

The Influence of Environmental Uncertainty, Organizational Structure, and Information Technology on Management Accounting Information System and Its Impact on Managerial Performance (Survey On People's Credit Banks (BPR) in Pontianak City).

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ABSTRACT

Background of this research is not quality management accounting information system found in organizations especially in BPR. The purpose of this research is to know the influence of environmental uncertainty, organizational structure, and information technology on management accounting information system and its impact on manager performance in BPR. This research uses quantitative research approach and explanatory survey method. The target population in this study are 9 (Nine) People's Credit Banks (BPR) in Pontianak City. Each BPR is drawn by 4 respondents: directors, accounting managers or accounting chiefs and accounting staff. The data used are primary data and secondary data. Testing Data, with Test of Validity and Test of Realibility. Research Analysis, used Structural Equation Modeling (SEM) for small sample with Partial Least Square (PLS) approach using Smart Software PLS 1.0 assistance. The results of the research are 1) Environmental Uncertainty, Organizational Structure and Information Technology have a significant positive effect on Management Accounting Information System; 2) Management Accounting Information System has a significant positive effect on Managerial Performance; 3) The most dominant construct affecting the Management Accounting Information System constraint are the uncertainty of the Environmental uncertainty with the path parameter coefficient of 0.426 and T-Statistics 5,699; and 4) Environmental uncertainty, Organizational Structure and Information Technology effect on Managerial Performance with mediated by construct Management Accounting Information System.

Keywords : Environmental Uncertainty, Organizational Structure, Information Technology, Management Accounting Information System, and Manager Performance.

I. INTRODUCTION

In the framework of professional management of organizations, companies need information systems designed to assist organizations in the face of competition. Azhar Susanto (2008: 52) explains that the information system is a collection of sub-systems both physical and non-physical are interconnected with each other and work together in harmony to achieve a goal that is processing data into useful information. As one component in one company then the information system should be able to interact well and harmoniously with various other components within the company. Therefore, companies must design and implement information systems in accordance with the conditions of the company. To be an effective and

profitable company in the international market, companies need strong information and communication systems (Laudon & Laudon, 2005: 5). Information systems are developed to support business activities at all levels of the organization. Therefore, the information system must be accepted and used by all employees in the organization (Laudon & Laudon, 2005: 6). A company's user information system consists of internal users and external users. Internal users of the information system will use the information as a basis for decision making (Azhar Susanto, 2004: 72).

The development of information technology resulted in the business environment has changed rapidly, this environmental change resulted in companies have to

make adjustments to these changes. The change is primarily a condition of volatile environmental uncertainty. Under conditions of high environmental uncertainty, information is a very useful tool in the process of planning and control activities within an organization. A reliable accounting system can be shown adequately or not by the system in providing timely and relevant information, according to different information needs. Thus it can be said that the level of environmental uncertainty will affect the level of availability of information provided by the accounting system. Environmental uncertainty has been identified as a variable that may affect managerial performance (Gul and Chia, 1994; Chong and Chong, 1997). To overcome problems arising from high levels of environmental uncertainty, managers need reliable accounting management information systems (Chenhall and Morris, 1986; Gul and Chia, 1994; Chong and Chong, 1997). According to Chenhall and Morris (1986), useful information based on managers' perceptions for decision-making is information that is broad, timely, aggregated, and integrated. Several studies have been conducted to examine the effect of management accounting information characteristics on managerial performance by considering environmental uncertainty. The results of research conducted Gordon and Narayanan (1984) provide an explanation that the availability of reliable management accounting information will improve managerial performance on conditions of environmental uncertainty. Mia and Chenhall (1994), suggested that the characteristics of reliable management accounting information will improve performance. While research Gul and Chia (1991) gives results that environmental uncertainty correlates the influence between the characteristics of accounting information with managerial performance. Organizational structure must be designed in such a way as to support the achievement of corporate goals. In designing the organization needs to be adapted to its environment (Luthans, 2002). A way to reduce environmental uncertainty is through adjustment to the organizational structure (Robbins and Coulter, 2005). The organizational structure can give an idea of the division of authority within the organization. The organizational structure generally consists of centralization and decentralization. In centralized systems most decision-making powers are centralized by top managers, so middle or subordinate management only performs operational activities. While decentralization shows that top management

delegates authority and responsibility to managers at a lower level, and the delegated authority is in the form of decision-making.

In today's business globalization demands banking companies to utilize the existing capabilities as much as possible in order to excel in the competition, not least the BPR, some weaknesses owned by banks, especially the BPR that is a less effective supervisory system of the central bank has not been able to keep up with the rapid and complex banking operations, relatively weak managerial ability in banking, lack of transparency of information about banking condition. Some of the phenomena presented by experts, which is interesting to be studied in relation to the problems of information systems that occur in the field, including: Agus Procoyo, said that the condition of information system security of 56 (fifty six) companies observed only 4 companies or 7% who have written security policies and procedures. This condition causes the output of information system is still not accurate (Agus Procoyo, 2003). Richard Kumaradjaja, the use of information technology in the management of human resources (HR) is increasingly critical and many are not yet integrated and have not produced accurate data (Richard Kumaradjaja, 2009).

Regional Banking Developments In quarterly terms, West Kalimantan's banking assets during Q1 / 2011 grew slower compared to Q4 / 2010. MKM lending in the first quarter of 2011 grew by 3.43%, slowing compared to the previous quarter. A RB is a bank financial institution that accepts deposits only in the form of time deposits, savings, and / or other forms imposed with it and disbursed funds as a BPR business. The function of BPR is to collect and channel public funds and aims to support the implementation of national development in order to improve equity, economic growth, and national stability towards improving the welfare of the people. The objective of BPRs is to serve the needs of farmers, farmers, fishermen, traders, small businessmen, papi-ers, and retirees as these targets can not be reached by commercial banks and to further realize the equity of banking services, equalization of business opportunities, income distribution, they do not fall into the hands of the loan sharks. But interesting to be studied in the development of BPR operations in Indonesia, which

occurred in the field today is there are hundreds of Rural Banks (BPR) is now being hit by severe problems. In fact, up to semester I-2011, has 16 BPR that folded. Problems experienced by BPR-BPR is not because the capital is difficult to develop. Nor is it related to the interest charged by commercial banks in the program circles is too high. More than that, now a number of BPR was crushed by bad credit. According to BI data, as of June 2011, BPR's total non-performing loan (NPL) has reached Rp 3 trillion or 8.19% of the total out-standing credit. Mahdi Mahmudy, Deputy Director of Credit Directorate for Rural Banks and Small and Medium Enterprises of Bank Indonesia stated that the problems faced by BPR are low human resources and mismanagement. The proof, a lot of credit arrears coming from the owners, administrators, or close relatives of BPR managers. this condition is exacerbated by the lack of permodalan and fraud done by the manager. One is the provision of credit to debtors who do not actually meet the criteria (<http://ekonomi.inilah.com>). Joko Suyanto, Chairman of the Association of Indonesian Rural Banks, said that some BPRs have mismanagement because they are not careful to distribute credit. Of 1,682 BPRs, generally problematic in the business aspect (<http://ekonomi.inilah.com>). Based on the above description and phenomenon, the researcher is interested to see the effect of environmental uncertainty, organizational structure, and information technology on management accounting information system and its impact on manager performance in BPR.

II. LITERATURE REVIEW

2.1. Information System

The system consists of several parts that have characteristics similar to the main system. Part of such a system is called a subsystem. Thus the subsystem also has components, processes and objectives (Romney, 2006: 7; O'Brien & Marakas, 2008: 4; McLeod, 2007: 16). Information is a new and useful information recipient of information for companies and managers who can be used for decision making in order to face competition and achieve company goals (Laudon and Laoudon, 2005: 8; O'Brien and Marakas, 2008: 324; and Azhar Susanto, 2004: 46). A company's information system is a collection of sub-systems that aim to process data into useful information for the recipients. The main role of the information system in accordance with the above opinion is to produce information (Azhar Susanto,

2008: 52; Laudon and Laoudon, 2005: 7; Steven Alter, 2002: 6).

Basically there are 2 (two) types of information systems that exist within a company that is accounting information system and management information system (James A. Hall, 2001: 8). This is also in line with what O'Brien and Marakas (2008: 14) suggest that a company's information system consists essentially of operations support systems & management support systems. On the other hand, Bentley and Whitten (2007: 6-7) argue that the information systems that exist within a company are transaction processing systems, management information systems, decision support systems, executive information systems, expert systems, communications & collaboration systems and office automation systems. In particular, the enterprise management information system is an information system that provides information in the form of reports and is prepared for managers and various parties (O'Brien & Marakas, 2008: 15). This is similar to what is said Bentley and Whitten (2007: 6) that management information system is an information system that provides data for the interests of managers in running their business. Accounting as an information system is designed to provide information or reports for the various interests of individuals or groups about an activity / operation / economic or financial event in an organization (Wilkinson, 2003: 23). Therefore, when designing information systems, accountants consider the interests of users of the information.

2.1.1 Management Accounting Information System (MAIS)

Management accounting information system is an organizational control mechanism, and is an effective tool in providing useful information to predict the possible consequences of the activities undertaken. The results of Chenhall & Morris (1986) found empirical evidence of useful information characteristics that consist of: (1) Broad Scope, (2) Aggregation, (3) Integration, (4) Timeliness. Gordon & Nayara (1984) gives the following definitions of the four characteristics: a) Broad Scope Characteristics, has three sub dimensions: focus, quantification, and time. Focus relates to information coming from within or outside the organization, quantification relating to financial and non-financial information, and time related to estimated future events; b) Aggregation Characteristics, Aggregation characteristics or collection are summaries of information by function, time period, and decision model; c) Characteristics

Integration, integrated or integrated characteristics provide a means of coordination atar segments in sub-units or between sub-units within the organization. (Chenhall & Morris, 1986; Chia, 1995); d) Characteristics Timeliness, timeliness characteristics or timeliness have two sub dimensions, namely reporting frequency and reporting speed. Frequency relates to how often information is provided to managers. Medium speed is related to the grace period between the need for information and the availability of information (Gordon & Narayana, 1984).

2.1.2 Environmental Uncertainty

According to Duncan (1972) defines the environment as the totality of the physical and social factors that are taken into consideration in the decision making behavior of individuals in the organization. Successful organizations will always adapt to changes in their environment and proactively change their environment. Environmental uncertainty is a contingent factor that has been widely recognized by researchers in organizational design (Chia, 1990). If applied in an accounting supervision system, environmental uncertainty is measured by looking at its effect on the use of information and information characteristics. Basically, environmental uncertainty is an external condition that can affect the company's operations (Otley, 1980). This environmental uncertainty was first pioneered by Burn and Stalker (1961) and was later developed by several researchers who made it an important independent variable and with this variable making the company in a difficult position to make predictions (Govindarajan, 1984, Chenhall and Morris, 1986; and Chong, 1997; Gul and Chia, 1994).

2.1.3 Organizational Structure

The organizational structure according to Draft (1988) in Kirmizi Ritonga and Yuserrie Zainuddin (2002) is 1) the design of relationships in formal submission of reports, the design of organizational hierarchy levels and the determination of the extent of supervisory coverage; 2) consists of individuals who make up a group that can be classified into organizational units, such as departments of parts and working groups; and 3) system design that is useful for the reliability of communicating communication coordination and integration of all work activities within the organization. In a centralized organizational structure, most decision-making powers are centralized by top managers, so management at the middle or subordinate

level only performs activities. According to Nadler and Tushman (1988), the organizational structure is an organizational control tool that shows the level of delegation of top managers' authority in operational decision making. While the decentralized organizational structure shows that top management delegates authority and responsibility to managers at a lower level, and the delegated authority is in the form of decision-making. The structure of decentralization provides greater responsibility to subordinates in planning and control activities (Waterhouse and Tiessen, 1978).

2.1.4 Information Technology

Turban, et.al (1999: 19) IT is defined as the technological aspects of the Information System, including hardware, software, databases, network (network). The main components of IT include 1) hardware; 2) software; 3) Database; and 4) network. Information technology (IT) also developed in line with the development of human civilization. The development of information technology includes the development of IT infrastructure, such as hardware, software, data storage technology (storage), and communications technology (Laudon and Laoudon, 2006: 174). The development of IT not only affects the business world, but also other areas, such as health, education, government, and others. IT is one of the managers tools to cope with change (Laudon and Laudon, 2006: 14). The definition of IT is completely stated by Martin et al. (2002: 1), namely computer technology used to process and store information and communication technology used to transmit information. The definition of IT is vast and covers all forms of technology used in capturing, manipulating, communicating, presenting, and using data to be transformed into information (Martin et al., 2002: 125). The technological environment allows the company to advance its performance. IT and performance have a symbiotic relationship. IT developments that have occurred so far include the development of IT infrastructure, namely hardware, software, data, and communications (Mc Nurlin and Sprague, 2002: 11). According to Laudon and Laudon (2006: 14-15), IT infrastructure consists of hardware, software, data storage (storage), and communication technology. Some authors classify storage technology into hardware components so that IT components consist of hardware, software, and communications (McLeod and Schell, 2004: 101-123; Mescon et al., 2002: 213- 219).

2. 1.5 Managerial Performance

Mahoney et al. (1963) performance is the work that can be achieved by a person or group of people within an organization, in accordance with the authority and responsibility of each, in order to achieve organizational goals. Managerial performance is the performance of individual members of the organization in managerial activities, among others: planning, investigation, coordination, staffing, negotiation, and others. Managerial performance will be assessed after being familiar with the application of SAM information within the organization. This research proposes an assumption that an organization's performance appraisal can be done after decision-makers have implemented what the organization's plans have been. Organizational performance is achieved if the organization as a whole has achieved the goals the organization wants to achieve. This study describes the performance appraisal used by Mahoney (1986). According to Mahoney there are eight personal managerial assessments and one overall performance dimension that includes: 1) Performance Planning, determining objectives, policies, actions or execution, scheduling work, budgeting, planning, and programming; 2) Performance Investigation, collecting and preparing information for records, reports measuring results, and analyzing work; 3) Coordinating Performance, exchanging information with other parts, to develop a program and its relationship with other managers; 4) Performance Evaluation, assessing and measuring decisions taken, examination of financial statements and services to users of communications services; 5) Performance Supervision, directing, leading, guiding, explaining all applicable rules, giving and handling grievance execution duties subordinate; 6) Performance of Staff Arrangements, maintaining the labor force in its part, recruiting, placing, promoting, and editing employees; 7) Negotiating Performance, performing managerial performance or entering into an agreement contract for goods or services, purchasing, and bargaining; and 8) Performance Representatives, meeting with representatives of other companies and promoting the company's general objectives.

2.1 Framework Theory

2.2.1. The Influence of Environmental Uncertainty on Management Accounting Information Systems (MAIS)

Chenhall and Morris (1986) suggest that environmental uncertainty has been identified as an important contextual variable, since this variable causes management planning and control activities to be more difficult. The study also concluded that environmental uncertainty significantly positively correlated with broad scope and timeliness characteristics whereas organizational independence significantly positively correlated with broad scope and integration characteristics. The results of Gul's (1991) study support the contingency relation that management accounting systems in this respect relate to the characteristics of sophisticated management accounting information strongly supporting managerial performance in situations of high environmental uncertainty but hindering managerial performance in low environmental uncertainty situations. When conditions of high environmental uncertainty occur, managers will need the characteristics of management accounting information sufficient to address the problems that arise effectively. This will occur if there is a suitability between high environmental uncertainty and the characteristics of management accounting information sufficient to achieve a good managerial performance. Gordon and Narayanan (1984) conducted a study of senior level managers from 34 companies in the states of Kansas and Missouri. The study finds that decision makers who experience greater levels of environmental uncertainty will tend to seek external information, non-financial information and supporting information to add other types of information. In other words, the broad characteristics of information are felt to be crucial by decision makers facing high environmental uncertainty. From the above description shows that the company's managerial performance is influenced by the interaction between environmental uncertainty with the characteristics of management accounting information. At a time when companies face high environmental uncertainty managers will need management accounting information that has broad scope, timeliness, aggregation, integration characteristics.

2.2.2. The Influence of Organizational Structure on Management Accounting Information System (MAIS)

Management accounting information systems as providers of information needed by managers and employees in performing their primary functions need to be tailored to other variables such as environmental

uncertainty, organizational structure (Gordon and Narayanan 1984, Chenhall and Morris 1986). Chenhall and Morris (1986), argue that appropriate organizational structures can respond to the uncertainties facing organizations by encouraging managers to defer their parts according to their subunit environment. These managers will have more authority in making or making decisions to develop their goals and management styles, such as encouraging managers to develop special skills in overcoming uncertainty so that performance will increase (Chenhall and Morris, 1986). Robbins (2003) states that the organizational structure is how the job tasks are formally divided, grouped and coordinated. Furthermore Duncan (1972). To respond to these uncertainties there needs to be an appropriate structure (Chenhall and Morris, 1986).

2.2.3. The Influence of Information Technology on Management Accounting Information Systems (MAIS)

Computer technology is one of the information technology that much influence on the organization's information system because with computer-based information system information can be presented on time and accurate. As stated by Hansen and Mowen (1997) with the use of computers a large amount of useful information can be collected and reported to managers immediately. What happens in different parts can be known in an instant. This allows management to make decisions more quickly. Information technology can also be used for work integration, be it vertical or horizontal integration (Martin et al., 1994), information technology can help companies obtain competitive information (McLeod, 1995). Information technology can present information in useful form and can be used to send information to other people or to other locations (Haag and Cummings, 1998). Christiansen and Mouritsen (1995) From the above opinion that information technology can affect the characteristics of MAIS.

2.2.4. The Influence of Management Accounting Information Systems on Managerial Performance

Management requires adequate information for decision making. Sufficient information is information that has the characteristics of broad scope, timeliness, aggregation, integration management required in support of the best decision making. Chenhall and

Morris (1986) say that according to managers' perceptions, the characteristics of management accounting information systems are beneficial to managerial performance. Bromwich (1990) argues that a management accounting information system can help companies meet the challenges of a competitive market that focuses on increasing the company's added value to exceed its competitors and help managers monitor their company's performance in a competitive environment. Management accounting information system as one of the accounting management products plays a role in helping to predict the possible consequences of various alternative actions that can be done on various activities such as planning, controlling, and decision making. The characteristics of the information available within the organization will be effective if it can support the information user or decision maker. The suitability of information to the needs of decision makers will improve the quality of decisions to be taken, and ultimately can improve the performance of the company (Gerloff, 1991) and in line with Gerloff's research are Mia and Chenhall (1994); Chia (1995); Chong and Chong (1997); Mia & Clarke (1999).

Framework

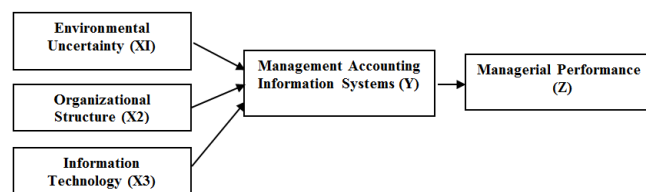


Figure 1

2.4. Hypothesis

Hypothesis 1: There is an influence between environmental uncertainty, organizational structure and information technology either partially or simultaneously on management accounting information systems.

Hypothesis 2: There is influence of management accounting information system on managerial performance

Hypothesis 3: There is an influence of environmental uncertainty, organizational structure and information technology on managerial performance mediated by constraints of management accounting information systems.

III. RESEARCH METHODS

This research uses quantitative research approach and uses explanatory survey method, because it explains the causal and correlational relationship between variables through hypothesis testing.

3.1 Operationalization of Variables

1. Environmental Uncertainty (X1)

The technique / measurement tool used to convert qualitative data from questionnaire into quantitative data is Summated Rating Method: the Scale Likert, which is an ordinal scale scale. Questionnaires were given in 5 (five) response responses. With the research variables are 1) Environmental Uncertainty (X1), perceived environmental uncertainty (PEU) variable defined by Gordon and Narayanan (1984) as managers' perceptions of the environment they encounter and can affect the companies they work for. Perceptions related to environmental uncertainty were measured using instruments developed by Gordon and Narayanan (1984). Dimensions are Stability of external and internal environment. With the indicator consist of 8 items that is 1) new potential market share; 2) Excellence of product issued; 3) Services to customers; 4) Availability of facilities and infrastructure; 5) Implementation of the latest laws and regulations; 6) Economic and political conditions; 7) Employee welfare; 8) Technological developments (Duncan (1972), Chong and Chong (1997), Muslimah (1998), and Mardiyah and Gudono (2001).

2. Organizational Structure (X2)

It is the level of authority delegation (Gordon and Narayanan (1984), Gul and Chia (1994) .The organizational structure uses the instruments developed by Gordon and Narayanan (1984).) Questions are asked to find out how far the decision is delegated from top manager to middle manager 4 dimensions that is 1) development of new service products; 2) owned human resources; 3) employee education; and 4) employee training. With 5 item indicator with 5 questions that is a) Having adequate human resources; b) Formal education owned by employees; c) Understand and implement task descriptions; d) Training periodically; and e) Availability of information. Using a five (5) Likert scale.

3. Information Technology (X3)

Information technology used to process data, including processing, obtaining, compiling, storing, presenting, and manipulating data in various ways to produce accounting information (Turban, 1999; Laudon and Laoudon 2006). Information technology is measured using the instrument proposed by Turban, et. al (1999) ie with 4 dimensions of collecting, delivering, storing, and communicating information. Instruments in this research consists of 7 (items) with 7 questions, namely 1) IT is supported by hardware; 2) IT is supported by software; 3) IT supports accounting information systems in producing accurate and timely financial reports; 4) IT supports flexibility, efficiency, operational effectiveness of the company; 5) IT helps ensure the security and confidentiality of corporate data; 6) The accounting information generated by AIS with the help of IT can be distributed well to all the parts that require it; 7) IT can help improve the quality of service to customers and use five (5) Likert scale.

4. Management Accounting Information System (MAIS) (Y)

Characteristics of Management Accounting Information Systems (Y) (Chenhall and Moris (1986); Abernathy and Guthrie (1994); Chong and Chong (1997)). Management accounting information has four characteristics, namely information 1) broad scope (level of information availability that has broad scope characteristics, including internal, internal and future factors); 2) timeliness, level of information availability that has the characteristics of time liness (current information, time spacing between information needs and availability of information), Information needed to make decisions, and Information online through information systems, reports are presented periodically; 3) aggregation, with indicator that is a) level of information availability having characteristic aggregation (function, time period and influence of organization activity); b) Information available from different departments; c) Receiving information periodically; d) Each section obtains information about the impact of decisions made elsewhere; e) Financial and nonfinancial information is used to carry out relevant analyzes; and 4) integration, with indicator that is a) Level of information availability having characteristic of Integration (complex, detail, information between unit / part); b) Financial and non-financial information on the achievement of short-term targets; c) Financial and non-financial information on

achieving long-term targets; d) Information about the interrelationship between the activities of part one with other parts; and e) Information is presented in detail as required. (Chenhall and Morris, 1986; and Abernathy and Guthrie, 1994). Instruments in the study consisted of 15 questions. Each question uses Likert scale. Respondents were asked to show the level of availability of management accounting information within the company by selecting 1 to 5.

5. Managerial Performance (Z)

The ability of managers to make decisions, plan, and achieve targets (Mahoney, 1963); Gul and Chia, 1994); Gul, 1991; and Chong and Chong, 1997). This variable was measured using an instrument developed by Mahoney et al. (1963). Instruments in this study is a self rating instrument consisting of six personal dimensions and one dimension of work as a whole. The six dimensions of performance consist of dimensions 1) planning; 2) coordination; 3) evaluation; 4) supervision; 5) staff; and 6) representatives; 7) overall performance evaluation (Gul, 1991; Chong and Chong, 1997). Respondents were asked to measure their own performance by choosing a scale of 1 to 5.

3.2. Population & Sample

Target population in this study are 9 (Nine) rural banks in Pontianak, namely 1) PT. BPR Centradana Kapuas; 2) PD. BP Pontianak City; 3) PT. BPR Perdana Lintas Khatulistiwa; 4) PT. BPR Universal Karya Mandiri Tangerang; 5) PT. BPR Dana Wira Buana; 6) PT. BPR Sukadana Prima Makmur; 7) PT. BPR Cemerlang Kapuas; 8) PT. BPR Prima Multi Makmur; and 9) PT. BPR Cahaya Wiraputra (Bank Indonesia, 2011). Each bank is drawn by 4 respondents ie directors, accounting managers or accounting chiefs and accounting staff at rural banks that have implemented management accounting information systems for computer-based billing systems and have been in operation for one accounting period. The data used are primary data and secondary data. Testing Data, with Test of Validity and Test of Reliability. Data analysis, the measuring scale of the data obtained from the data collection is ordinal, then for the purposes of data processing the measuring scale of the data will become an interval scale using the method of MSI (Method of Successive Interval). Research Analysis, used Structural Equation Modeling (SEM) for small sample with Partial Least Square (PLS) approach using Smart Software PLS 1.0 assistance. Partial least square is a statistical technique that

generalizes and combines factor analysis, principal component analysis (PCA) and regression analysis, through a separate (partial) estimation procedure between the indicator and its latent variables.

IV. RESULT AND DISCUSSION

4.1. The Influence of Environmental Uncertainty, Organizational Structure and Information Technology on Management Accounting Information System and Its Impact on Managerial Performance.

Evaluation of Measurement Model (Test of Validity and Reliability)

The structural equation model using the PLS does not assume any particular distribution for parameter estimation, so parametric techniques for testing the significance of parameters are not needed (Chin, 1998). Evaluation of the PLS model is based on prediction of non parametric properties. Outer models are often also called outer relations or measurement models that define how each indicator block corresponds to its latent variables. There are three methods used to evaluate the outer model with reflexive indicators, namely convergent validity, discriminant validity and composite reliability for the indicator block. Whereas outer model with formative indicator is evaluated based on substantive content that is by comparing the relative weights and see the significance of the weight size (Chin, 1998).

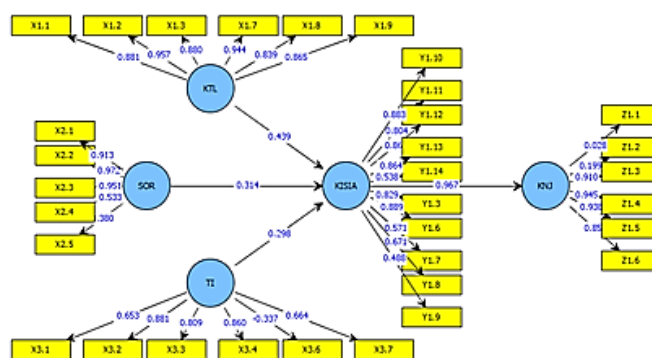


Figure 2. Diagram of Initial Model Paths on Partial Least Square using SmartPLS software

a. Convergent Validity Test

To determine whether an indicator is a constituent (latent variable) formator, a convergence validity test of the measurement model with reflexive indicator is assessed by correlation between item score and

construct score calculated with the software of SmartPLS version 1.0 for Windows. The individual reflexive size is said to be valid if it has a correlation (loading) with the constituent (latent variable) to be measured ≥ 0.5 or the T-statistic value must be ≥ 1.96 (two-sided test) at the significance level = 0.05. If one indicator has a T-statistic value < 1.96 , then the indicator should be discarded because it indicates that the indicator is not good enough to measure the constants appropriately (Ghozali, 2006). Convergence validity test results using SmartPLS can be seen in the results for outer loadings for items with reflexive indicator types and results for outer weights for items with formative indicator types. Based on convergence validity test results can be seen that there are 3 items that do not meet the criteria of convergent validity that is in the constellation of Information Technology (IT) item X3.6, on Managerial Performance constraint (KNJ) item Z1.1 and Z1.2. The 3 items in Table 4.2 are invalid because it has a value of Loading < 0.5 or the value of T Statistics < 1.96 . Because they do not meet the criterion of convergent validity, it means: The 3 items can not explain the constants to be measured so that the 3 items must be dropped from the research model and removed from the path diagram two (retest). Retesting after the indicator is omitted, through the following lane diagram.

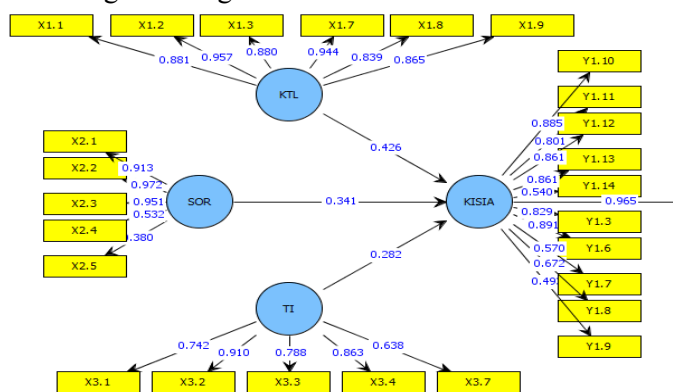


Figure 3. Final Line Diagram Model on partial least square using SmartPLS software after Invalid Item is omitted from Research Model.

Based on the results of the convergence validity test in Table 4.14, it can be seen that all items from the indicators of Environmental Uncertainty (EU), Organizational Structure (OR), Information Technology (IT), Characteristics of Management Accounting Information System (CMAIS) and Managerial Performance (MP) T-Statistics > 1.96 , meaning: The indicator or items used are valid in

measuring the Uncertainty (EU) Constraints, Organizational Structure (OS), Information Technology (IT), Characteristics of Management Accounting Information System (CMAIS) and Managerial Performance (MP).

b. Composite Reliability Test

To assess whether an indicator is truly reliable for measuring a constituent, the structural equation is performed using composite (ρ_c) or the reliability of the constants. An indicator is a good constituent builder when it has a correlation of ≥ 0.7 (Chin, 1998). Composite reliability is a measure of internal consistency that can only be used in constraints with reflexive indicators, whereas indicators with formative types are measured using the weight of the outer model. Composite reliability or compact reliability is: The method used to see how far a measuring instrument can measure certain theoretical constants that are assumed or hypothesized previously consisting of heterogeneous but similarly formed and constituent indicators. This measure is acceptable to the degree of reliability when the exogenous latent variable coefficient is > 0.70 (Chin, 1998). Composite reliability can be calculated by the following equation:

$$\rho_c = \frac{\left(\sum_{i=1}^J \lambda_i\right)^2}{\left(\sum_{i=1}^J \lambda_i\right)^2 + \sum_{i=1}^J \lambda_i \text{var}(\varepsilon_i)}$$

Where λ_i is the correlation (loading) that connects latent variables to indicators and $\text{var}(\varepsilon_i) = 1 - \lambda_i^2$. When compared with cronbach alpha the composite reliability does not assume similarity between measurements assuming all indicators are given equal weight. So ρ_c it is closer approximation assuming parameter estimation is accurate, while cronbach alpha tends to lower bound estimate reliability. ρ_c as a measure of internal consistency can only be used on constraints with reflexive indicators. Based on the results of composite reliability test, for exogenous latent variables have $\rho_c > 0.7$, means that indicators used really reliable to measure the its construction.

1. Evaluation of Structural Model (Test of significance of Parameter Path Coefficient)

Inner model is also called inner relation structural model and substantive theory that describes the relationship between latent variables based on

substantive theory. The structural model can be evaluated by looking at the value of R². Similarly, multiple regression analysis of R² on PLS serves to see how much variability of endogenous variables is explained by exogenous variables (Chin, 1998).

1) Assessment of Goodness Criteria Model PLS (R²)

- a) The value $R^2 (\eta_{2,1})$ of 0.932 means: Variation of Managerial Performance Diversity can be explained by the Environmental Uncertainty (UE), Organizational Structure (OS), Information Technology (IT), Management Accounting Information System Characteristics (CMAIS) of 93.20% while the rest of 6, 80% is explained by other variables which are not included in this research model.
- b) Value $R^2 (\eta_{1,1})$ of 0.884 means: Variation of diversity Characteristics of Management Accounting Information System (CMAIS) can be explained by the Environmental Uncertainty (UE), Organizational Structure (OS), Information Technology (IT) of 88.40% while the rest of 11.60% explained by other variables which are not contained in this research model.

2) Estimation of parameter and significance test

In SEM partial least square analysis (PLS), the path parameter coefficient is obtained through the inner weight of the model by firstly searching the T-statistic value through the bootstrap standard error procedure. Resampling is a statistical procedure that works by creating a new sample based on the characteristic description of the original sample or population. Average and standard errors are calculated for each new sample then analyzed, investigated and estimated. This resampling does not assume a particular distribution and can be used to evaluate and see the predicted power of the model under investigation. The resampling method used in the PLS for small sample cases is the bootstrap method, since the small sample has a non-distributed tendency that results in an inaccurate parametric statistic estimator.

The bootstrap method works through a resampling with replacement procedure by creating pseudodata (shadow data) using information from the original data taking into account the characteristics of the original data to obtain an appropriate statistical estimator (Efron, 1979). Criteria for acceptance or rejection of the hypothesis based on the T-Statistic score, if T-Statistic < 1,96 then

the statistical hypothesis (Ho) is accepted, meaning: latent exogenous Variabel has no significant effect on endogenous latent variables) and vice versa if T-Statistics $\geq 1,96$ then the statistical hypothesis (Ho) is rejected,, meaning: Exogenous latent Variabel significantly influence endogenous latent variables). SmartPLS software calculation results as follows. Based on the result of bootstrap estimation by using bootstrap 100 samples, 50 samples of samples with original samples of 10, obtained the coefficient values of parameters for the structural model (inner model) as follows.

- a) The value of path parameter coefficient for Environmental Uncertainty on Management Accounting Information System Characteristic (γ_{11}) is 0.426 unit with T-statistic value is 5,699 (5,699 > 1,96). Ho rejected, meaning: There is a significant direct influence of Environmental Uncertainty on Management Accounting Information System Characteristics.
- b) Organizational Structure to Characteristics Management Information System Accounting Information ($\gamma_{2,1}$) of 0.341 units with a T-statistics of 3.504 (3.504 > 1.96). H0 rejected, meaning: There is a significant direct influence of the Organizational Structure to Characteristics of Information Systems Accounting Information Management.
- c) Information Technology on Management Information System Information Management Characteristics ($\gamma_{3,1}$) of 0.282 units with T-statistics of 7,216 (6,318 > 1,96). Ho rejected, meaning: There is a direct influence that signifikan of Information Technology Characteristics of Information Systems Iformasi Accounting Management
- d) Management Information System Characteristics of Management Accounting to Managerial Performance ($\beta_{1,1}$) amounted to 0.965 units with a value of T-statistics of 98.981 (98.981 > 1.96). Ho rejected, meaning: There is a significant direct influence of Management Information System Characteristics of Management Accounting Information on Managerial Performance

Based on the path parameter coefficients obtained through inner model testing, results this study found that:

- a) Environmental Uncertainty, Organizational Structure and Information Technology have a significant positive effect on Management Accounting Information System Characteristics.
- b) Management Accounting Information System Characteristics have a significant positive effect on Managerial Performance.
- c) The most dominant constituents influencing the constraint Characteristics of Management Accounting Information System is the uncertainty of Environmental uncertainty with the parameters coefficient path of 0.426 and T-Statistics 5.699.
- d) Based on the findings above, it can be interpreted that the constants (variables) Environmental uncertainty, Organizational Structure and Information Technology effect on Managerial Performance with mediated by Constancy Characteristics Management Information System Accounting Information.

Furthermore, the obtained parameter coefficients are incorporated into the mathematical Equations as follows.

$$Y_1 = 0,426X_1 + 0,341 X_2 + 0,282 X_3$$

$$Z_1 = 0.965 X Y_1$$

Explanation:

- a) The coefficient of path parameters between environmental uncertainty and Management Accounting Information System Characteristics (γ_{11}) of 0.426, meaning: every increase of environmental uncertainty of 1 unit will result in the increase of Management Accounting Information System Characteristics of 0.426 units.
- b) The coefficient of path parameters between the Organizational Structure with Accounting Information System Characteristics ($\gamma_{2.1}$) of 0.341, meaning; Each increase of Organizational Structure of 1 unit will result in the rise of Management Accounting Information System Characteristics of 0.341 units.
- c) The coefficient of path parameters between Information Technology with Management Accounting Information System Characteristics

($\gamma_{3.1}$) of 0.282, meaning: Each increase of Information Technology of 1 stuan will result in the rise of Management Accounting Information System Characteristics of 0.282 units.

- d) Pathway parameter coefficient between Management Accounting Information System Characteristics with Managerial Performance ($\beta_{1.1}$) of 0.965, meaning: Each increase of Management Accounting Information System Characteristics of 1 unit will have an increase in Managerial Performance of 0.965 units.

V. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

1. Environmental Uncertainty, Organizational Structure and Information Technology have a significant positive effect on Characteristics of Management Accounting Information System.
2. Characteristics of Management Accounting Information System has a significant positive effect on Managerial Performance.
3. The most dominant construct influencing the constraint Characteristics of Management Accounting Information System is the uncertainty of Environmental uncertainty with the path parameter coefficient of 0.426 and T-Statistics 5.699.
4. Environmental uncertainty, Organizational Structure and Information Technology influence on Managerial Performance with mediated by Constancy Characteristics of Management Accounting Information System

5.2 Recommendation

1. For the next researcher, it is suggested to perform additional data collection techniques such as interviews, increase the number of respondents, conduct a pilot study to ensure that the items of question in the questionnaire can be understood correctly by the respondent.
2. For the next researcher, add other contextual variables that are suspected to have correlation with the characteristics of management accounting information system such as market competition, business strategy, interdependence.
3. Because this research is limited to BPR in Pontianak City only, so for researcher for further

research it is suggested to use population and sample more broadly, for example BPR exist in one particular province. So the generalization of the conclusions is wider.

4. The instruments used to measure the variables are the perception of the respondent's answer so that it will cause bias problems if the respondent's perception is different from the actual situation.
5. Data collection using survey methods sent by post contains weakness, because the questionnaire can be filled not by the expected respondents. However, in anticipation of these weaknesses, validity and reliability tests have been performed on both the sample of the experimental respondents and the actual respondents.

VI. REFERENCES

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