

## **Analysis of Factors that Affecting Cost Consciousness in Non-Profit Organizations**

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**Abstract:** *The purpose of this study was to examine the effect of formal authority structure, accounting information system characteristics, work motivation and informal authority structure to cost consciousness mediated by manager behavior in decision control and decision management. The results of this study are expected to contribute to the development of theory, especially the theory of accounting behavior and add to managerial practices in improving the effectiveness and cost efficiency through the behavior of care costs. The research data is taken from non-profit organizations that provide educational services. Questionnaires were distributed to middle managers and structural officials in educational institutions. There are 250 questionnaires sent to respondents with a response rate of 62.8 percent. The analysis was done by using a two-step approach from SEM technique with Amos. The results show that formal authority structure has a positive effect on manager behavior in decision control and decision management. Characteristics of accounting information systems have a positive effect on manager behavior in decision control and decision management. Work motivation has no effect on manager behavior in decision control and decision management. The structure of informal authority has a positive effect on manager behavior in decision-making and decision management. Decision control and decision management have a positive effect on cost consciousness. The formal structure of authority and the structure of informal authorities have proven not to affect cost consciousness.*

**Keywords:** *Formal Authority Structure, Accounting Information Characteristics, Work Motivation, Informal Authority Structures, Decision Control, Decision Management, Cost Consciousness.*

**Intisari:** Tujuan penelitian ini adalah untuk menguji pengaruh struktur kewenangan formal, karakteristik sistem informasi akuntansi, motivasi kerja dan struktur kewenangan informal terhadap kepedulian biaya yang dimediasi oleh perilaku manajer dalam pengendalian keputusan dan manajemen keputusan. Hasil penelitian ini diharapkan dapat memberi kontribusi untuk pengembangan teori, khususnya teori akuntansi keperilakuan dan memberi kontribusi terhadap praktik manajerial dalam meningkatkan efektivitas dan efisiensi biaya melalui perilaku peduli biaya. Data penelitian ini diambil dari organisasi nirlaba yang menyediakan layanan pendidikan. Kuesioner dibagikan kepada manajer menengah dan pejabat struktural di institusi pendidikan. Ada 250 kuesioner yang dikirim kepada responden dengan tingkat respon 62,8 persen. Analisis dilakukan dengan menggunakan two step approach dari teknik SEM dengan Amos. Hasil penelitian menunjukkan bahwa struktur kewenangan formal berpengaruh positif terhadap perilaku manajer dalam pengendalian keputusan dan manajemen keputusan. Karakteristik sistem informasi akuntansi berpengaruh positif terhadap perilaku manajer dalam pengendalian keputusan dan manajemen keputusan. Motivasi kerja tidak berpengaruh terhadap perilaku manajer dalam pengendalian keputusan dan manajemen keputusan. Struktur kewenangan informal berpengaruh positif terhadap perilaku manajer dalam pengendalian keputusan dan manajemen keputusan. Pengendalian keputusan dan manajemen keputusan terbukti berpengaruh positif terhadap kepedulian biaya. Struktur kewenangan formal dan struktur kewenangan informal terbukti tidak berpengaruh terhadap kepedulian biaya.

**Kata kunci:** Struktur Otoritas Formal, Karakteristik Informasi Akuntansi, Motivasi Kerja, Struktur Kewenangan Informal, Pengendalian Keputusan, Manajemen Keputusan, Kepedulian Biaya.

## **1. Introduction**

When established, an organization has a specific purpose or goal. By design, organizations can be classified into two general categories: for-profit organizations and nonprofit organizations. The nonprofit organizations are founded with the goal of providing education and healthcare services, conducting religious activities and other social activities. Unlike for-profit organizations, nonprofit organizations conduct business that is more socially oriented so that every action undertaken is not merely for profit. Profit in not-for-profit organizations is the secondary objective to ensure its survival.

For-profit organizations and non-profit organizations, each have a purpose and a goal to be achieved. Therefore, the management of an organization needs to be carried out professionally so that the purpose and objective can be obtained. Although not commercially oriented, nonprofit organizations are expected to make a profit for the development of the organization and maintain continuity of services provided to the public.

Education cannot avoid the influence of the globalization which has become a challenge. The rapid dissemination of information in the world of education affects the emergence of a collaborative establishment of schools of excellence. In big cities, 'national plus schools' that are mostly joint ventures between local capital and foreign capital are emerging. These schools are elite because they are costly. These schools incorporate international, and national plus curricula and the demand is for consumers from the upper middle economic levels. This trend is a challenge for private schools that are still managed conventionally as they continually seek to improve their institutional management.

Management of quality educational institutions cannot be separated from management functions in general, namely: planning, organizing, directing and controlling. Managerial roles should be performed by each school's administrators effectively and efficiently. School leaders, as educational work unit managers, are the people who responsible for the management of school resources, namely: human resources, students, methods, infrastructure, and markets.

Managers of nonprofit organizations, in their activities as decision makers, attempt to make the right choice of the alternatives available. All decisions are based on information, whether it is from outside or from within the organization, including financial and non-financial information. Mostly, the quality of decision management will be a mirror of the quality of accounting and other information received by management. An Accounting Information System (AIS) not only serves the function of decision management by providing information to reduce uncertainty, but it also enables decision-makers to increase the variety of alternative measures with better information quality (Kren, 1997).

AIS is part of the control system of the organization that needs attention so that it can make a positive contribution in supporting the success of the control system (Sajady et al., 2008). The use of this control system allows managers to make decisions better, control operations more effectively and enable them to estimate the cost and profitability, better to improve performance (Mia and Miah, 1996).

In a centralized model of AIS, the central leader of the institution becomes a primary AIS user because virtually all decisions related to the work program and budget fall under the authority of the central leader. In the decentralized model of AIS, its users are not only the primary leader of the institution, but it also requires the work unit managers to be allowed to use it because the principal leader of the institution is not the only decision maker; it is distributed to units that are structurally below the central level.

Accounting is a field of science that leads to the presentation of financial information, but in reality, problems that are affected by the implementation of the behavioral aspects of accounting often arise. These aspects of behavior can be demotivation in employees not included in compiling the budget, or demotivation due to changes in accounting systems and demotivation due to a lack of understanding of the system.

Growth and development of the organization depend on human resources, so people are an asset that should be improved regarding efficiency and productivity. To achieve this, organizations must be able to create conditions that encourage employees

to develop abilities and skills optimally. Therefore, the aspects of human development and motivation are the main focus of attention of the organization. High motivation will result in increased productivity and efficiency.

The setting of a decision control and decision management model in a centralized institution is different from a decentralized institution. In a centralized structure of educational institutions, the central leadership of the institution is the party concerned with the existence of the organization, but in the institution with decentralized authority structure, there are a variety of stakeholders. These parties are the central leader of the educational institution and educational work unit managers. The involvement of these parties in the decision control and decision management model is placed as the most critical in achieving the organizational survival rate, both related to the effectiveness, efficiency and overall organizational performance.

In addition to the reasons related to empirical facts stated above, this study is also conducted with a theoretical basis. Research on the influence of authority on organizational behavior is nothing new (Cyert and March 1992; Hardy and Clegg, 1999; Perrow, 1986; Pfeffer, 1992). In the accounting literature, management control systems are designed and used to legitimize and maintain authority and power, including how to perform optimal distribution of authority in the organization actors (Abernethy and Chua, 1996). However, studies that examined the effect of authority on the management control systems of authority or influence on organizational performance are still limited. Research by Pfeffer (1992) addresses the question of whether the informal power within the organization may resist efforts to implement a management information system to monitor the behavior of subordinates. Power can reject, evade, sabotage and manipulate the elements of the authority system and the implementation of an accounting information system.

Past research has shown that the structure of formal authority is an antecedent of the use of AIS (Abernethy and Lillis, 2001), but studies that examined the impact of competence in the use of AIS and the organizational behavior of the manager are still very limited. Therefore, this study aims to clarify the effect of the formal authority structure, AIS characteristics, motivation and informal authority structure on the cost

consciousness that is mediated by the managers' behavior in the process of decision making and management control.

Two variables in an organizational structure affect the use of AIS by managers in managing the organization they lead, namely formal authority and informal authority. Formal authority is derived from the decisions delegated to subordinates (Barnard, 1968) and informal authority is derived from the power of the individual within an organization (Cyert and March 1992, Kotter, 1985; Alexander and Morlock, 2000) which affects the use of AIS by the manager to manage the problems.

Based on the previous explanation, the purpose of this study is to examine the effect of formal authority structures, the characteristics of SIA, work motivation and informal authority structures on cost concerns mediated by manager behavior in decision-making and decision management processes. This research is a replication of the previous study conducted by Abernethy and Emidia (2004). Previous research conducted by Abernethy and Vagnoni (2004) is based on data collected from physician managers at major public hospitals in Italy. While this study is based on data collected from structural officials of private educational institutions in various cities in Indonesia (South Jakarta, Central Jakarta, Bengkulu, Lahat, Surabaya, Yogyakarta, Magelang, and Solo). Although educational institutions are not essentially profit-oriented institutions, however, educational institutions cannot be separated from the very competitive level of competition. One of the keys to success for educational institutions to win the competition among others is determined by the ability of leaders of educational institutions in managing and controlling costs (cost consciousness). Therefore, this research is essential especially to know the factors influencing the level of cost consciousness of the leaders of educational institutions in Indonesia.

## **2. Theoretical Framework and Hypothesis Development**

### *2.1 Theoretical Review*

In agency theory, the agency relationship arises when the owner (the principal) gives credence to another party (agent) to manage specific business and delegate

decision-making authority to the agent. As managers, agents are required to provide information about the condition of the company to the principal. One form of information given is the accounting information in the form of financial statements.

The relationship between the principal and the agent may lead to gaps in information (asymmetric information) between them, as the management is in a position to have more information about the company than the owner. As agents, managers are morally responsible for optimizing the benefits for the principals, but on the other hand, managers also have an interest in maximizing their welfare. Thus, there is a possibility of the agents do not always act in the best interests of the principal (Jensen and Meckling, 1976). Full information held by managers can trigger actions to maximize their benefits. As for the owner, it would be difficult to control effectively the actions taken by management due to the limited information they have. Hence, sometimes specific policies carried out by the management of the company without the consent of the owner (Scott, 2000).

The philosophy of agency theory holds true for organizations providing education services as a public non-profit organization in carrying out their routine activities. The philosophy of agency theory is reflected in the relationship between the head of the central institution and the managers at the work unit level. The head of the central office is the highest. The head of the central institution delegates some or all of his or her power to the manager of work units as the official budget users. Within the framework of agency theory, the head of the central office is acting as a principal and manager of the work unit who is receiving the authority to serve as an agent who will report on the execution of his duties to the head office.

The primary purpose of the educational institution is to provide a public service. It does not mean that the organization does not have a financial goal. Performance of organizations providing educational services, besides being measured by adherence to a predetermined budget, is also measured using the effectiveness and efficiency of public services offered (public spending). Conceptual skills of managers in control of decisions should be held by the manager of the work unit and structural officials in an educational environment. The essential roles of the work unit manager and structural

officials in control of decisions need to be investigated as to whether the decision has been implemented correctly. Information about revenue and expenditure in the work unit budget can be used by the central leadership to control the behavior of the manager's work unit by comparing a predetermined budget plan and budget realization.

The concept of cost consciousness is the first step of efficiency for all costs incurred to produce a product or service that is in demand by the public. Cost consciousness does not mean an act to reduce costs as low as possible, but the responsibility for every dollar spent to produce a product or service. Therefore, cost consciousness is expected to be the pattern of behavior of each manager. Shields and Young (1994) developed the concept of cost consciousness. This concept emphasizes the accountability of managers for the level of costs incurred as a consequence of their decision-making. In the long term, decisions and actions of managers have implications concerning the incurrence of costs. Therefore, a manager is expected to have control of decision management and good decision making regarding financing activities decided at the unit he leads effectively and efficiently.

Nonprofit organizations that are providers of education, the cost consciousness is an essential indicator regarding the implementation of decentralization of decision-making organization. Cost consciousness can be used to measure the performance of the education service work unit manager. The excellent performance of the work unit manager can be used as a consideration by the central leadership to give a greater delegation of authority to the manager's work unit. The higher the level of influence that the delegation of authority has on the work of the unit managers, the stronger the legitimacy of its formal decision.

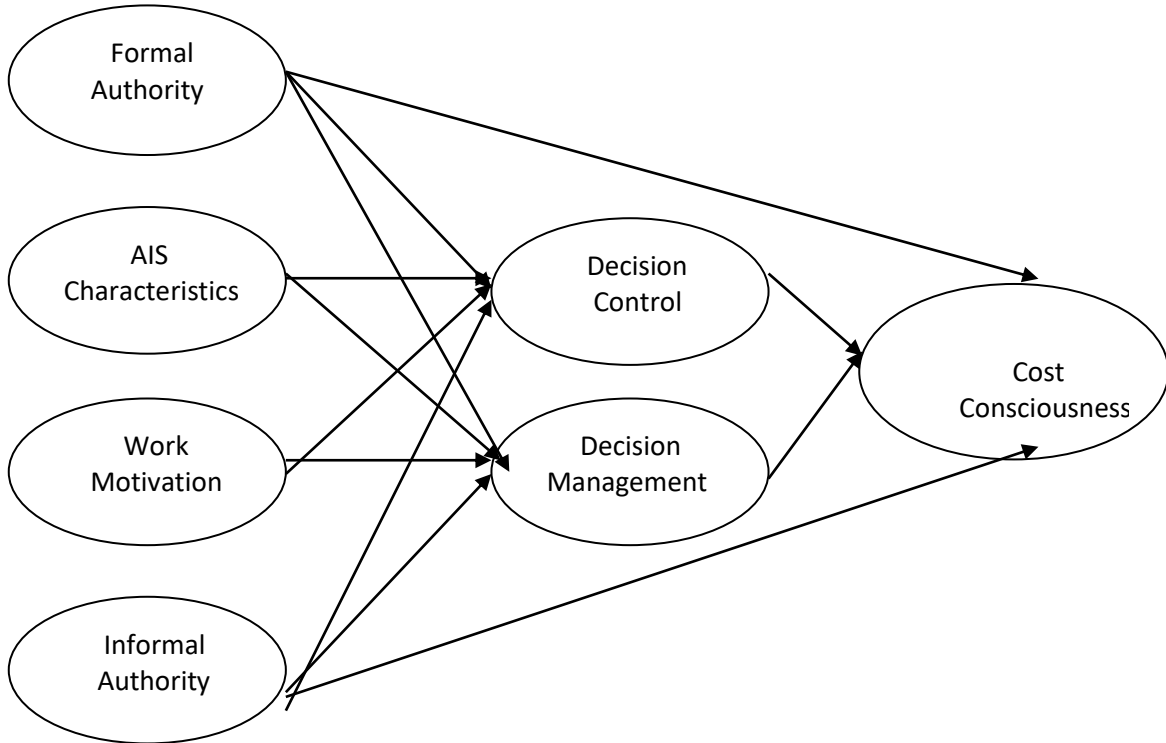
## *2.2 Theoretical Framework*

The theoretical framework that shows the relationship between the variables based on the literature review can be illustrated as follows:



Figure 1

Theoretical Framework



## 2.3 Hypotheses Development

### 2.3.1 Formal authority structure with decision control and decision management

Jensen and Meckling (1992) describe the effect of formal authority on the managers' behavior in decision control and decision management that in the context of a decision, the problem facing an organization is concerning a) determining delegated decision rights and b) control problems with the right decision that has been delegated. The two things go together. Based on economic theory-based accounting literature, it is predicted that individuals can be encouraged by their superiority in achieving a set of goals and objectives of the organization. It can motivate; one way is by giving them the right decision that followed the implementation of the control system to encourage them to act in the interests of the organization (Zimmerman,

1997; Milgrom and Robert, 1992). The approach provides several advantages, such as their performance can be measured, the contracts system can be formulated, and reward systems can be determined.

Based on the organizational theory and psychological theory, accounting literature predicted that the determination of the individual's right to make a decision would encourage the use of AIS to control lower-level managers (Abernethy and Lillis, 2001; Wruck and Jensen, 1994). In this study, the right of decision is obtained and owned by the educational work unit managers, while the right to delegate the decision is held at the headquarters of the head of the institution. From the description, then the hypothesis can be formulated as follows:

**H<sub>1a</sub>.** *The formal authority structure positively affects the managerial behavior in decision controls*

Also tested in this study is the effect of formal authority delegated to the manager at the work unit level on the use of AIS for the management and the coordination carried out by the educational institution's headquarters. Following the existing rules of the formal authority, educational work unit managers clearly understand the roles and responsibilities that must be executed and the consequences attached to their roles and responsibilities. Educational work unit managers secure the right decision for the preparation and establishment of work plans and budgets of units of work, so they become more concerned with exercising control over the budget costs realized by their work units. From this description, the hypothesis can be stated as follows:

**H<sub>1b</sub>.** *The formal authority structure positively affects the managerial behavior in decision management*

### *2.3.2 Characteristics of the AIS with the decision control and decision management*

Seen from its ability to provide information, generally, AIS has the following characteristics: a) relevant, b) timely, c) accurate, and d) the format of the information presented (Bowens and Abernethy, 2000; Chenhall and Morris, 1986). Previous research has more examined the effect of the characteristics or dimensions AIS relates

to the use and satisfaction with the information itself (Ang and Koh, 1997; Doll and Torkzadeh, 1988; McHanney and Cronan, 1998).

This study tried to assume the characteristics of AIS to be an essential criterion for an educated work unit manager in decision control and decision management. This assumption is based on the perception level argument of work unit managers that the information provided by AIS is genuinely relevant information, timely, accurate and supported by the format as needed. Besides the characteristic of AIS, it is also expected to reduce the environment's level of uncertainty, so it needs to accommodate the information needs of managers which meet the following four criteria: a) broad scope, b) aggregation, c) integration and d) timeliness (Chenhall and Morris, 1986). Thus, managers will use this information in managing the work units they lead that are included in the decision-making process. The use of AIS for decision control and decision management depends on the perception of the work unit manager of the characteristics of information generated by AIS.

Based on the explanation above, the impact of AIS characteristics and the use of AIS can be divided into the two groups. When the work unit manager perceives the information is timely, accurate, complies with the required format, has broad coverage, is concise and integrated, they will then use the AIS information in decision control and decision management. From these arguments, the hypothesis can be formulated as follows:

**H<sub>2a</sub>.** *The characteristics of AIS positively affect the manager behavior in decision controls*

**H<sub>2b</sub>.** *The characteristics of AIS positively affect the manager behavior in decision management*

### *2.3.3 Motivation of the decision control and decision management*

Motivation is a driving force that can stimulate the desire of the individual to do something. Motivation has been related to individuals/groups who want to do the work to achieve a specific performance. An individual's performance is expected to provide job satisfaction and can meet the necessities of life. So someone is working

because a need to satisfy a desire drives them. In connection with this, the workers should be motivated towards the realization that they can achieve satisfaction from the performance they have achieved. In other words, it can be said that they create the satisfaction themselves; others do not create it. According to Hasibuan and Malayu (1996), in motivating subordinates, managers should realize that someone will want to work hard in the hope of meeting the needs and desires of his work. So anyone will be willing to work hard if his needs are considered or met.

The effect of motivation, whether it arises from outside (extrinsic motivation), or that emerges from within (intrinsic motivation), it is described with the perceived support of middle level managers in terms of the stimuli provided by the center manager to act and take decisions in the interests of the organization (extrinsic motivation). The extrinsic motivation that is given by center managers has a strong influence on fostering the motivation of middle-level managers, so they have the awareness to act and take decisions in the interest of the organization, not merely for the sake of themselves (intrinsic motivation). Thus, the people involved in the organization are open to each other and feel comfortable in the organization so that the process of transforming information needed for decision making can be easily obtained and utilized positively by mid-level managers to exercise decision control and decision management in the interest of the broader organization. From the above statement, then the hypothesis can be formulated as follows:

**H<sub>3a</sub>.** *Motivation positively affects the managerial behavior in decision controls*

**H<sub>3b</sub>.** *Motivation positively affects the managerial behavior in decision management*

#### *2.3.4 Informal authority structure with decision control and decision management*

Informal authority is an individual's ability to influence the decisions and activities of the organization (Alexander and Morlock, 2000; Kotter, 1985). The focus of this research lies in the informal authority that is held by the education work unit manager. At this time, they are the dominant coalition in the organization that determines the effectiveness and efficiency of the organization. Their authority lies in their ability to understand the situation and the conditions detailed in the educational

work of the unit he leads. They have a central position concerning how the work units run. The effectiveness and efficiency of an organization depend on the cooperation between the central leadership of the educational organization and the work of the educational unit's manager.

Informal authority in the control of the work units is manifested significantly in resources, although it may not be formally possible. Unlike the formal authority that the right decision is obtained from the official delegation, the authority of the head and informal authority of educational work unit managers can be powerfully used to influence the overall decisions in their educational work unit. Often they use informal authority by ignoring the chief consideration of the institution's headquarters. This trend occurs as the head of the central office has only limited knowledge of the situation and condition of each unit of work. Besides that, informal authority possessed by the education work unit manager enables them to define, formulate, manage and evaluate strategic decisions without consideration of the work unit's head office. From this description, the hypothesis can be stated as follows:

**H<sub>4a</sub>.** *The informal authority structure negatively affects the managerial behavior in decision control*

While the influence of informal authority on the behavior of managers in control of decisions can be firmly and predicted, this is not the case with the influence of informal authority on the behavior of managers in decision management. There are theoretical arguments to support the idea that informal authority has a negative impact on the behavior of managers in decision management. This argument is valid when the decision management is about the implementation of the administrative system as noted by Abernethy and Stoelwinder (1995).

Based on empirical observation, it can be stated that the education work unit manager with his or her inherent informal authority tends to view AIS information as being relevant to the decision-making or management decision that they should engage in. This trend occurs because their understanding of the role of accounting in the formulation of decision-making is not optimal. This situation is very plausible

because there is a necessity for a more professional approach, including understanding accounting information in managerial functions that emerged around 2000. Therefore, in this study, this can be predicted in the form of the following hypothesis:

**H<sub>4b</sub>.** *The informal authority structure negatively affects the managerial behavior in decision management*

#### *2.3.5 Decision control and decision management with the cost consciousness*

The concept of the cost consciousness developed by Shields and Young (1994) emphasizes the importance of awareness of the cost consequences stemming from decisions made by managers. The costs become an essential consideration in the decision-making and efforts by managers to achieve cost efficiency (Birnberg et al., 1990). Assessment decisions that come from formal authority over the input and output effect on commitment and purpose of the system are associated with cost efficiency (Steer, 1977). This is based on evidence that many successful companies with competitive advantage can manage the budget well.

In this study, the effectiveness and efficiency of the work unit manager behavior are a proxy measured using the concept of the cost consciousness developed by Shields and Young (1994). The core of this concept is how the head of the central office of an educational institution and educational work unit managers, pay serious attention to the consequences that arise when a decision has been made and confirmed. Organizational performance assessment in the case of educational institutions is conducted by reviewing the budget, which is in the planning, implementation, and reporting of budgets using an accounting information system applied in the institutions concerned. The information presented of accounting information systems by the institutions' managers is expected to be useful for the work unit and the central leadership decision making and control, and subsequent decisions are expected to have an impact on managerial behavior in the manager's work unit, which is a concern regarding the costs incurred. Thus, from the hypothesis of this paper, it can be stated as follows:

**H<sub>5a</sub>.** *The manager behavior in decision control positively affects the cost consciousness*

**H<sub>5b</sub>.** *The manager behavior in decision management positively affects the cost consciousness*

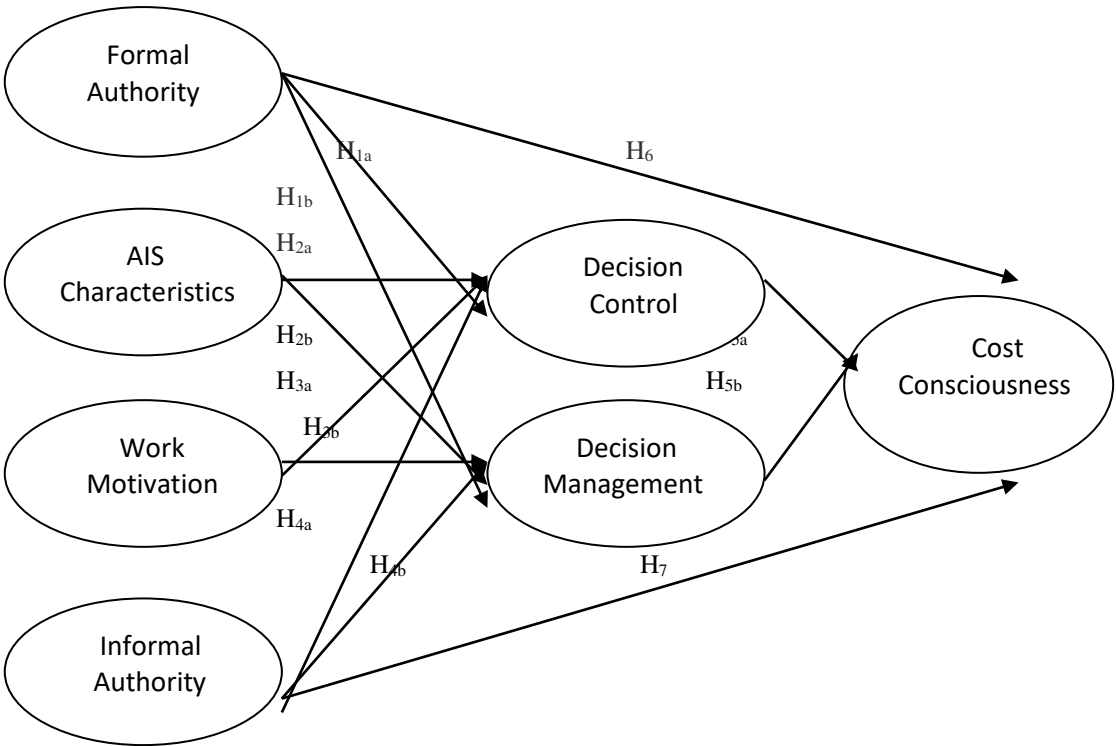
As for the influence of authority, whether in the form of formal authority or informal authority, on cost consciousness as a proxy for the effectiveness and efficiency of the work unit manager's behavior, this can be explained below. Formal decision rights inherent in that unit managers, delegated officially, allows an increased organizational commitment on the part of unit managers regarding the achievement of goals or objectives in an effective and efficient organization (Steers, 1977). The shape of the formal structure is designed to encourage and motivate managers to act based on the unit's correct resource management (Abernethy and Stoelwinder, 1995).

Meanwhile, informal authority inherent in the work unit manager obtained and derived from the individual's ability to influence others tends to produce a negative impact on the level of concern as a proxy for the cost-effectiveness and efficiency of the work unit manager's behavior. This could happen given that it traditionally occurred in the past (before 2000's), where the manager of the unit's work tends to be unprofessional in their work. Success, effectiveness, and efficiency of the organization is not a significant concern. They will act and work following the wishes of top/central management/leadership. Therefore, the hypothesis can be stated as follows:

**H<sub>6</sub>.** *The formal authority structure positively affects the cost consciousness*

**H<sub>7</sub>.** *The formal authority structure negatively affects the cost consciousness*

Figure 2  
Summary of Hypotheses



3. Research Methods

3.1 Scope of the Study

This research is included in the type of descriptive research because this research describes the relationship between variables. Descriptive research is one type of analysis which purpose is to present a complete picture of the social setting or is intended to explore and clarify a phenomenon or social reality by describing some variables about the unit under study or the phenomenon being tested. The purpose of descriptive research is to produce an accurate picture of a group, explaining the mechanism of a process or relationship, providing a complete view of either verbal or numerical forms, presenting information about a relationship, creating a set of categories and classifying a research subject.



The researchers determined the location of the research to be private education services in Indonesia that are managed by a foundation/association with the unit of analysis being its principal and structural officers who are the managers of the education work units they lead. Data retrieval was done by distributing research questionnaires at several locations as follows: 1. Jakarta, 2. Tangerang, 3. Magelang, 4. Yogyakarta, 5. Solo, 6. Surabaya.

To obtain valid data that could represent the population, the distribution of the research questionnaire was conducted in March and April 2012 taking into account the normal workload of the managers' work units, in this case, the principal and structural officials in the field of education. The timing of the research was adjusted to the level of activities of the work unit managers with the hope that the respondents would have enough time to read and fill out the research instruments that were distributed.

### *3.2 Sample and Data Research*

This study takes a sample from a population with specific characteristics, namely structural unit leaders and officials working in education that are managed by a foundation/organization. The sampling using purposive sampling technique. The purposive sampling method is a method of selecting a sample of the population element for which data have specific and clear criteria.

The data used in this study are primary data. The primary data came from the respondents' answers to the questionnaire that was sent to the managers at the work unit level along with overall structural education work units. The survey was distributed directly to the respondents in the education work units that were accessible by researchers. Postal deliveries were made to the educational work units that could not be reached by the researchers by involving a contact person in the areas where the education work units were located. Both methods are used so that the rate of return (response rate) of the questionnaires was high. The expected response rate was 75% of 250 surveys to be distributed. The adequate number of samples following the suggestion by Hair et al. (1998) is a minimum sample size, which is 5-10 times the

number of estimated parameters. Thus, if the parameter estimates in this study are 19, the minimum number of samples is 190, while the requirement of data processing using SEM analysis is between 100-200 samples (Hair et al., 1998).

### *3.3 Definitions and Measurement of Operational Variables*

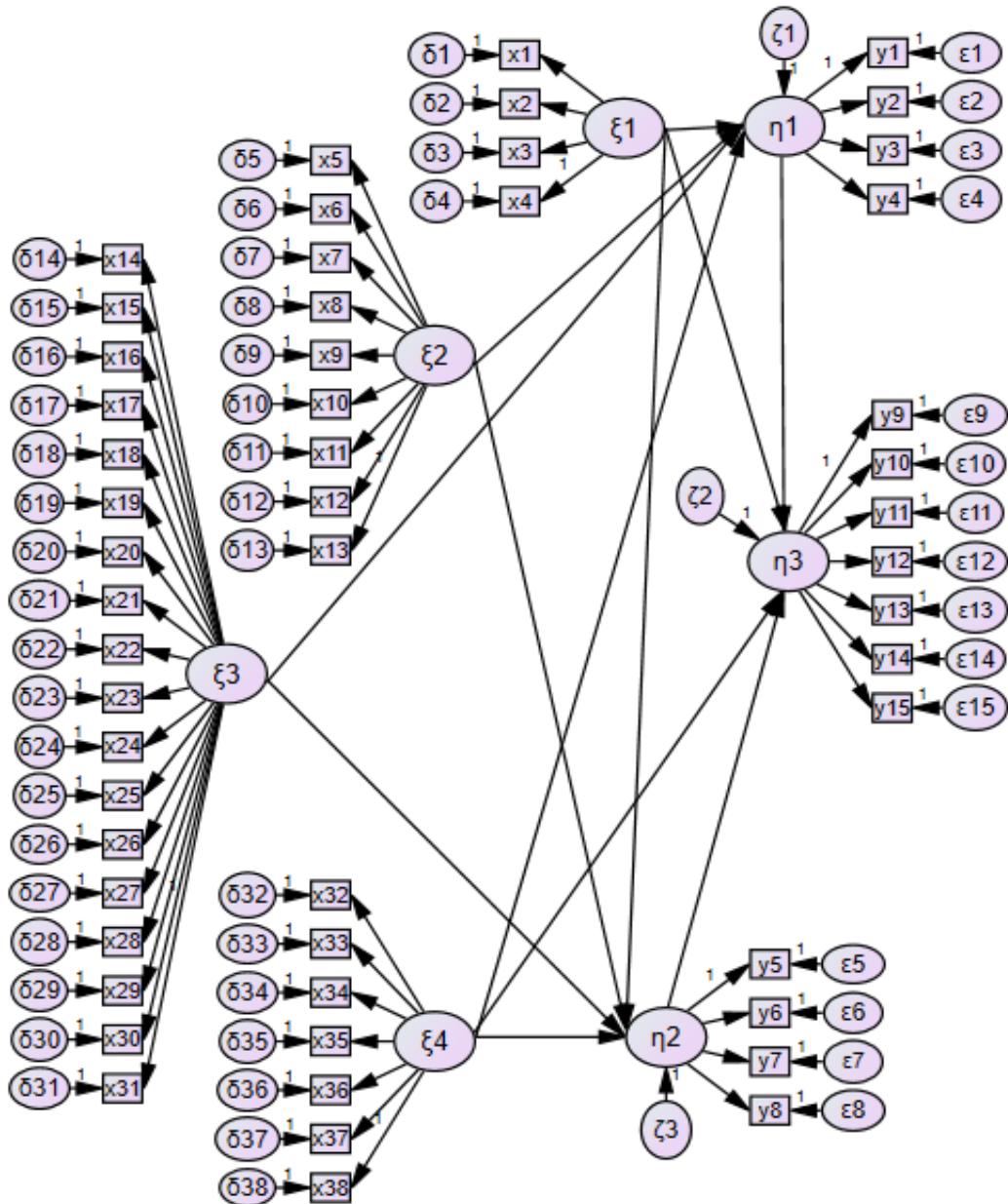
The operational definition is the process of attaching the primary meaning of a construct or variable by specifying the activities or actions that need to measure constructs or variables. There are 7 (seven) variables used in this study, namely: the formal authority structure, AIS characteristics, work motivation, informal authority structures, decision control, decision management, and cost consciousness. The measurement of study variables was an instrument that has been used in previous studies: a five-point Likert scale.

### *3.4 Research Model*

SEM is a confirmatory technique used to test the causal relationship when the change of one variable is assumed to result in changes in other variables based on existing theories. Theoretical studies were used to develop a model that formed the basis for the next steps. Constructs and dimensions to be studied from a theoretical model have been developed in the theoretical study and the development of hypotheses.

The model theoretical framework that has been built was later transformed into a flowchart or path diagram to describe the causality of the model constructs. This path diagram is a graphical representation of the effect of one variable on another variable that provides a comprehensive view of the structure of the model. The form of the model developed is shown in the below figure.

Figure 3  
Research Model



**Notation Explanation:**

$\eta$ (eta) =	CTF, MKP, CCS = Latent endogenous variable (the dependent variable)
$\delta$ (delta) =	Measurement error of the indicators of the exogenous variables.
$\varepsilon$ (epsilon) =	Measurement error of the indicators of endogenous variables.
$\zeta$ (zeta) =	Error in the equation between exogenous and/or endogenous to endogenous variables.

**Explanation:**

- $\xi_1$  = Formal authority structure (SKF), measured with four question items on a five-Likert scale.
- $\xi_2$  = Characteristics of accounting information systems (AIS), measured with nine question items on a five-Likert scale.
- $\xi_3$  = Motivation (MTV), measured with eighteen question items on a five-Likert scale.
- $\xi_4$  = Informal authority structure (SKI), measured with seven question items on a five-Likert scale.
- $\eta_1$  = Decision control (CTF), measured with four question items on a five-Likert scale.
- $\eta_2$  = Decision management (MKP), measured with four question items on a five-Likert scale.
- $\eta_3$  = Cost consciousness (CCS), measured with seven question items on a five-Likert scale.

### **3.5 Methods and Analysis Techniques**

A statistical technique used to test the hypothesis in this study is a Structural Equation Model (SEM). Simultaneous testing of the influence of formal authority structures, AIS characteristics, motivation and informal authority structure on the behavior of managers (decision control and decision management) and their impact on

the cost consciousness is done by using a structural equation model with a two-stage approach.

The analysis technique uses a two-stage approach which has been widely used in research-based SEM. A composite score is used for each construct in the model to reduce the difficulty in processing complex data and the relatively small sample size. The excess use composite score can reduce the number of estimated parameters to obtain the ratio between the number of variable indicators and an acceptably sufficient number of samples.

The research model is constructed with 7 (seven) variables (formal authority structures, informal authority structures, AIS characteristics, work motivation, decision control, decision management, and cost consciousness). Each variable is represented by a single multi-item indicator. A construct is a single variable indicator that is obtained from the multiplication factor score weighted with the score (value) of the respondents for each indicator and then totaled to produce a composite indicator score.

In this study, latent constructs are measured by a single indicator. Each indicator consists of several scales. Although it used a single indicator, it is was not necessarily a perfect construct that obtained measurements. Therefore, the measurement error must be estimated. Measurement errors will be adjusted (fixed) with exogenous and endogenous constructs of the indicator ( $\lambda$ ).

To measure the relationship between exogenous and endogenous variables and the indicator is calculated by the following formula:

$$\text{Lambda } (\lambda) = \text{Alpha } (\alpha)^{1/2} * \text{Std.Deviasi}$$

Alpha ( $\alpha$ ) is obtained from:

$$\text{Alpha } (\alpha) = \frac{(\text{Sum of standard loading})^2}{(\text{Sum of standard loading})^2 + \text{Sum of measurement error}}$$

While the measurement error is calculated in the following manner:

$$\text{Epsilon } (\varepsilon) = (1 - \text{Alpha}) * \text{Variance}$$

The two-step approach to SEM in this study was analyzed using the AMOS program. Modeling with SEM enables to answer the dimensional questions research. Structural equation model (SEM) is a collection of statistical techniques that allow testing of a series of relatively complex relationships simultaneously. The advantage of SEM applications in management research is its ability to confirm the dimensions of a concept or factors that are commonly used in the management research and its ability to measure the influence that theoretically exists.

4. Data Analysis and Discussion

4.1 Survey Administration

A summary of the questionnaire is shown in Table 1 below:

Table 1  
Summary of Questionnaire

Description	Data Amount
The number of questionnaires sent	250
The number of questionnaires was not returned	87
The number of questionnaires was returned over the target period	6
The number of questionnaires was returned to the target period	157
The number of questionnaires that can be used	157
The response rate: (157/250*100%)	62.8%

Source: Results of Research.

4.2 Demographics of Respondents

An overview of the profile of the respondents shows that 54.7% of them were male and 45.3% female. The majority of respondents had a formal educational background to the bachelor’s degree level (84.7%), and a majority had worked in the work unit had done so for more than ten years (81.5%). A clearer picture of the profile of the respondents is shown in Table 2 below:

Table 2  
Profile of Respondents (n=157)

Description	Frequency	Percentage (%)
Gender:		
Man	86	54,7%
Woman	71	45,3%
<b>Total</b>	157	100%
Education:		
SLTA	3	1,91%
Diploma	7	4,45%
S1	133	84,71%
S2	14	8,92%
S3	0	0
<b>Total</b>	157	100%
Work time (years):		
<10 years	29	18,47%
>10 years	128	81,53%
<b>Total</b>	157	100%
The distribution of the questionnaire acquisition was analyzed:		
Bengkulu	13	8,28%
Lahat	15	9,55%
Surabaya	20	12,73%
Yogyakarta	30	19,11%
Jawa Tengah	19	12,10%
Jakarta Selatan	31	19,74%
Jakarta Pusat	29	18,47%
<b>Total</b>	157	100%

Source: Results of Research.

#### 4.3 Validity Testing

Validity testing is used to assess the validity of a questionnaire. To test the validity of the data of this study, researchers conducted a factor analysis by eliminating the indicators/items that do not fit through the statement of confirmatory factor analysis (CFA). CFA was performed separately for each group of formal authority structure variables, the variable characteristics of the SIA, work motivation

variables, informal authority structure variables, decision control variable, the decision management variable and cost consciousness variable. Factor analysis was conducted using principal component analysis with 1 component extracted to obtain a valid separation factor with an invalid (Tabachnick and Fidell, 1996).

CFA conducted in accordance with procedures that an item will be retained (not dropped) if the factor loading equal to or greater than 0.5 with reference to the guidelines set by Comrey and Lee (1992), as quoted by Tabachnick and Fidell (1996), which states that the criterion 0, 5 has the ability to explain approximately 30% of the variance. The items will be dropped if there is a loading factor value that does not meet the standard set.

#### *4.4 Reliability Testing*

Reliability testing is done to see if a series of questionnaires used to measure a construct/ variable does not have a particular tendency. One way to test reliability is by computing Cronbach's alpha. Cronbach's alpha values show respondent consistency in its response to the overall measurement items representing a particular variable. Cronbach's alpha value <0.6 means the reliability of the constructs/variables are bad. If the Cronbach's alpha value is 0.6-0.7, then the reliability is acceptable, and if the Cronbach's alpha value is 0.8-1.0, then the reliability of the data is quite good.

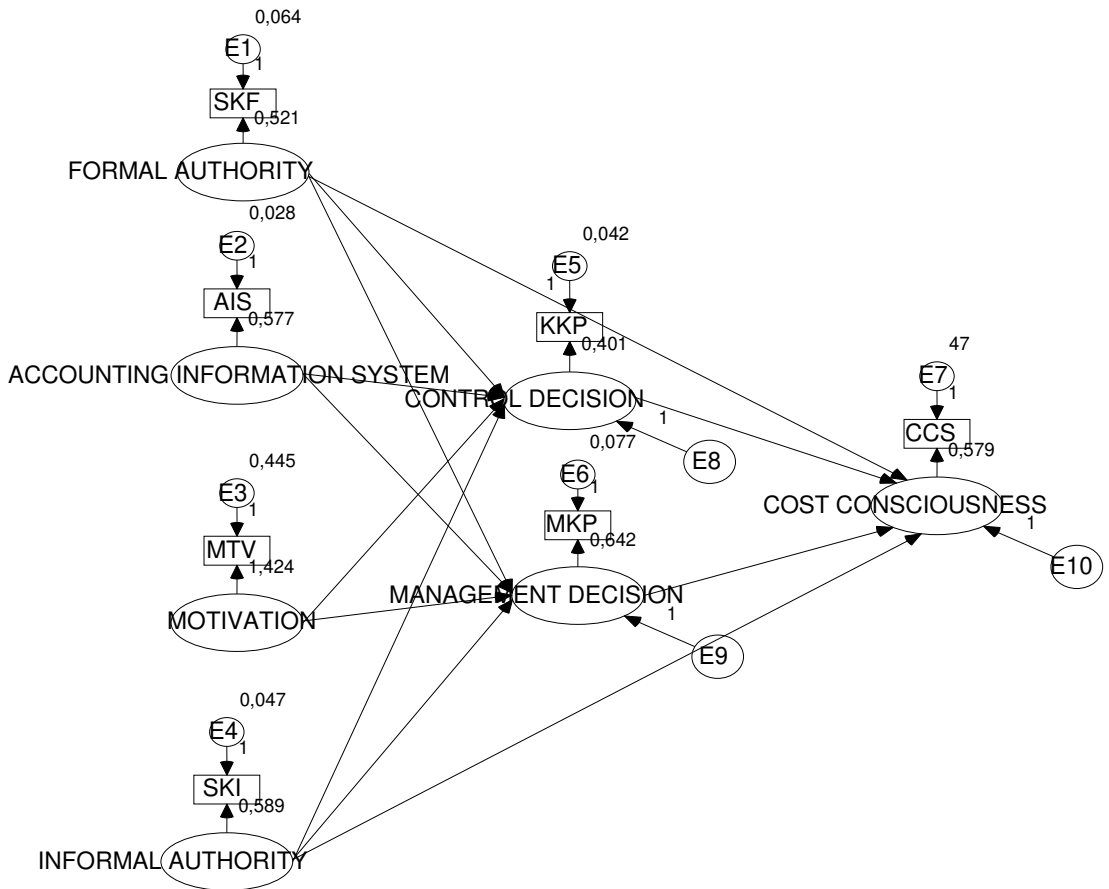
#### *4.5 Data Analysis*

The further analysis uses the Structural Equation Model (SEM) on a full model, after the analysis of the level of unidimensionality indicators forming the latent variables were tested with Confirmatory Factor Analysis. Analysis of the data processing in the stage full SEM models was done by testing the suitability and statistical tests. Results of processing data for a comprehensive analysis of SEM models are shown as follows:



Figure 4

Results Testing Structural Equation Models



#### 4.6 Hypothesis Testing

After all the assumptions are met, then the hypothesis will be tested as proposed in the previous chapter. Below is a table showing a summary of the results of hypothesis testing.

Table 3

The Results of Hypothesis Testing

Hypothesis		Standardized Estimate	Standard Error	Critical Ratio	Probability	The Results of Hypothesis Testing
H <sub>1a</sub>	The formal authority structure positively affects the managerial behavior in decision control	0,471	0,074	6,323	***	Supported
H <sub>1b</sub>	The formal authority structure positively affects the managerial behavior in decision management	0,349	0,070	4,969	***	Not Supported
H <sub>2a</sub>	The characteristics of AIS positively affect the managerial behavior in decision control	0,163	0,068	2,384	0,017	Supported
H <sub>2b</sub>	The characteristics of AIS positively affect the managerial behavior in decision management.	0,353	0,065	5,432	***	Supported
H <sub>3a</sub>	The work motivation positively affects the managerial behavior in decision control	-0,098	0,073	-1,351	0,177	Not Supported
H <sub>3b</sub>	The work motivation positively affects the managerial behavior in	-0,051	0,068	-0,751	0,453	Not Supported

Hypothesis		Standardized Estimate	Standard Error	Critical Ratio	Probability	The Results of Hypothesis Testing
	decision management					
H <sub>4a</sub>	The informal authority structure negatively affects the managerial behavior in decision control	0,413	0,071	5,841	***	Not Supported, but significant
H <sub>4b</sub>	The informal authority structure negatively affects managerial behavior in decision management	0,326	0,067	4,848	***	Not Supported, but significant
H <sub>5a</sub>	The manager behavior in decision control positively affects the cost consciousness	0,309	0,126	2,451	0,014	Supported
H <sub>5b</sub>	The manager behavior in decision management positively affects the cost consciousness	0,581	0,098	5,923	***	Supported
H <sub>6</sub>	The formal authority structure positively affects the cost consciousness	-0,022	0,096	-0,230	0,818	Not Supported
H <sub>7</sub>	The informal authority structure negatively affects the cost consciousness	0,063	0,087	0,726	0,468	Not Supported

#### 4.6.1 Testing Hypothesis 1

- H1a.** *The formal authority structure positively affects the managerial behavior in decision control*
- H1b.** *The formal authority structure positively affects the managerial behavior in decision management.*

The results of testing Hypothesis 1a and 1b show that the formal authority is given to the unit managers positively affects their behavior, either in decision control or decision management. Based on these results, it can be concluded that non-profit organizations engaged in educational services as the object of this study have implemented a decentralized model of authority, so the formal authority delegated to mid-level managers pretty extensive. Thus the unit managers have considerable formal authority in the decisions relating to the management of the education work units they lead.

#### 4.6.2 Testing Hypothesis 2

- H2a.** *The characteristics of AIS positively affect the managerial behavior in decision control*
- H2b.** *The characteristics of AIS positively affect the managerial behavior in decision management.*

The results of testing Hypothesis 2a and 2b answer the investigators contend that the characteristics of AIS positively affect the manager's behavior in decision control and decision management with a significance level of  $p = 0.017$  and  $\beta = 0.163$  for the decision control variable and a significance level of  $p < 0.05$  and  $\beta = 0.353$  for the decision management variable. Thus, Hypothesis 2a and 2b received.

#### 4.6.3 Testing Hypothesis 3

- H3a.** *The work motivation positively affects the managerial behavior in decision control*

**H3b.** *The work motivation positively affects the managerial behavior in decision management.*

Testing Hypotheses 3a and 3b proved that motivation does not affect the behavior of managers either in the decision control nor decision management. These findings do not support the process of motivation according to Gibson, Ivancevich, and Donnelly (2000) who argued that one of the significant factors affecting a person's behavior in an organization is motivation.

The motivation that applies to an organization is not able to influence the behavior of managers in the decision control and decision management. This is likely due to differences in social motives between for-profit organizations with a nonprofit organization. McClelland in Robbins (2003) spoke of the three social motives, namely: achievement motive, affiliation motive, and power motive. All motives are present in every individual, but the high and low motives are influenced by specific situations in the work environment.

The test results showed no effect of motivation on the behavior of managers in the decision control and decision management. This indicates the inability of non-profit organizations in motivating human resources to achieve optimum performance levels for the development of the organization. Therefore, non-profit organizations need to evaluate the motivational techniques that have been implemented so far. Evaluation of these motivational techniques has also supported the establishment of criteria for a performance evaluation system with clear standards for measuring personal performance within the organization.

#### *4.6.4 Testing Hypothesis 4*

**H4a.** *The informal authority structure negatively affects the managerial behavior in decision control*

**H4b.** *The informal authority structure negatively affects the managerial behavior in decision management.*

The result of this study does not support the research of Abernethy and Vagnoni (2004) who found that informal authority structure negatively affects the behavior of

managers. Thus, this study proves that the powers arising from the informal authority structure of a manager do not always have a negative effect.

The result of this study indicates that informal authority structures positively affect the managers' behavior in the decision control and decision management. This indicates the loyalty of the managers of nonprofit organizations. The informal authority of the managers of work units of nonprofit organization enables them to influence and change the minds of other people or groups in their performance of a desired task and not because of coercion, either physical or mental. The power in this study is positive because it is influenced by the good intellectual and emotional level of the survey respondents who were the implementors of education. Descriptive statistics of the study showed that the respondents' education levels equivalent to S1 and S2 are dominant with a percentage of 84.71% and 8.92%, thus it can be assumed that the intellectual and managerial respondents' knowledge level is high enough, including the ability of respondents to understand the importance of decision control and decision management to achieve organizational goals.

#### *4.6.5 Testing Hypothesis 5*

**H5a.** *Manager behavior in decision control positively affects the cost consciousness*

**H5b.** *Manager behavior in decision management positively affects the cost consciousness.*

The results of testing hypotheses 5a and 5b were able to answer the researchers' contention that managers' behavior in the decision control and the decision management positively affect the cost consciousness with a significance level of  $p = 0.014$  and  $\beta = 0.309$  for the decision control variables and significance level of  $p < 0.05$  and  $\beta = 0.581$  for the decision management variable. Thus, Hypothesis 5a and Hypothesis 5b were accepted. Hypothesis 5a in this study suggests that the unit managers have good decision control behavior to achieve cost consciousness. They have high control over the realization of the budget for the units' work as well as having the initiative to find solutions for achieving effectiveness and cost efficiency.

Research Shields and Young (1994) is supported by the results of testing research Hypothesis 5b. The better the work unit manager in managing the decisions they make, the higher the cost consciousness achieved. The costs become an essential consideration in the decision to achieve effectiveness and efficiency. Thus, the cost consciousness proved to be an important indicator in assessing the behavior of managers of an organization to control and manage the decision-making at the level of the unit's work responsibilities.

#### *4.6.6 Testing Hypotheses 6 and 7*

**H6.** *The formal structure of authority positively affects the cost consciousness.*

The research shows that the formal authority inherent in the leadership of the unit of the official delegation of organizational (formal authority) does not affect the cost consciousness. This was proved by the results of  $P = 0.818 (> 0.05)$ , not significant). Thus, Hypothesis 6 is rejected. This study does not support the findings of Steer (1977) who argued that formal authority in decision-making influences the commitment and purpose of the system associated with cost efficiency.

**H7.** *The informal structure of authority negatively affects the cost consciousness.*

The result of testing the Hypothesis 7 shows that the informal authority inherent in educational work unit managers to control the organization's resources does not affect the cost consciousness. This was proved by the results of  $p = 0.468 (> 0.05)$ , not significant). Thus, Hypothesis 7 was rejected.

The results of this study are inconsistent with the research of Abernethy and Vagnoni (2004), which explains that the magnitude of informal authority negatively affects the cost consciousness because people who have power over critical factors in the company tend not to be controlled by management. Therefore, such behavior can negatively impact the cost consciousness. In this study, both Hypothesis 6 and Hypothesis 7 are not supported. This proves that in this study, the formal authority that is delegated by the central leadership and informal authority attached to the unit manager does not affect the cost consciousness.

In response to this trend, the performance of the unit managers is controlled by the central office through responsibility mechanisms of the decision control and decision management between unit manager and central manager. Central managers evaluate the performance of the unit managers based on the budgets of the units they lead. Unit managers are responsible for budget variances that occur and report the actions taken to correct the cause of the budget variances to the central manager, so the unit manager also has cost consciousness and is involved in achieving the organization's objectives. Therefore, the decision control and decision management variables can mediate the influence of formal authority structure, AIS characteristics, motivation and informal authority structure on cost consciousness.

## **5. Conclusions, Limitations, Recommendations, and Implications**

### *5.1 Conclusions*

This study examined the effect of a formal authority structure, the characteristics of AIS, work motivation, informal authority structure, and decision control and decision management on cost consciousness. This study replicates the research of Abernethy and Vagnoni (2004) that was conducted at a distinct location as well as a unit of analysis. The study by Abernethy and Vagnoni (2004) took place at a hospital in Italy with the analysis unit being the physician who served as a manager, while this study was conducted in a non-profit organization engaged in providing education services in Indonesia with the analysis unit being managers/principals and officials in its structural units.

Based on the results of previous research and discussion, several conclusions can be drawn as follows:

1. A formal authority given to each unit manager influences better and more responsible decision controls and decision management, because the higher the authority is given to the manager, the higher the responsibility of managers will be in performing cost control in their work unit. The results of this study support the research of Abernethy and Vagnoni (2004).



2. AIS characteristics that can provide relevant, timely and accurate information presented in a format that can accommodate the needs of support managers who use it in decision control and decision management in the work unit they lead. The results of this study support the research of Milgrom and Roberts (1992) as well as the research of Abernethy and Vagnoni (2004).
3. Motivation applied in an organization is not able to influence decision control and decision management. This does not support the work on the process of motivation by Gibson (2000) who argued that one of the significant factors that affect a person's behavior in an organization is motivation. This study demonstrates the inability of nonprofit organizations to motivate their human resources to achieve optimum performance levels for the development of the organization. Therefore, non-profit organizations need to evaluate the motivational techniques that have been implemented so far. Evaluation of these motivational techniques needs to be supported by the establishment of criteria for a performance evaluation system with clear standards for measuring personal performance within the organization. These efforts are expected to provide stimulation and motivation for each work unit to work more effectively and efficiently to achieve organizational goals.
4. Informal authority structures positively affect the decision control and decision management. This indicates the high loyalty of managers of the nonprofit organization. The informal authority of managers of work units in the nonprofit organization gives them power that enables them to influence and change the minds of other people or groups to perform a desired action seriously, not because of coercion, both physically and mentally. The dominance of the informal authority of a manager who has strong loyalty and commitment to the organization will have an impact on the efforts made to maximize performance for the achievement of organizational goals. Therefore, the higher the informal authority possessed by the loyal manager, the higher the opportunity for organizations to effectively optimize existing resources within the organization to achieve goals.

5. Decision control and decision management positively affect cost consciousness. The better the work unit manager manages the decision making, the higher the cost consciousness that can be achieved. Costs are an essential consideration in the decision to achieve effectiveness and efficiency. Thus, the cost consciousness proved to be an important indicator in assessing the behavior of managers in controlling and managing the decision-making at the unit level of responsibilities.
6. Unit managers' efforts to optimize the resources that they have to survive in a climate of competition and complement the work of educational units with supporting facilities to achieve excellence have an impact on the lack of cost consciousness of the unit managers of the organization as a whole. The central office controls the unit managers' performances through responsibility mechanisms of the decision control and decision management between unit managers to primary managers. Primary managers evaluate unit managers based on the budget performance of the units they lead. Unit managers are responsible for budget variances that occur and report the actions taken to address the causes of the variances to central managers so that the cost consciousness can be realized. Therefore, the decision control and decision management variable can mediate the influence of formal authority structure, AIS characteristics, motivation and informal authority structure on cost consciousness.

## *5.2 Limitations*

Researchers are aware of some limitations that can affect the research results. These include:

1. The number of samples used in the study is not adequate to meet the criteria (the ratio between the number of parameters estimated and the adequacy of the number of samples). It can be seen that the rate of return of the questionnaires from respondents (respondent response rate) is less than that required by the data which is as much as 5-10 times the number of parameters estimated. Data collected only reached 82.63% of the ten times the parameter estimates.

2. The research instrument for the manager's motivation does not measure factors that can improve employee morale, such as a performance appraisal system that is supported by a clear assessment standard criteria and the rewards and punishment system that matches the manager's quality of work, so it cannot show the influence of motivation on the behavior of managers in the decision control and decision management.
3. This study used an instrument based on the perception of the respondent's score, so it would be problematic if the respondents have a different perception of the actual conditions.

### *5.3 Recommendations*

Based on the research that has been done, there are a few suggestions to increase the cost consciousness of the non-profit organizations and for the next research:

1. The number of samples used in future studies should qualify regarding sample adequacy, thus achieving the appropriate standards for the goodness of fit for a research model.
2. Motivation in nonprofit organizations should be developed by taking into account the factors that can improve morale, such as by setting clear standard criteria to measure performance and set standards of excellence and the implementation of reward and punishment systems following the quality work of managers.
3. In a subsequent study, the research instruments for the manager's motivation should be developed to measure the respondents' perception of sanctions or rewards according to the quality of work.

### *5.4 Implications*

Although this study has limitations, the research is expected to be of benefit as a consideration to improve effectiveness and efficiency in nonprofit organizations. These implications include:

1. The results of this study can be used as an input in the management of nonprofit organizations, especially improvements in the effectiveness and cost efficiency so that the organization's service performance can be improved. Besides that, the

structure of authority applied within the organization and design efforts to increase motives that are used in developing the cost consciousness should be noted and improved.

2. The results of this study are also expected to contribute to the development of literature in behavioral accounting, especially cost consciousness in decision-making. By developing the cost consciousness of an institution, it is supposed to improve its performance because cost consciousness will drive the effectiveness and cost efficiency.
3. The results of this study can at least add a reference and encourage research on behavioral accounting in the future, particularly concerning cost consciousness.

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