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How the Clarity of Business Vision Affect the Quality of Business Intelligence Systems and It's Impact on the Quality of Decision Making (Evidence from North Sumatera-lndonesia)

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Abstract: Previous researchers conducting research on business mtelligence systems and decision-making. This study aimed to examine the effect of clarity of business vision on quality of business intelligence systems and its impact on quality of decision making at financial institutions in North Sumatra-Indonesia_ The survey was conducted on 54 operational managers of financial lllStitutions to collect information and to test the hypothesis of the study. Data was collected using questiotmaires. The analysis method used single regression analysis while hyJX!thes!S testing used t-test. Results of this study shown the clarity of business VISion have significant effect on the quality of business intelligence system. Besides, the quality of business intelligence system have significant effect on the quality of decision making_

Key words: Clarity, business vision, quality, business intelligence system, decision making

INTRODUCTION

Business Intelligence is the subject of an extensive discussion m the literature. The Implementation of a Busmess Intelligence (BI) system is a complex undertaking requiring considerable resources (Yeah and Korornos, 2010). Furthermore, the mam purpose of business intelligence systems is to provide knowledge workers with tools and methodologies that allow them to make effective and timely deciSions (Carlos, 2009). Moreover, BI helps a company create knowledge from that mfcumation to enable better deciSion making and to convert those decisions into action (Chuck *et al.*, 2006). Whereas, benefits of business intelligence: improved busmess efficiency and productivity, busmess relationships are enhanced, increased business value is generated and reduction of costs (Deepak, 2006) The previous researchers have tested the critical factors affecting the business intelligence systems and its rmpact on decision making. This study armed to examme the effect of clarity of business vis1on on quality of business intelligence systems and its impact on quality of decision making at financml mstitutions m North Sumatra-Indonesia.

Literature review

Clarity of business VISion: According to Jones and Gomes a VISion IS a picture of the future. Wijk (2005) state that company's business vision is a statement that decribes the company as it wishes to be in the future. Further, Culp state that VISion defines the desrred or intended future state of organization A vision for a finn 1s regarded as the ideal future state of the total entity. It is a mental image of a possible and desirable state of the finn. Furthermore, Carpenter and Gerard (2007) state, statement of vision is forward looking and identifies the finn's desired long-term

Based on some previous statement, it can be concluded that business vision is a simple statement about the picture of the ideal state of a desired company m the futme be rmderstood by all people in the company as well as their commitment and their motivation to achieve it.

Goal or VISion clarity refers to the precision and detail of the objective (Lynn *et al.*, 2000)_ A clear vision provides the foundaTion for developmg a comprehensive mission statement (David, 2011). According to Stacey (2011) state the word c'vision" is usually taken to mean a picture of a future state for an organisation, a mental image of a possible and desirable future that is realistic, credible and attractive. Fitzroy and Hulbert (2005) state that a VISion needs to be realistic, credible and attractive and should provide a bridge from the present to the futme.

Collins and Porras (1996) state the critical point is that a vision articulates a view of a realistic, credible, attractive future for organization, a condition that IS better in some important ways than what now exists. Furthermore, Madu (2013) explaned that a realisTic VISion means should be relevant to organizatioal goal and achievable, credible vision means having believed could lead to a better future wlule attractive VISion to lllSprre and

motivate everyone m the organization to implement that vision. Dimensions of business vision used in this study is: realistic, credible and attractive (Stacey, 2011; Fitzroy and Hulbert, 2005; Collm and Porras, 1996). Furthermore, mdicators used to measw-e clarity of business vision in this study is relevant to organizatioal goal and achievable, having believed could lead to a better future, 111Sp!re and motivate everyone ill the organization to implement that vision (Madu, 2013).

Quality of business intelligence system: According to Gelinas and Dull (2008) business mtelligence 1s the integration of statistical and analytical tools with decis1on support teclmologies to facilitate complex analyses of data warehouse by managers and decision makers. Laudon dan Laudon (2012) state busilless mtelligence 1s a contemporary term for data and software tools for organizing, analyzing and providing access to data to help managers and other enterprises user make more informed dec1s1on. ISs whose pUI]X!se 1s to glean from raw data relationships and trends that mJ.ght help organizations compete better are called Business Intelligence (BI) systems (Effy, 2009). Tw-ban and Linda (2011) state, busmess intelligence refers to a collection of ISs and teclmologies that support managerial decis1on making or operational control by providing information on internal and external operations. Schneider state business mtelligence systems can provide busmess decision makers with a wide variety of analyses to support decision making.

Based on some previous statement, it can be concluded that business mtelligence system JS a collection ofiSs and technologies that support managerial decision making or operational control by providing information on internal and external operations and help orgaruzations ccunpete better.

Adernala and Linus (2011) state the most obvious first chaise when ttying to discover BI success factors is to look at Information Systems (IS) in general. Bailey and Pearson (1983) use drmenswns: system access time, system flexbility, system integration and system response time. Srinivasan (1985) use dimensions: respon time, system reliabiity and ease to access. Todd state charactenstics of quality information system is reliability, flexibility, integration, accesibility and timelines. DeLane and McLean (2003) state system quality: adaptability, availability, reliability, response time and usability. Petter *et al.* (2008) explaned that system quality-the desirable characteristics of an information system. For example: ease to use system flexibility, system reliability and ease to learning as well as system features of intuitiveness, sophistication, flexibility and respon time. Gorla *et al.* (201 0) state, mdicator of system quality: flexibility and sophistication Zaied explaned that measures of system quality typically focus on performance characteristic of the system under study. In this research, the selected system quality element are: relability, usability, adaptability, trust and maintainability. Petter *et al.* (2013) state system quality considers the technical aspect of system, including convenience of access, system functionality, reliability, response time, sophistication, navigation ease and flexibility among other. 1bis study use four indicators to measure of quality of business intelligence system: flexibility, reliability, accessibility dan mtegration.

Quality of decision making: According to Haag the decision is one of the most important business activities. Moreover, McShane and Glinow, stated that declSlon making 1s the consc1ous process of making choise among alternatives with the intention of moving toward some desired state of affairs. Furthermore, Turban and Linda (2011) stated that decision making 1s a process of choosing among two or more alternative courses of action for the pw-pose of attaining one or more goals. Whereas, Carlos (2009) stated that the decision-making process is part of a broader subject usually referred to as problem solving which refers to the process through which individuals tty to bridge the gap between the current operating conditions of a system (as is) and the suwosedly better conditions to be achieved ill the futw-e (to be).

Based on the statements of the above, it can be concluded that the decision making is a conscious process that is carried out by someone m determ1Il1Ilg choice of a wide range of alternative actions to achieve the goal of moving from the present into the futw-e conditions better.

Dec1s1on quality refers to the technical aspects of a decis1on. A dec1sion JS considered to be of high quality to the extent that its concistent with the organizational goals to be attained and with potentially available information stated that the quality of decJSJOn makmg ccmstruct 1s composed of items such as: a perceived increase in the quality of decisions and reduction of the time required for decision making.

Based on the statements of the above it, this study use three indicators to measure of quality of dec1sion making, namely: concistent with the organizational goals, a perceived increase is in the quality of decisions and the reduction of the time reqwred for declSlon making.

Theoritical framework and hypotheses development

The effect of clarity of business vision on quality of business intelligence systems: Clarity of V!Slon or

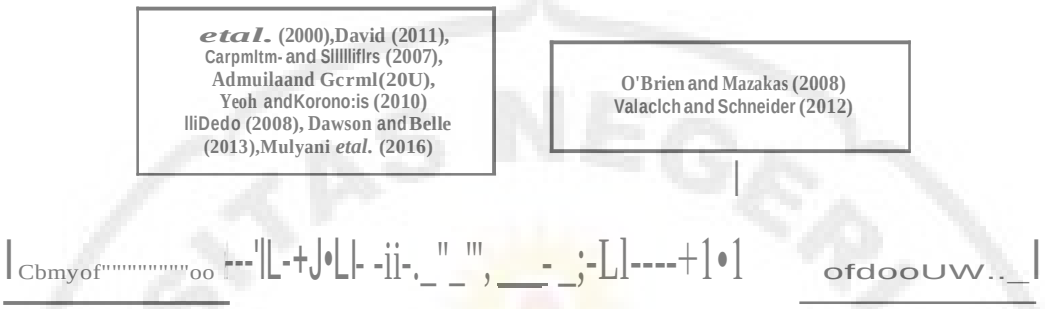

Fig. 1 The study model

purpose refers to the accuracy and the detailed objectives (Lynn *et al_,* 2000)_ A clear vision provides the basis for developmg a comprehenstve mtsston statement (David, 2011). It is difficult to execute the strategy if the vision and mission are unclear or can not be understood, a company with a clear vision and misston and widely understood find it easier to make strategic decisions (Carpenter and Gerard, 2007).

Busmess intelligence system is an information system that processes data about the internal and external operations are complex mto useful information for managers in decision making managerial or operational control more precisely so as to help organizations better compete. Adamala and Linus (2011) state busmess intelligence systems are very closely tied to the strategic vtston of the company. Yeoh and Koromos (2010) explaned if the busmess vision ts not fully understood, it will eventually affect the use and the results of business intelligence systems. As a busmess mtelligence untiatives drive business so the business strategy vision is needed immediately for the implementation of business intelligence systems.

Some researchers have fotmd affect of vision or busmess vtston on informaTion systems or busmess intelligence systems such as Yeoh *et al.* (2008), Ifmedo (2008), Yeoh and Koronios (2010), Adamala and Linus (2011), Al-Busaidi and Olfman (2005), Dawson and Belle (2013) andMulyani *et al.* (2016).

The effect of quality of business intelligence systems on quality of decision making: O'Brien and Marakas (2008) stated that information system also help store managers and other business professionals make better decisions.

ValacJCh and Christoph (2012) stated that busmess intelligence systems can provide business decision makers with a wide variety of analyses to support decision making. Negash stated that a busmess intelligence system can improve the timelines and quality of the mput to the declSton making process. Some previous researchers have found affect of quality of business intelligence systems on the quality of decision makrng such as Danna. Based on the descnption m the above framework, the model of this study can be seen as follows (Fig. l)' furthermore, the hypothesis proposed in this study are as:

- The clarity of busilless vtston have effects on the quality of business intelligence system
- The quality of business intelligence systems have effects on the quahty of dectston making

MATERIALS AND METHODS

This study use explanatory survey method. The population ill this study mclude operational managers of financial insitution at North Sumatera Indonesia. The companies chosen in this study have been implementing busilless intelligence system application. The partictpants of the study were operational managers. Eighty questionares were distributed to the numbers of the sample, 54 questionares were retuJned and used ill the statistical analysis. The instrument used for the collection data was a questionare. The questionare mcluded 3 dimensions: clarity ofbusmess vision, quality of business intelligence systems and quality od decision making. This study used a Likert ftve point scale ranges from "strongly disagree" to "strongly agree" to examine participants responses to questionnaire statements The questionnaues to be used previously tested for validity and reliability. Furthermore, the analysis method used stmple regresston analysts while hypothests testmg used t-test. All analyzes were performed using the program statistical product and service solutions

RESULTS AND DISCUSSION

Recapitulation validity test results on research instrument (questiOllllaire) can be seen in Table 1. From Table 1 shows coeffictent values for all varmbles the

Tabell: Recapitulation validity of test results

	COJTected item total cOJTelation	Validity Critical R	Explanation
Chlrlty ofbusJness vlsJon			
CBV1	0.561	0.2681	Valid
CBV2	0.815	0.2681	Valid
CBV3	0.549	0.2681	Valid
CBV4	0.661	0.2681	Vahd
CBV5	0.762	0.2681	Valid
CBV6	0.685	0.2681	Valid
CBV7	0.325	0.2681	Valid
Qulli1ty ofbusJness lnteillgeuce system			
QBIS1	0.683	0.2681	Valid
QBIS2	0.749	0.2681	Valid
QBIS3	0.524	0.2681	Valid
QBIS4	0.697	0.2681	Val1d
QBIS5	0.317	0.2681	Valid
QBIS6	0.641	0.2681	Valid
Quality of decision making			
QDM1	0.928	0.2007	Val1d
QDM2	0.787	0.2007	Valid
QDM3	0.928	0.2007	Valid
QDM4	0.563	0.2007	Valid
QDM5	0.928	0.2007	Val1d

Tabel2: Recapitulation reliability oftestresuhs

Variabels	Cronbach's alpha	Critical point	Explanation
Clanty ofbusiness vision	0.854	0.700	Rehable
Quality of business of intelligcme sy&em	0.820	0.700	Reliable
Quality of decision making	0.927	0.700	Reliabel

Table 3: Coefficients

Model	Unstandardized coefficients (B)	SE	Starmdardized coefficients (Il)	t-values	Sig.
Constant	8.409	2.267		3.709	0.001
Clarity of business	1.361	0.310	1.518	4.394	0.000 vision

Dependent variable: quality of business intelligence system

overall shldy is greater than the value ofr (table= 0.2681). Tills means that the whole pomt statement has good validity so that the data collected can be analyzed at a later stage_ Ecapitulation reliability test results with Cronbach's alpha on research IllStrument (questwnnarre) can be seen in Table 2. From Table 2 above shows the value of the coefficient of reliability for the entire variabel tested also above the critical point of 0.70. This means that the questionnaire used to have good reliability so that it can be concluded that the data collected m tlus study is reliable and can be used for analysis stage. The result of simple regression analysis between business VISion with mfonnation systems can be seen m Table 3. Based on Table 3 can be composed of multiple regression equation as·

$$QBIS = 8.409+1.361\ CBV+e$$

The slllple regresswn equation above can explam the role of clarity of business vLSion on quality of busmess

Table 4: Model summmy

Model	R	R'	AdjustedR^2	SE of the estimate
I	0.525	0.275	0.247	3.23551

mtelligence systems as seen from the magnitude of the regression coefficients. The above equation shows that the regression coefficient clarity of business vision of 1.361. Furthermore to measure ability of model to explam effects of clarity of business Vlsion on quality of business intelligence systems seen from the magnitude of the coefficient of detennination (R^2) as shown in Table 4_ The Table 4 shows the value of R^2 of 0.275 means ability of clarity of business vision m explainmg quality of business intelligence systems of27.5% while 72.5% of independent variables described other variables that are not included m this study.

The hypothesLS testing of effect the clarity of business vision on quality of business intelligence systems can be seen from the significance values_ Table 4 shows the s gniftcant value of clarity of the business vision of 0.000<0.05, so that it can be concluded H, rejected or H, accepted. This conclusion means that the clarity of business vision have significant effect on the quality of business mtelligence systems. If the clarity of business Vlsion mcreases, it will improve the quality of business intelligence systems. In other words, improving the clarity of business vision lead to improved the quality of busmess mtelhgence systems.

The effect of the clarity of business vis1on on the quality of the business intelligence system depends on the extent to which management can realize the VISion of the strategy in accordance with the conditions of the company. Business intelligence systems are very closely tied to the strateglC vision of the company (Adamala and Linus, 2011). As business intelligence initiatives for busmess dnven so that the VISion of the busmess strategy is needed immediately for the implementation of business intelligence systems (Yeoh and Koronois, 2010)_ Based on the VISion strategy will then be des gned business intelligence system that fits the needs of comparues

Results of this study support prevwus studies that stated there clear business vision effect on business mtelligence systems such as research by Yeoh *et al*. (2008), Ifinedo (2008) Yeah and Koronios (2010), Adamala and Linus (2011), Dawson and Belle (2013)_ Furthermore, the results of srmple regression analysts between quality of business intelligenc systems and quality of decision making can be seen in Table 5_ Based on Table 5 can be composed of simple regression equation as:

$$QBIS = 8.477+0.290\ QDM+e$$

Table 5: Coefficients

Model	Unstandardized coefficients (B)	SE	Stanndardized coefficients (J3)	t-values	Sig.
Constant	9477	I 591		5.327	0.001
Clarity of business vision	0.290	0.106	0.355	2.741	0.000

Dependent variable: quality of decision making

Table 6: Model summary

Model	R	R^2	Adjusted R^2	SE of the estimate
I	0.355	0.126	0.109	2.S7412

The slllple regression equation above can explain the role of quality of business intelligence systems on quality of dectston making as seen :Ercun the magnitude of the regression coefficients. The above equation shows that the regression coefficient of quality of business intelligence system of 0.290. Furthermore to measure ability of model to explain effects of quality of business mtelligence systems on quality of dectston making seen from the magnitude of the coeffictent of determmation (R') as shown in Table 6_

Table 6 shows the value of R^2 of0.126 means ability of quality of business intelligence systems in explaining quality of decision making of 12 6% while 87_4% of independent variables described other variables that are not included in this study. The hypothesis testing of effect the quality of business mtelhgence systems on the quality of dectsion making can be seen from the significance values Table 6 shows the significant value of the quality of business mtelligence system of 0.008<0.05 so that, it can be concluded H, rejected or H, accepted This conclusion means that the quality of business intelligence systems have a significant rmpact on the quality of decision making. If the quality of busmess intelligence systems mcreases, it will rmprove the quality of deciston-making.

In other words, improving the quality of business mtelligence systems lead to llllproved quelity of decision-making. Carlos explained if decision makers can rely on a business intelligence system facilitating their activity we can expect that the overall quality of the decision-making process will be greatly improved Results of this study support prevwus studies that stated quality of business intelligence system effect on quality of decision making such as research Wieder_

CONCLUSION

This study aimed to examine the effect of clarity of business vision on the quality of business intelligence systems and its llllpact on the quality of dectsion making at financial institutions inNorth Sum atera Indonesia_ The results this study shown the clarity of business vision have stgnificant effect on the quality of business mtelligence systems. Bestdes, the quality of busmess intelligence system have significant effect on the quality of dectswn making.

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