B5, 2019) which assesses business performance related to strengths and weaknesses in administrative development areas, such as sub-districts. Past performance gave insight for regional government, in context the importance of managing regional commodities for business growth
- Future prospect for what information should be connected with role for ISRIP. It was argued, with the role of the leading investment sector in the regions still stagnant, through the role of regional government work units (B4, 2019). It is necessary in the future to be intensively and integrated with the using of contemporary technology. Regional government is important to intensively build cross-sectoral development performance. The future prospects provide insight for regional governments, in the context of the importance of managing technological aspects that support the attractiveness of regional investment units in communicating through by ISRIP.
- Connecting functional departments to how the relationship of each work function in information integration communication through the ISRIP role. This was stated in relation to research conducted on one of the research subjects, with a statement (B3, 2019). It was argued, that it is important to present quality primary data in the presentation of regional investment information. This aspect is also an insight for local governments, in the context of the importance of regional investment management that involves all work units for the performance of regional investment management. Because each work unit contributes to the integration of information and becomes part of the communication for regional investment management.
- Implementation of role for ISRIP. First, based on the point of view of this research, the results of measurement within difference testing and relationship testing show that, First, the integrated information for core information, additional information, and

credibility information for the profile of regional investment units be reported within a benchmark for 6 (six) capital of integrated reporting <IR> aspects [18]. Second, by fulfillment system with strengthening for communication strategically through by ISRIP of regional government. Furthermore, because of the implementation of ISRIP for regional government as mandatory involvement and to be a part of the national investment marketing system in the context of investment communication globally. Being effort to fulfill the role for ISRIP performance development, it was suggested (B6, 2020), about the need to strengthen technical aspects for ISRIP administrators. There is also a need for the formation of an ISRIP development coordination team, and its funding support since in year of 2020.

5. Conclusions

The results of this study provide empirical facts for the process model (Nilsen, 2015) from integrated thinking within implementation of integrated reporting for information system of regional investment potential (ISRIP). In accordance with the facts, the existence of aspects of integrated thinking (connecting strategy, governance, past performance, future prospects, connecting functional departments) exist in the content of regional investment information (P / Pr / O) provides a basis for development of implementation of ISRIP performance. The integration of information in the regional investment profile that is communicated strategically gives the role of accountability of regional government entities in sustainable development, due to the consequences of fulfilling agency theory and institutional theory (Rankin et al., 2012). Through fulfillment integrated thinking for elimination of "information asymmetry" and "adverse selection" events in regional investment information and communication.

The results of the study show that there are differences in the implementation of ISRIP with integrated reporting criteria with moderate closeness of the relationship. This shows acceptance of the contingency context of the implementation of information systems (Betts, 2003). There are internal and external contingency factors that determine the successful adoption and implementation of <IR>, (Betts, 2003; Ara and Hrani, 2020). As well as the role of micro theory as an explanatory, ISRIP phenomenon, with the role of the meso theory level as a controller and prediction of ISRIP implementation which connects the micro level theory at the macro theory level (Neuman, 2007) or grand theory for antecedents and consequences related to ISRIP implementation.

This study has limitations regarding the use of nominal scale measurement. Limitation of sample and unit of analysis. Therefore, next research is needed with strengthen the measurement scales, also with expanding the research sample. With the support of a more comprehensive study, a regional investment management policy should be able to receive input in a more substantive and massive manner for enhancement sustainable development.

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APPENDIX

Table 3.1
Sample Unit and Unit of Analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
1	East Java/Jombang	Tourist Area Development Panglungan (O)
2	East Java/ Tuban	Industrial Estate Development of Tuban (O)
3	Central Java/Rembang	Development of Main Port of Rembang (O)
4	Central Java/Semarang	Development of Tologo Wening Tourism (O)
5	South Sumatera/Palembang	Development of The Kamaro Island Tourist Area (O)
6	South Sumatera /Banyuasin	Development of the Animal Feed Industry (O)
7	Jambi/Bungo	Processing Industri development (Rubber & Palm Oil (O)

8	Jambi/Bungo	Natural Tourism Development (O)
9	Jambi/Sarolangun	Processing Industry development (Rubber & Palm Oil (O)
10	Jambi/Sarolangun	Natural Cave Tourism Development (P)
11	East Java/Tuban	The Development of Power Generation Energy (Pr)
12		Beach and Cave Tourism development (P)
13		Agriculture and Farming (O)
14		Food Processing Industry (O)
15		Trade and Service (Pr)
16	East Java/Jombang	Coffee Commodity Development (Pr)
17		Woor Furniture Processing (P)
18		Craft Industry (P)
19	Central Java/Semarang	Industrial Area (Bawen-Susukan-Kaliwungu) (Pr)
20	Central Java/Rembang	Sea Water Treatment Industry (P)
21		Salt Processing Industry (P)
22		Warehousing Services (P)
23	South Sumatera/Palembang	Tourism Development (40 Tourist Attractions) (P)
24		Development of Jakabaring Sport Center Area (P)
25		Development of Gandus Industrial Area (Pr)
26	South Sumatera/Banyuasin	Special Economic Zone Tanjung Api-Api (Pr)
27		Tourism Development (P)
28		Mining Industry (P)
29		Railroad Infrastructure Development (Pr)
30		Fisheries Development (Pr)
31		Reclamation of Tanjung Carat (Pr)
32		Construction of CPO Processing Plant (Pr)
33		Development of Residential Area Around Tanjung Api-Api (Pr)
34	Jambi/Bungo	Development of Palm Oil Processing Industry (Pr)
35		Development of Rubber Processing Industry (Pr)
36		Wood Processing Factory (Pr)
37		Natural Tourism and Homestay Development (P)
38		Industrial Estate Development (Pr)
39		Development of Education (Pr)
40		Development of Chocolate Plantation (Pr)
42		Development of Cattle Farming (Pr)
42		Superior Fisheries Cultivation (Pr)
43		Goal and Coal Mining (P)
44	Jambi/Sarolangun	Processing of Limestone Mining (P)
45		Precious Stone Handicraft Industry (Natural Stone) (P)
46		Development of Natural Cave Tourism and Resorts (P)
47		Development of Hydro/Steam Power Plants (Pr)
48		Dragon Fruit Plantation (Pr)

(Sources: Compiled, 2020, Capital Investment Coordinating Board, 2017; General plans for investment in the province concerned)

Table 3.2
Sample Unit and Unit of Analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
49	East Kalimantan/Kutai Kartanegara	Implementation for Rice Food Estate Program (Pr)
50	Samarinda	Industrial Area and Trade Services (O)
51	Balikpapan	Industrial Area of Kariangau (O)
52	Bontang	Industrial Area of Kaltim Industrial Estate (O)
53		Development of Seaweed and Kerapu Fish (O)
54		Tourist Attraction of Pulau Beras Besar (P)
55	East Kutai	Industrial Area and International Harbour-Maloy (O)
56	Berau	Industrial Area of Tourism Derawan Island (O)
57	Mahakam Hulu	Industrial Estate of Strategic Border (O)
58	North Panajam Paser	Industrial Area Api-Api (O)
59	Kutai Kartanegara	Industrial Mining (P)
60		Industrial Area of Pendingin (Pr)
61		Main Commodity of Lowland Rice (O)
62		Main Commodity of Fruits (Pr)
63		Main Commodity of Rubber (Pr)
64		Main Commodity of Palm Oil (O)
65		Main Commodity of Coconut (P)
66		Main commodity of Kalang Buffalo Breeding (O)
67		Infrastructure (Building) (Pr)
68		Trade, Hotel and Restaurant (P)
69	North Panajam Paser	Food Crop Agriculture (P)
70		Palm Oil & Rubber Plantations (P)
71		Mining and Excavation (O)
72		Agriculture Industry (P)

(Sources: Compiled, 2020, Regional investment and licensing agency of East Kalimantan, 2012; General plan for investment in East Kalimantan 2014-2025)

Table 3.3
Sample Unit and Unit of analysis

N0	Regional Gov't (P/M/C)	Unit of Regional Investments
73	South Kalimantan/Tanah Laut	Industrial Area of Jorong (O)

74	Tanah Bumbu	Industrial Area of Batu Licin (O)
75	Kotabaru	Cantung-Sengayam Economic Growth Region (Pr)
76	Tabalong	Banua Anam Economic Growth Region (Pr)
77	Hulu Sungai Selatan	Food Buffer Area of Rawa Batang Banyu (Pr)
78	Barito Kuala, Banjarmasin, Banjarbaru, Banjar, Tanah Laut	Central Trade Area (Pr)
79	Hulu Sungai Tengah	Development of Meratus Geopark (P)
80	Kotabaru	Specific Economic Area (Export-Import) of Mekar Putih (P)
81	Kotabaru	Integrated Fisheries Center (Pr)
82	Kotabaru, Tanah Bumbu, Tanah Laut	Coal Mining and Downstreaming (P)
83	Tanah Bumbu, Kotabaru, Tanah Laut	Marble Stone Mining and Downstreaming (P)
84	Tanah Laut, Kotabaru, Tanah Bumbu	Iron Ore Mining and Downstreaming (P)
85	Tanah Laut, Kotabaru, Tanah Bumbu	Agro Business (O)
86	Tanah Laut, Kotabaru, Tanah Bumbu	Steel Industry (P)
87	Tanah Laut, Kotabaru,	Tourist Attraction (P)
88	Tanah Laut, Kotabaru, Tanah Bumbu	Limestone Mining and Downstreaming (P)
89	Kotabaru	Fisheries and Downstreaming for Marine Fish (O)
90	Kotabaru,	Fisheries and downstream for seaweed (Pr)
91		Plantations and Downstreaming for Palm Oil and Rubber (Pr)
92	Balangan	Regional Integrated and Support Area (O)
93	Banjar	Development of Sport City -Kiram (P)
94	Banjar	Silicon Valley of Borneo-Kiram (P)
95	Banjarmasin	wholesale markets and regional distribution centers (O)
96	Banjar	Diamond Industry and Trade (O)
97	Hulu Sungai Utara, Tabalong, Tapin-Barito Kuala	Infrastructure (Road, Bridge) - West Crossing (P)
98	Hulu Sungai Tengah	Infrastructure (dam) (Pr)
99	Banjarbaru-Banjar-Tanah Bumbu	Infrastructure (Freeway) (Pr)
100	Banjarmasin, Banjarbaru, Barito Kuala, Tanah Bumbu, Tanah Laut	Schools that are connected with the business world (Pr)

(Source: Compiled, 2020, Investment Agency & Integrated Services - Tanah Laut Regency, Center for Research and Community Service, Lambung Mangkurat University Banjarmasin, 2019; Regional Planning Agency for South Kalimantan Province, 2019; General plan for investment in South Kalimantan 2016-2025).

April 30th, 2021

Dear, Mr. Daniel Anderson
Editorial Asistant HRPUB

As we have submitted an research article entitled “ Integrated Thinking Within Integrated Reporting: An Implementation of Information System of Regional Investment Potential. We confirm that the intended research article is original and has not been published elsewhere, nor it is currently under consideration for publication elsewhere.

In this research article, we show that integrated thinking has important impact to make integrated information and strategic communication effectively for sustainable regional investment management more valuable. Also we have no conflict of interest to disclose this research information.

Please address all correspondence of this manuscript to us at email : syaiful.hifni@ulm.ac.id
Thank you for your consideration of this manuscript.

Sincerely,
Corresponding Author:

A handwritten signature in black ink, appearing to be 'Syaiful Hifni', is written on a white background. The signature is cursive and includes a horizontal line extending to the right.

Syaiful Hifni

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Akhmad Sayudi., Atma Hayat., A. Kadir., Rano Wijaya

Integrated Reporting, Sustainable Development Goals and the Role of Regional Information System

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Abstract Purpose: The purpose of this research article is to assess what information should be connected and how its information can be connected based on integrated thinking fit within integrated reporting <IR> into information system of regional investment potential (ISRIP) of regional government. To develop insight into how it can be implemented over changes of investment climate due to the top down pressures to fulfill sustainable development goals (SDGs). **Design/methodology/approach:** we conducted research for regional governments (province/district/city) in Indonesia with investment characteristics of the potential, priorities and opportunities of regional investment units. By taking samples for 100 regional investment units. Measurement used nominal scale with chi-square test for goodness of fit to get the measurement of observation frequency (OF) and compared with the expected frequency (EF). **Findings:** the measurement results showed observed frequency (OF) with a value of 137.97. Afterwards, for expected frequency (EF), with degrees of freedom (6-1) (7-1) and a significance level of 0.05, within the chi-square showed the value of 43.77. Due to $OF > EF$, this result indicated for being of corresponding between integrated thinking of regional investment within implementation of information system of regional investment potential (ISRIP). **The level of integrated thinking relationships with integrated reporting <IR> in the role of "ISRIP" has a Pearson contingency coefficient of 0.4057, as a moderate relationship.** **Originality:** This research article contributes to the growing debate about the benefits of integrated

reporting as a voluntary reporting initiative, and in which another organization have adopted <IR> as a mandatory initiative for the mode of reporting up to date. More specifically, in the efforts of regional governments to adopt an integrated thinking that is in line with the role of an integrated reporting system, in communicating of regional investment units. **Practical implications:** To be as an early adopter of <IR> reporting practices towards the implementation of the information system of regional investment potential (ISRIP). We imply that the six capital <IR> with strategic communication will enhance performance of of ISRIP, through fundamental way and as regional strategic wisdom. To meet the values of accountable organization within regional investment units's management. In line with national alignment in global megatrends with the sustainable development goals (SDGs) accomplishment.

Keywords Integrated Thinking, Integrated Reporting <IR>, Regional Investment, Information System for Regional Investment

1. Introduction

Public Investment Management needs to be done with effective investment communication. To manage this public investment at various levels, besides effectiveness, the government also needs to enhance efficiency by

coordinating, strengthening capacities, and ensuring a healthy framework at all levels of government [1]. Furthermore, this investment communication fulfillment in context of sustainable development will be related to environmental management systems [2]. This relates to development and audit to investment accountability. As implementing of a reference related to the international standard ISO 14001 [3]. Investment management in Indonesia for sustainable development has been stated within the vision of the general plan of investment until year of 2025 for Indonesia. With the aim for "sustainable investment in the framework of realizing an independent, advanced, and prosperous Indonesia [4][5].

Indonesia as part of the global community need the effective investment communication, referring to investment decisions according with the implementation of social and environmental responsibilities (Law No. 25 of 2007). More than about financial achievement for investment [6], that investment has relationship with environmental principles that are sustainable and environmentally sound by promoting sustainable economic development (Law No. 32 of 2009) [7]. Based on these regulations or guidelines, all activities related to investment management are carried out by fulfilling the requirements for sustainable investment for sustainable development. Such as investment requirements to fulfill a strategic environmental assessment that must be carried out before obtaining an investment permit. Therefore, this is the main thing for all investment management regulatory approaches in Indonesia that must be in line with the global context in the management of public investment (Presidential Regulation, No. 16 of 2012) [4][5]. Until now, efforts to meet the sustainability of development through investment activities have been pursued [4][5]. The purpose of this research article is to assess what information should be connected and how its information can be connected based on integrated thinking fit within integrated reporting <IR> into information system of regional investment potential (ISRIP) of regional government. To develop insight into how it can be implemented over changes of investment climate due to the top down pressures to fulfill sustainable development goals (SDGs). The benefit of the normative model of investment management development is to support the role of ISRIP according to the promotional strategy approach carried out in 3 (three) groups of regional investment potential [4]. Therefore, it is stated whether there are aspects (integrated thinking and aspects of a connecting functional department), meeting an alignment with strategic communication and with the information criteria towards on regional investment units that are potential, priority and investment being ready to be offered. Therefore, this study aims to answer 2 (two) following questions: (i) are there differences in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance,

past performance, future prospects, and connecting functional departments) (ii) are there relationship in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance, past performance, future prospects, and connecting functional departments). The benefit of this research is to provide insight within the development of regional investment management. Being through by the information system of regional investment potential (ISRIP) as an accountability tool that according to the harmony within achievement of the SDGs.

2. Literature Review

The global development communication has mandate referring to sustainable development in accordance with the integration of the SDGs [7] throughout the investment cycle. Furthermore, where public investment management must be able to contribute to sustainable development targets [8]. This is a moral aspect within an investment ethics [9], in line with ethics in the use of information technology [10]. Investment management is implemented with the support of information system functions and roles. Until this time being, the Government of Indonesia establishes regional investment management in the types of potential investments, investment priorities and leading investments or investment opportunities that are ready to be offered. There are two kinds of approach to determine types of superior investments to be offered for investors. First, are determined by capital investment coordination board (CICB), with from top to bottom up approach, namely through by selection for the regional governments within the regional champion program. Otherside, with another approach through by the promotion of regional investment which determined from the bottom up through the proposed the provincial, regency and city governments [4].

Normatively, to fulfill the role of information system performance, it is necessary to orientate towards an integrated reporting system model [11][12][13][14]. This reporting system is a reporting model developed and refining the sustainable reporting system [15] or triple bottom line reporting [16] from Global Reporting Initiatives [17];[18]. As it is known that the above reporting types only result in an evaluation of historical value. Therefore, relevant efforts can be considered with integrated thinking fit with integrated reporting <IR> towards creating value over time [11], [12], [13], [14], [19], [20], [21]. For fulfillment the performance of the function and role of information system of regional investment potential (ISRIP) [4][5]. Due to the implementation of investment management requires the communication for all of information which needed by investors. For their investments decision, in which of the region which be easily accessible, and with availability for comprehensive

information within "ISRIP" on the website [5]. In this context, the CICB has established a national information system through by the regional governments, which manages information on potential investment on the www.regionalinvestment.bkpm.go.id website with the name "information system regional investment potential (ISRIP)". Functionally and according to its role, an information system really needs its development to fulfill the completeness of contents and basic communication methods. An information system such as for regional investment management is designed to meet the performance of the information system. As an implementation of investment cycle communication [8] that meets investment management accountability requirements for global development sustainability [7].

Functionally, until now, the implementation of "ISRIP" through websites which are managed by regional governments has limited investment information, where most regions have not updated the data. This hampers the effectiveness of information communication which is implemented as a decision reference for investors. Meanwhile, in deciding to invest in an area, investors need investment information that is easily accessible and comprehensive on one site [22][23]. Until now, data updating was carried out by each region, meanwhile otherside, most of the regions had not updated it. For the sake of effectiveness of "ISRIP", [5] capital investment coordination board (CICB), has overhauled this system with the completeness of content and role of information. It includes perspective content element in ISRIP, such as, information for why Indonesia, investment opportunities, incentives, OSS licensing, infrastructure, and potential companies that are ready to partner with up dates on collaboration data/links between Ministries/Institutions and business associations. The capital investment coordinating board (CICB) developed of investment potential information in the ISRIP. Also, CICB encouraging competition between regions in increasing investment potential and updating data on the website. The focus is on 5 (five) provinces that are very promising and investment friendly which will be circulated and communicated every three months to be pushed to become regional investment champions through by the role of "ISRIP". The focus of the first phase of investment is in the Java region, namely West Java, Banten, DKI Jakarta, Central Java and East Java [24][4].

Based on the state of condition of investment management in Indonesia, it can be seen that there are challenges in investment management today. There are challenges in the management of domestic direct investment (DDI) and foreign direct investment (FDI) in terms of equitable growth. Data on investment realization based on investment sector and location shows the

distribution of investment, around 60% is still concentrated in Java and 40% outside Java. Among 34 (thirty-four) provinces with 514 (five hundred and fourteen) districts/cities, shows investment activities are concentrated in only around 30 (thirty) districts/cities. This has resulted in a widening gap in economic development between regions. One of the obstacles faced by investors in exploring investment is the lack of information on investment potential and infrastructure support in the regions [24]. It also becomes a challenge in the global context for investment management within investment promotion effectively [25]. This matter also can be viewed as the impact of the challenges, which showed in the criteria for "ease of doing business" [26], where Indonesia's position is at level 73 out of 190 countries [27].

Table 1 is presented as a normative idea in fulfilling the role of ISRIP. Normatively, we refer to integrated thinking that is in accordance with integrated reporting [11][12][19] within creating value over time. Furthermore, the organization's business model is used in the investment management cycle [8]. As explained by the OECD [1], there are 3 (three) perspectives in investment management. The development model also refers to a perspective [25] which emphasizes the importance of a strategic approach to SDGs. In line with the idea, regarding the role of information systems for investment, namely by aligning investment with SDGs and putting real data behind the word 'impact' [8]. Regional governments need to fulfill guarantees that investment management communications with the ISRIP design can be accounted for sustainable development [7]. For important reasons as stated, normative ideas are put forward in the 'integrated thinking component according to <IR> [11], [12],[19] for the development of ISRIP" [4][5].

Table 1 shows the idea of using the pillars of best practices of investment management adopted as the important cycle of investment management. The development of information system of regional investment potential (ISRIP) that is represented by the achievement of this performance of the information system. First, the application of complete information on the profile of regional investment units with a benchmark for 6 (six) capital of integrated reporting <IR> aspects. Second, by system strengthening with a communication strategically through by ISRIP of regional government.

In the context of regional investment unit information criteria, regional governments refer to [4] with information representation of regional investment units. As description (Table 1) is representation of information criteria. All information presented in ISRIP is related to information needs for investors, in analyzing and evaluating for the sustainability investment opportunities of the offered regional investment units.

Table 1. The integrated thinking's components fit with <IR> for ISRIP development

Integrated thinking (IT) fit with integrated reporting <IR>	ISRIP development		
What information is connected and how information is connected	Content of information within regional investment units into ISRIP		Strategic regional investment management communication within ISRIP
Connecting strategy	Information for regional investment units	6 (six) <IR> capital	
Governance	Description of investment opportunities, market opportunities, estimated investment value, feasibility to offer	Financial (economic measures)	Coordinating a cross level of government and polices.
Past performance	Human resources: feasibility to offer	Human	Strengthen capacities at all levels of government.
Future prospect	Facilities and infrastructure: production and investment scale offered, available infrastructure, supporting industries, feasibility to offer	Manufacture	Proper framework conditions for public investment at all level of government.
Connecting functional department	SME's stakeholders and large entrepreneurs, feasibility to offer	Social	Sourcing and due diligence of screening investments to advance an SDG
	Support of regional regulations, regulatory aspects, land ownership status, feasibility to offer	Intellectual propret right	Investment selection and structuring (analysis and verification)
	General condition of the area, availability of land for development, environmental aspects, feasibility to offer	Natural (environment)	Measuring and reporting progress made toward the SDGs

(Sources: [19], [1], [11], [12], [13], [14], [25], [8], [4],[5])

Table 2. Information criteria within a regional investment unit

Information criteria for regional investment units	Information on analysis results	Information on the results of factual verification
The object offered (name of the investment unit)	Name of regional investment unit	Name of regional investment unit
Availability of raw materials	There is (name of place)	Support
Availability of competent human resources	There are graduate educational institutions available	Support
Availability of facilities and infrastructure	complete facilities and infrastructure available	Support
Short term and long term market	The existence of a captive market for the products produced	Support
Domestic and foreign markets	There is a captive market for domestic and abroad	Support
The involvement of small and medium stakeholders and large entrepreneurs	There are areas for SMEs and partnership facilities	Support
Compliance with statutory regulations	Already have principal permits and and other related regulations	Support
Environmental aspects	there has been an analysis of environmental impact studies	Support
Land availability and status and ownership	already controlled by the area manager with an area (... hectares), available land (... hectares)	Support
Estimated investment (IDR)	(money term)	Support
Eligibility to be offered to investors	---	worth offering to investors

(Source: [4])

The management of ISRIP requires aligning both strategic and technical aspects. First is strategic, because ISRIP is part of investment promotion carried out through the function and role of the "Indonesia Investment Promotion Center (IIPC). In investment management, the

functions and roles of ISRIP be integrated [25], [8], [4], [28], [5], to achieve the strategic objectives in line with SDGs [7]. Therefore, strategically, fulfilling the information criteria for communication of regional investment units is needed as a strategic way to fulfill

objectives that are in line with the functions and roles of the IIPC. In accordance with the functions and roles of the IIPC, the function orientation and strategic role of ISRIP is directed at fulfilling several tasks and functions, namely: (i) 1. Increase investment from domicile countries and working areas to Indonesia; (ii) Facilitating investment from Indonesia to domicile countries and working areas. Second, from an information technology perspective, because ISRIP is an integrated part of the National Single Window for Investment (NSWI) [28]. Functionally, for operational capability, ISRIP is managed through its implementation at the Regional Government Investment Service. Become an integrated part of the joint sitemap in NSWI, namely with a homepage for the public (individuals/communities), and for investors (individuals or companies).

Based on the explanation regarding investment management to fulfill the role of ISRIP performance, then the approach described (Table 1 and Table 2) can be used. Therefore, in general, the approach to fulfilling the information criteria alignment for the regional investment profile represented in the fulfillment of 6 (six) integrated reporting capital <IR> [11], [12], [19], [13], [14] is relevant to be implemented in ISRIP. Then strategically by laying a foundation based on strategic communication investment management [25], [8], [4], [28], [5], to achieve the strategic objectives in line with SDGs [7]. Both of these perspectives are relevant approaches to be applied in the effort to achieve sustainable development from regional investment management through the role of ISRIP in regional governments.

Some previous studies [29], [30], [20], [31], [32], [33], [34] were put forward as contextual discussing for this research. The study previously showed using theory such as legitimacy and stakeholder theories in environmental control through an organizational reporting approach [9], [35]. Study for role of country –and firm-level determinants in environmental, social, and governance disclosure [9], [35], [36]. Other studies [21], [37] showed research themes for different study subjects. Then research related to best practice reporting <IR> on 164 company organizations around the globe [38]. As well as a study on disclosure of social investment through the role of <IR> [39].

Our research is carried out as an effort to answer questions related to aspects of regional investment management, to support sustainable development with the role of an integrated regional investment potential information system based on integrated thinking. The study is carried out based on the relevant legitimacy theory used to explain and control what will be planned and realized. The study is carried out based on the extensively used the legitimacy theory to explain and control for what to be planned and to be realized. With accountability for investment as social contracts point of view. Also, it relates to stakeholder theory within fulfillment the performance

accountability [9]. Research uses aspects in the integrated thinking model with their alignment in the integrated reporting system [11], [12], [19], [13], [14] within the implementation of ISRIP [4], [5].

3. Research Methods

This section describes the approach used in the study, identified the sample unit and unit of analysis, data collection process approach, and data analysis process approach. This research is a quantitative research using non-parametric statistical analysis tool.

3.1. Sample and Unit of Analysis

The research sample is regional government in Indonesia that manages the information system of regional investment potential (ISRIP). The units of analysis are regional investment units as investment profiles offered to investors through ISRIP communications. Regional investment units are classified into 3 (three) regional investment classifications, namely: (i) potential investment (P), (ii) priority investment (Pr), and (iii) investment that has an opportunity (Opportunity (O)) ready to offer [4]. The selection for sample unit and for the unit of analysis are carried out with gradual judgment sampling on a cluster basis. With top down and bottom up investment management approaches [4]. This stage resulted into 3 (three) research sample clusters, namely: (i) selected sample for 4 (four) provinces with 8 (eight) regional government entities (district/cities) (top down approach) [4]. (ii) selected sample for East Kalimantan Province (contemporary issue of being the new capital city for Indonesia [40], bottom up approach [4]. (iii). Determination of samples at the government entities of South Kalimantan Province (related contemporary issues as the gateway to the new capital city of the State, bottom up approach [4]. The second stage is the selection within regional investment units within selected regional government, with investment criteria: (i) potential investment criteria to be carried out (in accordance with development plans, sectoral strategic plans, investment locations and spatial plans, linkages between sectors, can be cover costs, preliminary studies), (ii) priority investment criteria to be carried out (regional government proposals or investor requests, pre-feasibility studies, identified risk management, proposed priority public-private partnership programs, government support for identification of poverty alleviation investments), (iii) investment criteria that are ready to be offered (complete investment supporting documents, government approval support, administrative readiness related to the realization of investment programs/activities/projects) [4]. Results of sample selection and unit analysis: (i) with 48 (forty eight) regional investment units in the top down cluster, (ii) with 24

(twenty four) regional investment units in the bottom up cluster and (iii) with selected sample for 28 (twenty eight) regional investment units in the bottom up cluster. This amount is considered sufficient [41] for the purposes of analysis and for conclusions.

3.2. Variables and Measurement

The operational definitions of variables, indicator items and their measurement are presented in Table 2. The operational definition of IR was for what information is connected, towards potential investment, priority investment, and leading investment opportunities, while for dependent variable of ISRIP is operationally related as Implementation of six <IR> capital for ISRIP. More specifically, It is defined as in central connectivity for completeness of information within regional investment units to be informed into six <IR> capital that can be reported within ISRIP. Meanwhile, Implementation for strategic communication of ISRIP was related to the functional connection between regional governmental work units internally, and with other level of government externally towards performance of ISRIP. The detail of items was explained in Table 3.

Table 3. Variables and measurement

Variable	Item	Reference	Scale
Integrated Reporting (X)	Connecting strategy (X1)		Nominal
	Governance (X2)	[11], [12],	
	Past performance (X3)	[4], [21]	
	Future prospect (X4)		
	Connecting functional departments (X5)		
ISRIP (Y)	Implementation of information system of regional investment potential (ISRIP) (Y1)	[11], [12], [19], [4]	Nominal
	Implementation for strategic communication of ISRIP (Y2)	[11], [12], [19], [4], [25], [8]	

The independent variable and the dependent variable of this study with each indicator item be measured by a nominal scale. Measurement using items of indicator of each research variable towards the research analysis unit (regional investment unit) with the type of potential investment (P), priority (Pr) and investment ready to offer (O). In accordance with the nominal measurement scale, direct measurements are made with the relevant documentation source [4][5]; general investment plan document (online data reference related to regional investment) related to the study subject). For measurements that indicate the indicator item is met in the investment profile of the regional investment unit, the value is given 1. Meanwhile, for the measurement that shows the characteristics of the indicator items that are not yet fulfilled in the information on the investment profile

form each of the regional investment unit, it is given a value of 0.

3.3. Data Analysis

The results of direct measurement of the indicator items of the alignment of the information criteria in the regional investment unit profile (P/Pr/O) are then used in the analysis phase. In accordance with the research objectives, the results of the analysis are used to assess the propositions in the first statement, whether there is a difference, and for the second statement whether there is a relationship between the variables. For data analysis and testing of hypothesis statements (Ho1 and Ho2) used non-parametric statistical test tools, namely the chi-Square goodness of fit test or the chi-square test for independence [42]. With using the chi-square test tool and the use of the contingency within measure the frequency of observation (OF) and the expected frequency (EF), to value of test difference of hypotheses (Ho1). Then to test the level of relationship between variables (Ho2) is used the correlation test with referring to the C-contingency value. For the analysis stage and fulfillment of the conclusions of this study, we also use a focus group discussion (FGD) approach as a semi-structured discussion forum. And by conducting field research for 1 (one) district that is currently developing to upload data to ISRIP as a role model for this research. Several key people were involved in making the statement. As part of thoughts and ideas related to efforts to develop investment management according to regional conditions in the context of investment promotion nationally and globally.

4. Result and Discussion

Hypothesis testing for the difference test (H01) and for the relationship test (H02) was carried out using the chi-square test for goodness of fit. First, testing for the Ho1 hypothesis is done by comparing the X2 table with the X2 observation as the basis for acceptance or rejection of the hypothesis research H01. **Second, to assess the closeness of the relationship between variables X and Y within the hypothesis research H02, be valued, after obtaining the results of the chi square difference test, with a measure of the contingency coefficient (C Contingency).** The data in Table 4 are the basis for testing the research hypothesis.

Hypothesis Testing (H0₁), is a test for different tests in the application of aspects from the dimensions of integrated thinking (IT) with the implementation of a regional investment potential information system (ISRIP). Testing by measuring the frequency of observation (OF) with the expected frequency (EF) whichever is the greater the frequency. The measurement results show that the observation frequency reaches a value of 137.97. Then for

the expected frequency (EF) which is determined by referring to the degrees of freedom of rows and columns (6-1) (7-1) with a significance level of 0.05, the frequency value in the chi squared table is 43.77. Based on the comparison of X2 observation 137.97 which is greater than X2 table 43.77, this means that Ho1 can be rejected, at the chi-square significance value < 0.05. The results of testing this hypothesis indicate that there are differences in the

application of the Regional Investment Potential Information System (ISRIP) and the fulfillment of the integrated thinking aspect. These results also mean that fulfillment of (connecting strategy, governance, past performance, future prospects and connecting functional departments) provides performance outcomes in the regional government's ISRIP role.

Table 4. Observation frequency (OF) and expectation frequency (EF)

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> C	Cont El <IR>	Amount
The rhetorical components of integrated thinking fit with <IR>								
Very Rhetorical Component IT & IR								
Score 6 (OF)	28	32	32	63	75	73	89	392
Fe	56	56	56	56	56	56	56	
Rhetorical Component IT & IR								
Score 5 (OF)	42	25	43	24	8	15	1	158
Fe	22.5714	22.5714	22.5714	22.5714	22.5714	22.5714	22.5714	
Rhetorical Enough								
Score 4 (OF)	19	32	23	11	3	1	10	99
Fe	14.1428	14.1428	14.1428	14.1428	14.1428	14.1428	14.1428	
Less Rhetorical								
Score 3 (OF)	11	9	2	1	8	11	0	42
Fe	6	6	6	6	6	6	6	
Very Less Rhetorical								
Score 2 (OF)	0	2	0	1	4	0	0	7
Fe	1	1	1	1	1	1	1	
Bad Rhetorical								
Score 1 (OF)	0	0	0	0	2	2	0	4
Fe	0.5714	0.5714	0.5714	0.5714	0.5714	0.5714	0.5714	
Amount	100	100	100	100	100	100	100	700

Table 5. Contingency & chi square observation

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> Cap	Cont El <IR>	Amount
	-28	-24	-24	7	19	17	33	
	784	576	576	49	361	289	1089	
Xo Observation	14	10.2857	10.2857	0.875	6.4464	5.1607	19.4464	35.4464
	19.4285	2.42857	20.4285	1.42857	-14.5714	-7.5714	-21.5714	
	377.4693	5.8979	417.3265	2.0408	212.3265	57.3265	465.3265	
Xo Observation	16.7233	0.2613	18.4891	0.0904	9.4068	2.5397	20.6157	35.5641
	4.8571	17.8571	8.8571	-3.1428	-11.1428	2.8571	-4.1428	
	23.5918	318.8775	78.4489	9.8775	124.1632	8.1632	17.1632	
Xo Observation	1.6681	22.5468	5.5468	0.6984	8.7792	0.5772	1.2135	30.4603
	5	3	-4	-5	2	5	-6	
	25	9	16	25	4	25	36	
Xo Observation	4.1666	1.5	2.6666	4.1666	0.6666	4.1666	6	12.5
	-1	1	-1	0	3	-1	-1	
	1	1	1	0	9	1	1	
Xo Observation	1	1	1	0	9	1	1	14
	-0.5714	-0.5714	-0.5714	-0.5714	1.4285	1.4285	-0.5714	
	0.3265	0.3265	0.3265	0.3265	2.0408	2.0408	0.3265	

Xo Observation	0.5714	0.5714	0.5714	0.5714	3.5714	3.5714	0.5714	10
Amount	X2 Observation							137.9709
	X2 table							43.77
	N							700
	C Contingency							0.4057

Hypothesis testing is to assess the level of relationship between the variables from the different test results (H01). By calculating the value of the Pearson contingent coefficient ($C = \sqrt{XO2/(N + XO2)}$). Based on the data in Table 5 (appendix- Contingency & chi square observation), the value of $C = \sqrt{137.97/(700 + 137.97)}$ is obtained = 0.4057. Referring to Guilford's empirical rule, it shows that the C-contingency value is a bounded association coefficient between $0 < 1$, where: $0 =$ no association/relationship, and $1 =$ perfect association/relationship. contingency C of 0.4057 can be expressed as "moderate correlation." These results indicate that there is a significant relationship with moderate correlation in the performance of the regional investment potential information system (ISRIP) through integrated thinking for completeness of information on six capital <IR>, and with strategic communication in enhancing the role of ISRIP.

5. Concluding Remarks

The results of this study gave evidences form the basis for the coherence of an integrated thinking model that is in line with integrated thinking in the management of communication of regional investment units. The results of this study are empirical facts about the role clarity (future prospects, connected functional departments, implementation of six capital <IR> for ISRIP, and implementation for ISRIP strategic communication) in ISRIP implementation. These empirical facts are in line with a number of studies related to the integrated reporting aspect in creating value over time[30], [20], [31], [38], [32], [33], [34], [36]. The results of this study are also in line with Ratnatunga and Jones [29] in communicating the five bottom line theory of reporting with the reporting index criteria. Then with moderate results, where the empirical facts from aspects (connecting strategy, governance, and

past performance) which have relatively low achievements in strengthening ISRIP performance, show alignment with the study perspective [37]. However, the results of the study provided moderate empirical facts that investment management has a relationship with a social contract perspective related to its decisions, with the theory of legitimacy and stakeholders in environmental control through an organizational reporting approach [9], [35].

In the context of managing Indonesia's regional investment for the ASEAN and global environment, it is necessary to implement the functions and roles of ISRIP [4][5]. This system is implemented formally by complying with national regulations (Law No. 25 of 2007). The functions and roles of ISRIP are fulfilled in relation to the suitability of the investment communication approach with the agreement in the AEC [43]. Because Indonesia is a member of the ASEAN Community and the integration of the AEC, investment management in the Indonesian region must be related to the ASEAN Comprehensive Investment Agreement (ACIA). This step is also in line with investment policies in the integration of development priorities and sectors for investment [43]. Furthermore, investment management within regional, however, should obey to enhance within compliance of the SDGs [7].

This study has limitations regarding the use of nominal scale measurement. Therefore, next research is needed with **elevating the of the measurement scales**, also with expanding the research sample. With the support of a more comprehensive study, a regional investment management policy should be able to receive input in a more substantive and massive manner.

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Integrated Reporting, Sustainable Development Goals and the Role of Regional Information System

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Abstract Purpose: The purpose of this research article is to assess what information should be connected and how its information can be connected based on integrated thinking fit within integrated reporting <IR> into information system of regional investment potential (ISRIP) of regional government. To develop insight into how it can be implemented over changes of investment climate due to the top down pressures to fulfill sustainable development goals (SDGs). **Design/methodology/approach:** we conducted research for regional governments (province/district/city) in Indonesia with investment characteristics of the potential, priorities and opportunities of regional investment units by taking samples for 100 regional investment units. Measurement used nominal scale with chi-square test for goodness of fit to get the measurement of observation frequency (OF) and compared with the expected frequency (EF). **Findings:** the measurement results showed observed frequency (OF) with a value of 137.97. Afterwards, for expected frequency (EF), with degrees of freedom (6-1) (7-1) and a significance level of 0.05, within the chi-square showed the value of 43.77. Due to $OF > EF$, this result indicated for being of corresponding between integrated thinking of regional investment within implementation of information system of regional investment potential (ISRIP). The level of integrated thinking relationships with integrated reporting <IR> in the role of "ISRIP" has a Pearson contingency coefficient of 0.4057, as a moderate relationship. **Originality:** This research article contributes to the growing debate about the benefits of integrated

reporting as a voluntary reporting initiative, and in which another organization have adopted <IR> as a mandatory initiative for the mode of reporting up to date; more specifically, in the efforts of regional governments to adopt an integrated thinking that is in line with the role of an integrated reporting system, in communicating of regional investment units. **Practical implications:** To be as an early adopter of <IR> reporting practices towards the implementation of the information system of regional investment potential (ISRIP). We imply that the six capital <IR> with strategic communication will enhance performance of ISRIP, through fundamental way and as regional strategic wisdom. To meet the values of accountable organization within regional investment units' management. In line with national alignment in global megatrends with the sustainable development goals (SDGs) accomplishment.

Keywords Integrated Thinking, Integrated Reporting <IR>, Regional Investment, Information System for Regional Investment

1. Introduction

Public Investment Management needs to be done with effective investment communication. To manage this public investment at various levels, besides effectiveness, the government also needs to enhance efficiency by

coordinating, strengthening capacities, and ensuring a healthy framework at all levels of government [1]. Furthermore, this investment communication fulfillment in context of sustainable development will be related to environmental management systems [2]. This relates to development and audit to investment accountability. As implementing of a reference related to the international standard ISO 14001 [3]. Investment management in Indonesia for sustainable development has been stated within the vision of the general plan of investment until year of 2025 for Indonesia. With the aim for "sustainable investment in the framework of realizing an independent, advanced, and prosperous Indonesia [4][5].

Indonesia as part of the global community need the effective investment communication, referring to investment decisions according with the implementation of social and environmental responsibilities (Law No. 25 of 2007). More than about financial achievement for investment [6], that investment has relationship with environmental principles that are sustainable and environmentally sound by promoting sustainable economic development (Law No. 32 of 2009) [7]. Based on these regulations or guidelines, all activities related to investment management are carried out by fulfilling the requirements for sustainable investment for sustainable development. Such as investment requirements to fulfill a strategic environmental assessment that must be carried out before obtaining an investment permit. Therefore, this is the main thing for all investment management regulatory approaches in Indonesia that must be in line with the global context in the management of public investment (Presidential Regulation, No. 16 of 2012) [4][5]. Until now, efforts to meet the sustainability of development through investment activities have been pursued [4][5]. The purpose of this research article is to assess what information should be connected and how its information can be connected based on integrated thinking fit within integrated reporting <IR> into information system of regional investment potential (ISRIP) of regional government. To develop insight into how it can be implemented over changes of investment climate due to the top down pressures to fulfill sustainable development goals (SDGs). The benefit of the normative model of investment management development is to support the role of ISRIP according to the promotional strategy approach carried out in 3 (three) groups of regional investment potential [4]. Therefore, it is stated whether there are aspects (integrated thinking and aspects of a connecting functional department), meeting an alignment with strategic communication and with the information criteria towards on regional investment units that are potential, priority and investment being ready to be offered. Therefore, this study aims to answer 2 (two) following questions: (i) are there differences in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance,

past performance, future prospects, and connecting functional departments) (ii) are there relationship in ISRIP performance within regional investment units that worth to be offered, with the fulfillment of aspects (connecting strategy, governance, past performance, future prospects, and connecting functional departments). The benefit of this research is to provide insight within the development of regional investment management. Being through by the information system of regional investment potential (ISRIP) as an accountability tool that according to the harmony within achievement of the SDGs.

2. Literature Review

The global development communication has mandate referring to sustainable development in accordance with the integration of the SDGs [7] throughout the investment cycle. Furthermore, where public investment management must be able to contribute to sustainable development targets [8]. This is a moral aspect within an investment ethics [9], in line with ethics in the use of information technology [10]. Investment management is implemented with the support of information system functions and roles. Until this time being, the Government of Indonesia establishes regional investment management in the types of potential investments, investment priorities and leading investments or investment opportunities that are ready to be offered. There are two kinds of approach to determine types of superior investments to be offered for investors. First, are determined by capital investment coordination board (CICB), with from top to bottom up approach, namely through by selection for the regional governments within the regional champion program. Otherside, with another approach through by the promotion of regional investment which determined from the bottom up through the proposed the provincial, regency and city governments [4].

Normatively, to fulfill the role of information system performance, it is necessary to orientate towards an integrated reporting system model [11][12][13][14]. This reporting system is a reporting model developed and refining the sustainable reporting system [15] or triple bottom line reporting [16] from Global Reporting Initiatives [17];[18]. As it is known that the above reporting types only result in an evaluation of historical value. Therefore, relevant efforts can be considered with integrated thinking fit with integrated reporting <IR> towards creating value over time [11], [12], [13], [14], [19], [20], [21]. For fulfillment the performance of the function and role of information system of regional investment potential (ISRIP) [4][5]. Due to the implementation of investment management requires the communication for all of information which needed by investors. For their investments decision, in which of the region which be easily accessible, and with availability for comprehensive

information within "ISRIP" on the website [5]. In this context, the CICB has established a national information system through by the regional governments, which manages information on potential investment on the www.regionalinvestment.bkpm.go.id website with the name "information system regional investment potential (ISRIP)". Functionally and according to its role, an information system really needs its development to fulfill the completeness of contents and basic communication methods. An information system such as for regional investment management is designed to meet the performance of the information system. As an implementation of investment cycle communication [8] that meets investment management accountability requirements for global development sustainability [7].

Functionally, until now, the implementation of "ISRIP" through websites which are managed by regional governments has limited investment information, where most regions have not updated the data. This hampers the effectiveness of information communication which is implemented as a decision reference for investors. Meanwhile, in deciding to invest in an area, investors need investment information that is easily accessible and comprehensive on one site [22][23]. Until now, data updating was carried out by each region, meanwhile otherside, most of the regions had not updated it. For the sake of effectiveness of "ISRIP", [5] capital investment coordination board (CICB), has overhauled this system with the completeness of content and role of information. It includes perspective content element in ISRIP, such as, information for why Indonesia, investment opportunities, incentives, OSS licensing, infrastructure, and potential companies that are ready to partner with up dates on collaboration data/links between Ministries/Institutions and business associations. The capital investment coordinating board (CICB) developed of investment potential information in the ISRIP. Also, CICB encouraging competition between regions in increasing investment potential and updating data on the website. The focus is on 5 (five) provinces that are very promising and investment friendly which will be circulated and communicated every three months to be pushed to become regional investment champions through by the role of "ISRIP". The focus of the first phase of investment is in the Java region, namely West Java, Banten, DKI Jakarta, Central Java and East Java [24][4].

Based on the state of condition of investment management in Indonesia, it can be seen that there are challenges in investment management today. There are challenges in the management of domestic direct investment (DDI) and foreign direct investment (FDI) in terms of equitable growth. Data on investment realization based on investment sector and location shows the

distribution of investment, around 60% is still concentrated in Java and 40% outside Java. Among 34 (thirty-four) provinces with 514 (five hundred and fourteen) districts/cities, shows investment activities are concentrated in only around 30 (thirty) districts/cities. This has resulted in a widening gap in economic development between regions. One of the obstacles faced by investors in exploring investment is the lack of information on investment potential and infrastructure support in the regions [24]. It also becomes a challenge in the global context for investment management within investment promotion effectively [25]. This matter also can be viewed as the impact of the challenges, which showed in the criteria for "ease of doing business" [26], where Indonesia's position is at level 73 out of 190 countries [27].

Table 1 is presented as a normative idea in fulfilling the role of ISRIP. Normatively, we refer to integrated thinking that is in accordance with integrated reporting [11][12][19] within creating value over time. Furthermore, the organization's business model is used in the investment management cycle [8]. As explained by the OECD [1], there are 3 (three) perspectives in investment management. The development model also refers to a perspective [25] which emphasizes the importance of a strategic approach to SDGs. In line with the idea, regarding the role of information systems for investment, namely by aligning investment with SDGs and putting real data behind the word 'impact' [8]. Regional governments need to fulfill guarantees that investment management communications with the ISRIP design can be accounted for sustainable development [7]. For important reasons as stated, normative ideas are put forward in the 'integrated thinking component according to <IR> [11], [12], [19] for the development of ISRIP" [4][5].

Table 1 shows the idea of using the pillars of best practices of investment management adopted as the important cycle of investment management. The development of information system of regional investment potential (ISRIP) that is represented by the achievement of this performance of the information system. First, the application of complete information on the profile of regional investment units with a benchmark for 6 (six) capital of integrated reporting <IR> aspects. Second, by system strengthening with a communication strategically through by ISRIP of regional government.

In the context of regional investment unit information criteria, regional governments refer to [4] with information representation of regional investment units. As description (Table 1) is representation of information criteria. All information presented in ISRIP is related to information needs for investors, in analyzing and evaluating for the sustainability investment opportunities of the offered regional investment units.

Table 1. The integrated thinking's components fit with <IR> for ISRIP development

Integrated thinking (IT) fit with integrated reporting <IR>	ISRIP development		
What information is connected and how information is connected	Content of information within regional investment units into ISRIP		Strategic regional investment management communication within ISRIP
Connecting strategy	Information for regional investment units	6 (six) <IR> capital	
Governance	Description of investment opportunities, market opportunities, estimated investment value, feasibility to offer	Financial (economic measures)	Coordinating a cross level of government and polices.
Past performance	Human resources: feasibility to offer	Human	Strengthen capacities at all levels of government.
Future prospect	Facilities and infrastructure: production and investment scale offered, available infrastructure, supporting industries, feasibility to offer	Manufacture	Proper framework conditions for public investment at all level of government.
Connecting functional department	SME's stakeholders and large entrepreneurs, feasibility to offer	Social	Sourcing and due diligence of screening investments to advance an SDG
	Support of regional regulations, regulatory aspects, land ownership status, feasibility to offer	Intellectual propret right	Investment selection and structuring (analysis and verification)
	General condition of the area, availability of land for development, environmental aspects, feasibility to offer	Natural (environment)	Measuring and reporting progress made toward the SDGs

(Sources: [19], [1], [11], [12], [13], [14], [25], [8], [4],[5])

Table 2. Information criteria within a regional investment unit

Information criteria for regional investment units	Information on analysis results	Information on the results of factual verification
The object offered (name of the investment unit)	Name of regional investment unit	Name of regional investment unit
Availability of raw materials	There is (name of place)	Support
Availability of competent human resources	There are graduate educational institutions available	Support
Availability of facilities and infrastructure	complete facilities and infrastructure available	Support
Short term and long term market	The existence of a captive market for the products produced	Support
Domestic and foreign markets	There is a captive market for domestic and abroad	Support
The involvement of small and medium stakeholders and large entrepreneurs	There are areas for SMEs and partnership facilities	Support
Compliance with statutory regulations	Already have principal permits and and other related regulations	Support
Environmental aspects	there has been an analysis of environmental impact studies	Support
Land availability and status and ownership	already controlled by the area manager with an area (... hectares), available land (..... hectares)	Support
Estimated investment (IDR)	(money term)	Support
Eligibility to be offered to investors	---	worth offering to investors

(Source: [4])

The management of ISRIP requires aligning both strategic and technical aspects. First is strategic, because ISRIP is part of investment promotion carried out through the function and role of the "Indonesia Investment Promotion Center (IIPC). In investment management, the functions and roles of ISRIP be integrated [25], [8], [4], [28], [5], to achieve the strategic objectives in line with SDGs [7]. Therefore, strategically, fulfilling the information criteria for communication of regional

investment units is needed as a strategic way to fulfill objectives that are in line with the functions and roles of the IIPC. In accordance with the functions and roles of the IIPC, the function orientation and strategic role of ISRIP is directed at fulfilling several tasks and functions, namely: (i) 1. Increase investment from domicile countries and working areas to Indonesia; (ii) Facilitating investment from Indonesia to domicile countries and working areas. Second, from an information technology perspective,

because ISRIP is an integrated part of the National Single Window for Investment (NSWI) [28]. Functionally, for operational capability, ISRIP is managed through its implementation at the Regional Government Investment Service. Become an integrated part of the joint sitemap in NSWI, namely with a homepage for the public (individuals/communities), and for investors (individuals or companies).

Based on the explanation regarding investment management to fulfill the role of ISRIP performance, then the approach described (Table 1 and Table 2) can be used. Therefore, in general, the approach to fulfilling the information criteria alignment for the regional investment profile represented in the fulfillment of 6 (six) integrated reporting capital <IR> [11], [12], [19], [13], [14] is relevant to be implemented in ISRIP. Then strategically by laying a foundation based on strategic communication investment management [25], [8], [4], [28], [5], to achieve the strategic objectives in line with SDGs [7]. Both of these perspectives are relevant approaches to be applied in the effort to achieve sustainable development from regional investment management through the role of ISRIP in regional governments.

Some previous studies [29], [30], [20], [31], [32], [33], [34] were put forward as contextual discussing for this research. The study previously showed using theory such as legitimacy and stakeholder theories in environmental control through an organizational reporting approach [9], [35]. Study for role of country –and firm-level determinants in environmental, social, and governance disclosure [9], [35], [36]. Other studies [21], [37] showed research themes for different study subjects. Then research related to best practice reporting <IR> on 164 company organizations around the globe [38]. As well as a study on disclosure of social investment through the role of <IR> [39].

Our research is carried out as an effort to answer questions related to aspects of regional investment management, to support sustainable development with the role of an integrated regional investment potential information system based on integrated thinking. The study is carried out based on the relevant legitimacy theory used to explain and control what will be planned and realized. The study is carried out based on the extensively used the legitimacy theory to explain and control for what to be planned and to be realized. With accountability for investment as social contracts point of view. Also, it relates to stakeholder theory within fulfillment the performance accountability [9]. Research uses aspects in the integrated thinking model with their alignment in the integrated reporting system [11], [12], [19], [13], [14] within the implementation of ISRIP [4], [5].

3. Research Methods

This section describes the approach used in the study,

identified the sample unit and unit of analysis, data collection process approach, and data analysis process approach. This research is a quantitative research using non-parametric statistical analysis tool.

3.1. Sample and Unit of Analysis

The research sample is regional government in Indonesia that manages the information system of regional investment potential (ISRIP). The units of analysis are regional investment units as investment profiles offered to investors through ISRIP communications. Regional investment units are classified into 3 (three) regional investment classifications, namely: (i) potential investment (P), (ii) priority investment (Pr), and (iii) investment that has an opportunity (Opportunity (O)) ready to offer [4]. The selection for sample unit and for the unit of analysis are carried out with gradual judgment sampling on a cluster basis. With top down and bottom up investment management approaches [4]. This stage resulted into 3 (three) research sample clusters, namely: (i) selected sample for 4 (four) provinces with 8 (eight) regional government entities (district/cities) (top down approach) [4]. (ii) selected sample for East Kalimantan Province (contemporary issue of being the new capital city for Indonesia [40], bottom up approach [4]. (iii). Determination of samples at the government entities of South Kalimantan Province (related contemporary issues as the gateway to the new capital city of the State, bottom up approach [4]. The second stage is the selection within regional investment units within selected regional government, with investment criteria: (i) potential investment criteria to be carried out (in accordance with development plans, sectoral strategic plans, investment locations and spatial plans, linkages between sectors, can be cover costs, preliminary studies), (ii) priority investment criteria to be carried out (regional government proposals or investor requests, pre-feasibility studies, identified risk management, proposed priority public-private partnership programs, government support for identification of poverty alleviation investments), (iii) investment criteria that are ready to be offered (complete investment supporting documents, government approval support, administrative readiness related to the realization of investment programs/activities/projects) [4]. Results of sample selection and unit analysis: (i) with 48 (forty eight) regional investment units in the top down cluster, (ii) with 24 (twenty four) regional investment units in the bottom up cluster and (iii) with selected sample for 28 (twenty eight) regional investment units in the bottom up cluster. This amount is considered sufficient [41] for the purposes of analysis and for conclusions.

3.2. Variables and Measurement

The operational definitions of variables, indicator items and their measurement are presented in Table 2. The

operational definition of IR was for what information is connected, towards potential investment, priority investment, and leading investment opportunities, while for dependent variable of ISRIP is operationally related as Implementation of six <IR> capital for ISRIP. More specifically, It is defined as in central connectivity for completeness of information within regional investment units to be informed into six <IR> capital that can be reported within ISRIP. Meanwhile, Implementation for strategic communication of ISRIP was related to the functional connection between regional governmental work units internally, and with other level of government externally towards performance of ISRIP. The detail of items was explained in Table 3.

Table 3. Variables and measurement

Variable	Item	Reference	Scale
Integrated Reporting (X)	Connecting strategy (X1)		Nominal
	Governance (X2)	[11], [12],	
	Past performance (X3)	[4], [21]	
	Future prospect (X4)		
	Connecting functional departments (X5)		
ISRIP (Y)	Implementation of information system of regional investment potential (ISRIP) (Y1)	[11], [12], [19], [4]	Nominal
	Implementation for strategic communication of ISRIP (Y2)	[11], [12], [19], [4], [25], [8]	

The independent variable and the dependent variable of this study with each indicator item be measured by a nominal scale. Measurement using items of indicator of each research variable towards the research analysis unit (regional investment unit) with the type of potential investment (P), priority (Pr) and investment ready to offer (O). In accordance with the nominal measurement scale, direct measurements are made with the relevant documentation source [4], [5]; general investment plan document (online data reference related to regional investment) related to the study subject). For measurements that indicate the indicator item is met in the investment profile of the regional investment unit, the value is given 1. Meanwhile, for the measurement that shows the characteristics of the indicator items that are not yet fulfilled in the information on the investment profile form each of the regional investment unit, it is given a value of 0.

3.3. Data Analysis

The results of direct measurement of the indicator items of the alignment of the information criteria in the regional investment unit profile (P/Pr/O) are then used in the analysis phase. In accordance with the research objectives, the results of the analysis are used to assess the

propositions in the first statement, whether there is a difference, and for the second statement whether there is a relationship between the variables. For data analysis and testing of hypothesis statements (Ho1 and Ho2) used non-parametric statistical test tools, namely the chi-Square goodness of fit test or the chi-square test for independence [42]. With using the chi-square test tool and the use of the contingency within measure the frequency of observation (OF) and the expected frequency (EF), to value of test difference of hypotheses (Ho1). Then to test the level of relationship between variables (Ho2) is used the correlation test with referring to the C-contingency value. For the analysis stage and fulfillment of the conclusions of this study, we also use a focus group discussion (FGD) approach as a semi-structured discussion forum. And by conducting field research for 1 (one) district that is currently developing to upload data to ISRIP as a role model for this research. Several key people were involved in making the statement. As part of thoughts and ideas related to efforts to develop investment management according to regional conditions in the context of investment promotion nationally and globally.

4. Result and Discussion

Hypothesis testing for the difference test (H01) and for the relationship test (H02) was carried out using the chi-square test for goodness of fit. First, testing for the Ho1 hypothesis is done by comparing the X2 table with the X2 observation as the basis for acceptance or rejection of the hypothesis research H01. Second, to assess the closeness of the relationship between variables X and Y within the hypothesis research H02, be valued, after obtaining the results of the chi square difference test, with a measure of the contingency coefficient (C Contingency). The data in Table 4 are the basis for testing the research hypothesis.

Hypothesis Testing (H0₁), is a test for different tests in the application of aspects from the dimensions of integrated thinking (IT) with the implementation of a regional investment potential information system (ISRIP). Testing by measuring the frequency of observation (OF) with the expected frequency (EF) whichever is the greater the frequency. The measurement results show that the observation frequency reaches a value of 137.97. Then for the expected frequency (EF) which is determined by referring to the degrees of freedom of rows and columns (6-1) (7-1) with a significance level of 0.05, the frequency value in the chi squared table is 43.77. Based on the comparison of X2 observation 137.97 which is greater than X2 table 43.77, this means that Ho1 can be rejected, at the chi-square significance value < 0.05. The results of testing this hypothesis indicate that there are differences in the application of the Regional Investment Potential Information System (ISRIP) and the fulfillment of the integrated thinking aspect. These results also mean that fulfillment of (connecting strategy, governance, past

performance, future prospects and connecting functional regional government's ISRIP role. departments) provides performance outcomes in the

Table 4. Observation frequency (OF) and expectation frequency (EF)

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> C	Cont El <IR>	Amount
The rhetorical components of integrated thinking fit with <IR>								
Very Rhetorical Component IT & IR								
Score 6 (OF)	28	32	32	63	75	73	89	392
Fe	56	56	56	56	56	56	56	
Rhetorical Component IT & IR								
Score 5 (OF)	42	25	43	24	8	15	1	158
Fe	22.5714	22.5714	22.5714	22.5714	22.5714	22.5714	22.5714	
Rhetorical Enough								
Score 4 (OF)	19	32	23	11	3	1	10	99
Fe	14.1428	14.1428	14.1428	14.1428	14.1428	14.1428	14.1428	
Less Rhetorical								
Score 3 (OF)	11	9	2	1	8	11	0	42
Fe	6	6	6	6	6	6	6	
Very Less Rhetorical								
Score 2 (OF)	0	2	0	1	4	0	0	7
Fe	1	1	1	1	1	1	1	
Bad Rhetorical								
Score 1 (OF)	0	0	0	0	2	2	0	4
Fe	0.5714	0.5714	0.5714	0.5714	0.5714	0.5714	0.5714	
Amount	100	100	100	100	100	100	100	700

Table 5. Contingency & chi square observation

Variables	Conn Str	Govern	Past Perf	Future Pros	Conn Dept	Six <IR> Cap	Cont El <IR>	Amount
	-28	-24	-24	7	19	17	33	
	784	576	576	49	361	289	1089	
Xo Observation	14	10.2857	10.2857	0.875	6.4464	5.1607	19.4464	35.4464
	19.4285	2.42857	20.4285	1.42857	-14.5714	-7.5714	-21.5714	
	377.4693	5.8979	417.3265	2.0408	212.3265	57.3265	465.3265	
Xo Observation	16.7233	0.2613	18.4891	0.0904	9.4068	2.5397	20.6157	35.5641
	4.8571	17.8571	8.8571	-3.1428	-11.1428	2.8571	-4.1428	
	23.5918	318.8775	78.4489	9.8775	124.1632	8.1632	17.1632	
Xo Observation	1.6681	22.5468	5.5468	0.6984	8.7792	0.5772	1.2135	30.4603
	5	3	-4	-5	2	5	-6	
	25	9	16	25	4	25	36	
Xo Observation	4.1666	1.5	2.6666	4.1666	0.6666	4.1666	6	12.5
	-1	1	-1	0	3	-1	-1	
	1	1	1	0	9	1	1	
Xo Observation	1	1	1	0	9	1	1	14
	-0.5714	-0.5714	-0.5714	-0.5714	1.4285	1.4285	-0.5714	
	0.3265	0.3265	0.3265	0.3265	2.0408	2.0408	0.3265	
Xo Observation	0.5714	0.5714	0.5714	0.5714	3.5714	3.5714	0.5714	10
Amount				X2 Observation				137.9709
				X2 table				43.77
				N				700
				C Contingency				0.4057

Hypothesis testing is to assess the level of relationship between the variables from the different test results (H01). By calculating the value of the Pearson contingent coefficient ($C = \sqrt{XO2/(N + XO2)}$). Based on the data in Table 5 (appendix- Contingency & chi square observation), the value of $C = \sqrt{137.97/(700 + 137.97)}$ is obtained = 0.4057. Referring to Guilford's empirical rule, it shows that the C-contingency value is a bounded association coefficient between $0 < 1$, where: 0 = no association/relationship, and 1 = perfect association/relationship. contingency C of 0.4057 can be expressed as "moderate correlation." These results indicate that there is a significant relationship with moderate correlation in the performance of the regional investment potential information system (ISRIP) through integrated thinking for completeness of information on six capital <IR>, and with strategic communication in enhancing the role of ISRIP.

5. Concluding Remarks

The results of this study gave evidences form the basis for the coherence of an integrated thinking model that is in line with integrated thinking in the management of communication of regional investment units. The results of this study are empirical facts about the role clarity (future prospects, connected functional departments, implementation of six capital <IR> for ISRIP, and implementation for ISRIP strategic communication) in ISRIP implementation. These empirical facts are in line with a number of studies related to the integrated reporting aspect in creating value over time [30], [20], [31], [38], [32], [33], [34], [36]. The results of this study are also in line with Ratnatunga and Jones [29] in communicating the five bottom line theory of reporting with the reporting index criteria. Then with moderate results, where the empirical facts from aspects (connecting strategy, governance, and past performance) which have relatively low achievements in strengthening ISRIP performance, show alignment with the study perspective [37]. However, the results of the study provided moderate empirical facts that investment management has a relationship with a social contract perspective related to its decisions, with the theory of legitimacy and stakeholders in environmental control through an organizational reporting approach [9], [35].

In the context of managing Indonesia's regional investment for the ASEAN and global environment, it is necessary to implement the functions and roles of ISRIP [4][5]. This system is implemented formally by complying with national regulations (Law No. 25 of 2007). The functions and roles of ISRIP are fulfilled in relation to the suitability of the investment communication approach with the agreement in the AEC [43]. Because Indonesia is a member of the ASEAN Community and the integration of the AEC, investment management in the Indonesian region

must be related to the ASEAN Comprehensive Investment Agreement (ACIA). This step is also in line with investment policies in the integration of development priorities and sectors for investment [43]. Furthermore, investment management within regional, however, should obey to enhance within compliance of the SDGs [7].

This study has limitations regarding the use of nominal scale measurement. Therefore, next research is needed with elevating the of the measurement scales, also with expanding the research sample. With the support of a more comprehensive study, a regional investment management policy should be able to receive input in a more substantive and massive manner.

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