# The Application of Human Resource Accounting in Plywood Company

The study case of PT. Arjuna Perdana Mahkota Plywood

A THESIS

Presented as Partial Fulfillment of the Requirements to Obtain the Bachelor Degree in Accounting Department

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YOGYAKARTA
2004**

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ACKNOWLEDGEMENTS

Finally I owe my thank to my mother Rospnar, Hj., (Alm). And my father Yarmanis, H., Drs. For their endless support and encouragement. And for my sisters Wati, Ita and Eva, for giving me a figure of mother after our mom passed away. I wish also to express my appreciation to my lovely Nanda for her carrying, support, and patience. To them I dedicate this thesis.

As a human, the writer knows that there are still weaknesses in this thesis. That is way the writer welcome for any critism, opinion and suggestion for this thesis. I hope this thesis will be useful for everyone who is interested in Human Resource Accounting.

Yogyakarta, March 17, 2004

Siswandi Putra YR

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ABSTRACT

Siswandi putra YR, (2004). **The possibility for implementing Human Resource Accounting in Plywood company: A case study of PT. Arjuna Perdana Mahkota Plywood**. Accounting department. Economic Faculty, Indonesian Islamic University.

In this era of competition, every company strives to organize the business in the best way. The company's accounting information, such as financial statement is the key to measure the company's performance. Financial statement used by internal and external users as the basic of decision-making. Because of its importance financial statement has to put forward all company's information. As a matter of fact, financial statement does not give comprehensive information to the users.

A new branch of managerial accounting or cost accounting is Human Resource Accounting. It is concern of confession of human resource as company's asset. Financial statement will reflect human resource as an asset. This additional information, which appears in financial statement, will reflect the true condition of the company.

This research examined the application of Human Resource Accounting in financial statement of PT. Arjuna Perdana Mahkota Plywood. Income statement and Balance sheet of accounting of period 2000 were used. This research used a qualitative approach or non-statistical data in analyzing the problem. This based on compensation model by Lev and Schwartz's Present Value of Future Earning Model.

The following is the result of this research: PT. Arjuna Mahkota Perdana Plywood had not applied Human Resource Accounting in that company. The company may uses this research as the reference to apply Human Resource Accounting and it can be used as reference to the other researcher.

ABSTRAK

Siswandi putra YR, (2004). **Kemungkinan Untuk Menerapkan Akuntansi Sumber Daya Manusia Pada Perusahaan Kayu Lapis: Sebuah Studi Kasus Pada PT. Arjuna Perdana Mahkota Plywood**. Jurusan Akuntansi. Fakultas Ekonomi. Universitas Islam Indonesia.

Pada era kompetisi saat ini, setiap perusahaan berusaha menjalankan usahanya dengan cara yang terbaik. Informasi yang diberikan perusahaan, terutama informasi akuntansi berupa laporan keuangan serta informasi pendukung lainnya, merupakan kunci utama dalam menilai kinerja sebuah perusahaan. Mengingat pentingnya laporan keuangan bagi mereka yang mempunyai kepentingan dengan perusahaan, yang salah satunya sebagai dasar pengambilan keputusan, maka sudah seharusnya laporan keuangan memberikan informasi yang lebih komprehensif. Pada kenyataannya informasi yang diberikan belum lengkap. Informasi mengenai Sumber Daya Manusia belum dituangkan kedalam laporan keuangan.

Akuntansi Sumber Daya Manusia (ASDM) merupakan cabang ilmu baru dari Akuntansi manajemen dan Akuntansi biaya. ASDM memperlakukan sumber daya manusia sebagai asset perusahaan yang pada akhirnya akan tercermin dalam laporan keuangan. Dengan adanya informasi tentang sumber daya manusia di dalam laporan keuangan maka diharapkan informasi yang diberikan dapat merefleksikan keadaan perusahaan yang sesungguhnya, informasi dari laporan keuangan akan lebih komprehensif.

Penelitian ini memusatkan perhatiannya pada penerapan ASDM pada laporan keuangan PT. Arjuna Perdana Mahkota Plywood. Laporan keuangan yang digunakan adalah laporan Laba Rugi dan Neraca pada tahun 2000. Metode analisa data yang digunakan adalah metode qualitative atau non statistik dengan menggunakan metode Kompensasi oleh Lev and Schwartz.

Hasil dari penelitian ini menunjukkan bahwa PT. Ajuna Perdana Mahkota Plywood belum menerapkan ASDM. Penelitian ini dapat digunakan oleh perusahaan dalam menerapkan ASDM, selain itu hasil dari penelitian ini dapat digunakan sebagai referensi bagi peneliti lainnya yang akan menerapkan ASDM pada perusahaan yang berbeda.

CHAPTER I

INTRODUCTION

1.1. STUDY BACKGROUND

Nowadays, business development is increasing rapidly and very competitive. Small, medium, and large companies have to be able to compete one another in order to survive in business competition. The internal and external users to measure the performance of the company itself use the company's information, especially the accounting information. Thus, accounting information as a tool to help managers for effective planning, controlling, and decision-making function an important role. Without Accounting information, we have only opinion without supporting fact and direction signals.

The financial statement as a shape of accounting information has to put forward all the aspect that has not appeared in the conventional financial statement, which is human resource as the company's asset. Because human resource is the organizer of the other company's resources, (material resource, capital resource, technology resource, etc), according to Paton (in Cashin and Polimeni 1981): "In the business enterprise a well organized and loyal personnel may be more important assets than a stock of merchandise".

In order to recognize and include the item in the financial statement, the FASB gives criteria. The item should meet four fundamental recognition criteria to be recognized and should be recognized when the criteria are met (SFAC No.5 par.63).

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4. To aid in the development of management principles by clarifying the financial consequences of various practices.

The American Accounting Association (1970) defines human resource accounting as "the human resources identification and measuring process and also its communication to the interested parties".

There are two reasons for including human resources in accounting (Damayanti, L. K, 1994). First, people are a valuable resource to a firm as long as they perform services that can be quantified. The firm does not need to hire a person for him to be considered a resource. Second, the value of a person as a resource depends on how he is employed. So management style will also influence the human resource value.

Actually human resource accounting can be applied to several companies whether service or manufacture company, but it proper to be applied to the company within skilled employees. This additional information will increase the performance of the company and finally the company will provide faithful information to the related partied. Inspired by this reason, the writer is interested in proposing a thesis entitled **"The Application of Human Resource Accounting in Plywood Company". The study case of PT. Arjuna Perdana Mahkota Plywood**

1.2. PROBLEM IDENTIFICATION

Financial statement is the important information for the manager to take the proper decision, so the financial statement should describe a true condition of the company. By implementing human resource accounting concept in the financial statement the internal and external users will get more information for decision-making.

1.3. PROBLEM FORMULATION

Based on the explanation in background of the study, problem identification, the problem of this research is formulated as follow:

1. How is the application of human resource accounting in Plywood Company, the study case of PT. Arjuna Perdana Mahkota Plywood

2. How to present the human resource accounting in the company through the financial statement

1.4. LIMITATION OF RESEARCH AREA

In order to have deeper analysis the researcher make limitation by using the present value of future earning model as a tool of measurement or known as Compensation model. This research emphasize on the using of human resource accounting in the financial accounting. The objective of the research is the manufacture company so the researcher only includes the employees who take step in decision making because they give direct impact for the company's performance beside the technology owned by company to make a product even all the employee is an important asset to the company.

1.5. RESEARCH OBJECTIVE

The research is intended to analyse the application of human resource accounting in the plywood company (PT. Arjuna Perdana Mahkota Plywood) through the financial statement.

1.6. RESEACH CONTRIBUTION

1. This research can be used as references for the company in applying human resource accounting, especially for using compensation model in calculating the human resource and report in financial statement.

2. The writer will have a good experience from the research by practising the knowledge gained in the university into a real world condition.

1.7. DEFINITION OF TERM

The definition of terms will give explanations for readers to identify and understand the context of the thesis that are going to be analyzed:

1. Human resources accounting (The American Accounting Association 1970) human resource accounting as "the human resources identification and measuring process and also its communication to the interested parties".

2. Financial Statement (Fees and Warren. Accounting Principle)

   The accounting reports that will provide information, the principal financial statement are income statement of owner's equity, balance sheet and the statement of cash flow.

3. Case study

   A direct observation process conducted in a company or institution in order to obtain the data needed. Through the data the writer can make report of data finding, analysis, and conclusion.

1.8. RESEARCH METHOD

1. Data collecting technique:

   a. Literature Study:

   Literature study done by collecting articles and essays that are related to the topic of the research. These articles are collected from books, magazines, and other sources as the research basic theory.

   b. Field Study

   Field study done by doing direct observation to the company, which is interviewing the management of the company.

2. Data Sources:

   a. Primary Data

   Data which are acquired directly from the company, through interviews with managers and employees / staff.

   b. Secondary Data

   Data that are acquired from literatures related to the research.

3. Technique of data analysis:

   This research used a qualitative approach or non-statistical data in analyzing the problem. This is on present value of future earning model. This model is expressed as:

   $$E\,(V^*y) = \sum_{t=y}^{T} P_y\,(t-1) \quad \sum_{i\ y}^{t} \frac{r^*_i}{(1+r)^{t-y}}$$

Where:

$E(V^*y)$ = Expected value of the human capital value of a person y years old

T = Person's retirement age

$P_y(t)$ = Probability of the number of mortality

I^*i = Expected earnings of the person in period i

R = Discount rate specific to the person

After all data were obtained, the author began to analyze those data. These are stages to calculate expected value of human capital:

1. Calculate the present value of employee's salary. Data needed in this calculation are:

   - Employee's salary for each years (including wage and subsidy)
   - The increasing of salary for employee
   - Discount rate
   - Expected economic value (the difference between lifespan of pension and employee's age)

2. Calculate total present value of all employees within probability of death rate. This multiplication resulted expected value of human capital.

3. Calculate amortization of human capital and integrated into income statement.

4. The final result (expected value of human capital deducted amortization) will appear in balance sheet as an asset.

CHAPTER II

LITERATURE REVIEW

2.1. INTRODUCTION

In 1960s there was new idea in the accounting field, called human resource accounting. Likerts proposed this idea and it emphasizes on the confession of human resource accounting as a company's asset (Tunggal, A.W, 1995). There are pro and contra on this idea.

This chapter will discuss the human resource accounting theory by considering the previous that was done by other researcher, theoretical review that will give clear explanation of several aspects in human resource accounting. The result of the study about human resource accounting and the measurement using human resource accounting will also be presented here.

The systematic report of this chapter content of, first, introduction, second, theoretical review, this consider of all theory about human resource accounting. The reader will know all basic theory and several alternatives in measuring human resource. Third, previous study, will gives references to the reader about the research that had been done by other researchers.

2.2. THEORITICAL REVIEW

2.2.1. Definition of Human Resource Accounting

In 1973 the AAA's committee on Human Resource Accounting defined HRA as "the process of identifying and measuring data about human resources and communicating this information in interested parties". Other people commonly use this definition because it gives them clear explanation.

According to WIA (Work Institute in America, 1978) HRA is: "The development of theoretical perspective explaining the nature and determinants of the value of people to formal organization; the development of valid and reliable methods for measuring the cost and value of people to organizations; and the design of operational system to implement the proposal measurement method." (Mathews and Parera, (1996), p.250).

Flamholtz also gives an opinion about resource accounting, this opinion gives additional information to the opinions mentioned earlier: "In a literature sense, 'human resource accounting' means accounting for people as an organizational resource. It involves measuring the costs incurred by business firms and other organizations to recruit, select, hire, train, and develop human assets. It also involves measuring the economic value of people to organizations. Thus, human resource accounting means measuring the investment made by organizations in people, the cost of replacing those people, and the value of people to the enterprise".

In Cashin and Polimeni, (1981), p.828, the Human resource accounting is defined as "the recording, management, and reporting of personnel cost".

Brummet gives another definition of human resource accounting: "...is the process of measuring and reporting the human dynamics of an organization. It is the assessment of the condition of change in this condition through time. It is the process of providing information about individuals and groups of individuals within an organization to decision makers both inside and outside the organization". (Brummet, (1977), p.37-2)

Finally, all of the ideas above explain about human resource as an important aspect in such company. In fact, many companies did not care about cost that they spend to develop the human resource. Flamholtz gave reasonable idea about human resource accounting, but of course every idea will support each other in order to have a comprehensive opinion.

2.2.2. Function of Human Resource Accounting

Flamholtz (1975) identified three major functions of human resource accounting as a management tool: (Mathews and Parera, (1996), p. 250-251)

1. An information function

   Human resource accounting provided information to managers about the cost and value of personnel to an organization and that the specific type of information provided was determined by the specific needs of given organization.

2. A paradigm function

   Human resource accounting provided managers with a way of thinking about the management of people as valuable organizational resources.

3. A catalyst function

Human resource accounting can provide valuable information, facilitate corporate social accountability for employees and control the liquidation and depletion of the economy's human capital.

Dawson has suggested: "Human resource accounting has provided a framework to make the personnel manager's investment argument compatible and consistent with that of other managers". (In Mathews and Parera, (1996), p. 251)

2.2.3. Objectives of Human Resource Accounting

Thomas McRae (1974) stated the objectives of human resource accounting as follows: (in Cashin and Polimeni,(1981), p. 828).

1. Quantitative information

To provide quantitative information on an organization's human resources that management and investors can use in decision-making.

2. Evaluation Methods

To provide evaluation methods for the utilization of human resources.

3. Theory and Model

To provide a theory and relevant variables to explain the value of people to formal organizations, to identify relevant variables, and to develop an ideal model for management of human resources.

Belkaoui gave three major objectives of human resource accounting:

1. Identification of 'human resource value';

2. Measurement of the cost and value of people to organizations, and

3. Investigation of the cognitive and behavioral impact of such information. (Belkaoui and Jones, (1996), p. 539).

2.2.4. Assumptions Underlying Human Resource Accounting

Human resource accounting makes three basic assumptions, as follows: (Cashin and Polimeni, (1981), p. 828-829)

1. People as valuable organizational resources.

   The first assumption of human resource accounting is that people are valuable enterprise resources. They provide current and future services but they are not owned, as are machines or materials. The invested resources can be accounted for without ownership.

2. Influence of management style.

   The second assumption of HRA is that the value of human resources can be influenced by the way they are managed. Some attitudes or styles of management may increase employee motivation and increase productivity, while other management styles may decrease motivation and thus decrease productivity.

3. Need for human resource information.

   The third assumption of HRA is that information about human resource cost and value is necessary for effective and efficient management of people as an organization resource.

2.2.5. Human Resource Accounting's Managerial Role

A major purpose of human resource accounting is to serve as a system for providing measurements of the cost and value of employee to an organization. From managerial perspective, human resource accounting is intended to help decision maker use a cost-value calculus that is an assessment of the cost and value involved in a decision. More specifically, management needs measurements of the cost and value of human resources to make decisions in all phases of the human resource management process:

1. Acquisition of Human Resources

   The acquisition of human resources involves recruiting, selecting, and hiring people to meet the organization's present and expected future manpower needs. The first step in human resource acquisition is to forecast manpower requirement; after that management must translate into 'personnel acquisition budget', finally it can provide measurements of standard costs of recruiting, selecting, and hiring people, which can be used to prepare proposed manpower acquisition budgets.

2. Development of Human Resources

   By providing estimates of the current costs to acquire and develop people for various positions, human resource accounting can help management asses the trade-offs between the cost of recruitment from outside and development from within. Thus, it provides the economic information management needs to assist in formulating personnel acquisition and development policies.

3. Allocation of Human Resource

The allocation of human resources is the process of assigning people to various organizational Tasks. Human resource accounting can help quantify the variables involved in the allocation decision. This will help management understand the tradeoffs involved in allocation decisions and facilitate selection of the optimal course of action.

4. Conservation of Human Resource

Conservation of human resources is the process of maintaining the capabilities of people as individuals and the effectiveness of human system developed by an organization. An organization must calculate for its human assets in order to prevent their depletion. Managers must be held accountable for conservation of the human resources allocated to them. Human resource accounting can assist management in conserving its human organization by providing an early warning system. It can measure and report social-psychological indicators of the condition of the human organization. Management can then anticipates trends in this variable prior to the actual occurrence of turnover or decreased productivity. Corrective actions can thus be taken before rather than after the fact.

5. Utilization of Human Resource

Human resource utilization is the process of using human services to achieve organizational objectives. Human resource accounting can help manager effectively and efficiently utilize human resources by providing a paradigm or conceptual framework for human resource utilization.

6. Evaluation of Human Resources

Human resource evaluation is the process of assessing the value of people to an organization. It involves measuring the productivity (performance) and promo ability of people. Human resource accounting can be useful in the human resource evaluation process by developing valid and reliable methods of measuring the value of people to an organization. Human resource valuation will also have an impact on the administration of human resource reward systems. Human resource accounting can also be used to evaluate the efficiency of the personnel management function.

2.2.6. Recognition of Human as an Asset

To recognize and include the item in financial statement, the FASB gives criteria. The item should meet four fundamental recognition criteria to be recognized and should be recognized when the criteria are met (SFAC No. 5, par 63). SFAC determine four fundamental recognition criteria;

- **Definitions**

  The item meets the definition of an element of financial statement. In SFAC No. 6, par. 25, Financial Accounting Standard Board (FASB) defined asset as

  "Probable future economic benefits obtained or controlled by a particular by a particular entity as a result of past transaction or events". FASB determined three essential characteristics of an asset: (1) it embodies a probable future benefit that involves capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows, (b) a particular entity can obtain

the benefit and control others asses to it, (c) the transaction or other event giving rise to the entity's right or to control of the benefit has already occurred. Human resources gives economical benefit for the entity in past time and also in the future, that benefit owned and controlled by the entity for social period. Finally human resources can be included as an asset based on SFAC no.6

- **Measurability**

According to FASB an item must have relevant attribute that can be quantified on monetary units with sufficient reliability. Measurability must be considered together with both relevance and reliability, in SFAC no.5 (par.67), FASB states five different attributes of assets: (a) historical cost (historical proceeds), (b) current cost, (c) current market value, (d) net realizable (settlement) value, (e) present (or discounted) value of future cash flows. In another explanation FASB states freedom to use other attributes, SFAC no.5 (par.66), mentioned that items currently reported in financial statement are measured by different attributes, depending on the nature of the item and relevance and reliability of the attribute measured. Based on the explanation above, we can measure the human resource using different attributes in order to determine the objectives, relevance and reliability of human asset.

- **Relevance**

To be relevant to investors, creditors, and others for investment, credit, and similar decisions, accounting information must be capable of making a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events or to confirm or correct expectation (SFAC no.2,

par.47). Information about human resource asset complies the request of relevance. Using this information the user knows about the expansion of the human resource. Accounting information including human asset will give comprehensive information about past, present, and future of the entity.

- **Reliability**

Based on SFAC no.2, (par.58), reliability means the information should be reliable as well as relevant is a notion that is central to accounting, it is imperative to be clear about the nature of the claim that is made for accounting number that is described as reliable, in the other section FASB mentioned that reliability of a measurement rests on the faithfulness with which it represents what it purpose to present, couple with assurance for the user. Information about human resource asset complies with on request of reliability. Using this information the user may predict the consequence of using the human resource as an asset, also he can make correction for the mistake prediction.

Finally, it is concluded that human resource complies with the request of FASB, about four fundamental recognition criteria to be recognized as an item in financial statement, in order to have complete information about recognition of human resource as asset. Another suggestion is given, according to Flamholtz (1994), there are three main criteria for recognizing an asset: future service potential, measurable in monetary terms, and subject to ownership or 'control' of accounting entity.

2.2.7. Measurement of Human Resource Cost and Value

1) Measuring Human resource Costs

a. Original Costs or Historical Costs Method

Historical cost is calculated by capitalizing all the costs incurred to recruit, hire, and train an employee. These are treated as assets and then amortized. The historical cost system has an advantage and several disadvantages.

The advantage is:

- Its objectivity and consistency with the conventional use of cost as a measure of value.

The disadvantages are: (noted by Baker, 1974)

- Traditional weaknesses of this basis of asset valuation

- Notably of the stable currency assumption

- Narrowness and rigidity of considering cost to be a full measure of value (WIA, 178, p.10)

b. Replacement Cost Method

An alternative method of determining human resource costs involves measuring the cost to an organization of replacing that employee with another of equal ability.

The advantages are:

- Replacement cost has the potential to consider the performance of an individual within the organization, rather than only the position the individual holds. (Jaggi (1974), In Mathews and Parera, (1996)

- Potential uses in developing surrogate measurements of the value of people to organizations.

- Human resource planning and control processes

The disadvantages are:

- Managers may have difficulty estimating the cost of completely replacing their human organization, and different managers may arrive at quite different estimates.

- The problem of subjectivity in applying the replacement cost technique.

c. Opportunity Costs Method

Under the opportunity costs approach, assets are thought to have value only when there is an alternative use from them. According to Hekimian and Jones (1967) Human resource value is determined by the amount they could earn if employed in alternative functions, therefore providing for a more optimal allocation of personnel.

Advantages are:

- Provided greater flexibility

- Taking into account the fact that different individuals have different value (Jaggi, 1974).

Disadvantages are:

- It excluded the recruitment from the outside and treated employees who are not in short supply as having little or no value (Jauch and Skigen, 1974).

- It depends upon the information, judgment and impartiality of the divisions bidding for particular employees (Baker, 1974).

2) **Measuring Human Resource Value.**

a. **Non monetary Measurement of Human Value**

In Human Resource Accounting non-monetary measurement is commonly used in:

- Human skills inventories

- Level of productive of human in organization

- Measures the potential assessments and attitudes

Likert and Bowers developed the most famous non-monetary measurement of human value. They have formulated a model to explain the effectiveness of human systems and the organization. They have suggested that the measurement of certain dimension of a human organization (such as managerial leadership, organizational elimate, and group process) by means of survey research techniques may be used in obtain estimated changes in the productive capability of an organization

Flamholtz identified the economic, social, and psychological factors that determine a person's value to a firm. It is based on the premise that a person's value is a product of the attributes he brings to an organization (such as traits,

skills, and motivation) and the characteristics of the organization itself (such as its structure, reward system, management style, and role descriptions).

b. Monetary Measurement of Human Value

1. Hermanson's Unpurchased Goodwill model

Hermanson has suggested that the value of human resource of an organization may be assessed by capitalizing earning in excess of normal earning for the industry or group of companies of which the firm is a part. This approach has limited merit since (1) it is historically based on those of limited use as a predictor, (2) even if it were based on projected earning rates it would be no better than the predicted earning themselves, (3) it assumes human resources to be the total of all "un owned" assets, making no allowance for un owned assets other than human resources or for the various bases used for stating owned assets on the organization's books, and (4) it implicitly assumes a zero value for all human resources in competitive situations since a positive value requires above average earning.

2. Hermanson's Adjusted Discounted Future Wages Model

Hermanson has also suggested the discounting model of future compensation with an adjustment using an 'efficiency ratio' to determine the value of an individual. This method is obviously related to Hermanson's unpurchased goodwill model and it shares some of the same limitations. In addition it may be criticized that future compensation is as much as measure of the liability of

the firm employing the individual as its asset. The concept related to the human capital that is represented in individuals employed by the firm. It should be noted that both of Hermanson's theory are suggested for external reporting not for management use.

3. Lev and Schwartz's Present Value of Future Earning Model

These authors consider the use of the economic concept of human capital in financial statement and they conclude from Irving Fisher's Theory that "capital is thus defined as a source of income steam and its worth is the present value of future income discounted by a rate specific to the owner of the source..." These lead them to suggest that the estimated human capital value of a person y years old is:

$$E(V^*y) = \sum_{t=y}^{T} P_y(t+1) \sum_{i-y}^{t} \frac{I^*_i}{(1+r)^{t-y}}$$

Where:

$E(V^*y)$ = Expected value of the human capital value of a person y years old

T = Person's retirement age

$P_y(t)$ = Probability of the number of mortality

I^*_i = Expected earnings of the person in period i

r = Discount rate specific to the person

This model provides a reasonable measure of human capital. While the authors indicate that capital values determined by use of this model will provide financial statement users with valuable information about changes in an organization's labor force, the model's use for practical decision of managers of organizations or of potential investors in organizations is otocure or even nonexistent. This model is chosen in this study to calculate the human capital because as mentioned before this model gives reasonable result comparing to the other models.

4. Brummet, Flamholtz, and Pyle's Economic Value Model

In their early work, Brummet et al. Suggested multiple measures of human resources including an economic value concept involving the forecasting of future earnings, the discounting of these forecasted future earnings, and the prorate association of this with all assets including human resources. Basically this model is similar to the Hermanson's model but it places human resources on the level with other resources in their contribution to earnings rather than relating only to an excess of the normal (if any) to human asset.

5. Flamholtz's Stochastic Rewards Valuation Model

This model visualizes the movement of individuals through different roles or options in the organization as a stochastic process depending on prior roles or services states held by the individual in the system. Several steps are required to make the operational and to calculate an individual's expected realizable value to the organization requires:

1) Define the mutually exclusive set of 'states' and individual may occupy in the system.

2) Determine the value of each state to the organization.

3) Estimate a person's expected tenure in an organization.

4) Find the probability that a person will occupy each possible state at specified future times.

A person's expected realizable value E (RV) may now be expressed as:

$$E\ (RV) = \sum_{t-1}^{n} \left[\sum_{i-1}^{m} \frac{Ri - P(Ri)}{(1 + r)^t} \right]$$

Where:

R i =   Value R $_i$ to be derived by the organization in each possible service state, i

$P\ (Ri)$ =   probability that a person will occupy state l

t =   time

m state of exit

r =   appropriate discount rate

This model has an advantage and disadvantage. It will provide result that are responsive to perceive probabilities of tenure and promotability which are generally indicative of the time over the organization will enjoy the service of the individual and the magnitude of these periodic services. The disadvantage is the subjectivity of the probability estimated and the value of the service awards. The model does not deal explicitly with the periodic cost of

maintaining the individual in the organization to produce the service state rewards to the organization. It is difficult to be applied especially in Indonesia, because this model emphasizes on the movement of position in the organization. For middle to lower organization need more than three years to change their employee's position and even then there is no movement of position.

7. **Flamholtz Determinants of an Individual's Value to a Formal Organization**

On a conceptual and theoretical level, Flamholtz has tried to identify the key variables that determine an individual's value to an organization and the interrelationships of such variables. He recognizes that these determinants may lend themselves to monetary or non monetary indicators. Flamholtz suggests appropriately that this "model is suggested as a first step toward the development of theory.....". It is conceptual, theoretical, and perhaps only impressionistic.

8. **Organ's Discounted Certainty Equivalent Net Benefits Model**

With only mirror exceptions, the valuation models considered thus far emphasize human resource contributions to a firm ignoring the costs to the firm of retaining such resources. Ogan has proposed a model that includes explicit consideration of both the cost and benefit aspects. His model is shown below:

$$K_{kj} = \sum_{j=1}^{n} \sum_{k=t}^{L-t} \frac{1}{(1+r)^{k}} \Delta_{qj}$$

Where:

L	=	end of estimated useful life of the employee for the organization
J	=	jth individual, $j = 1,2,\ldots, n$
r	=	a discount rate external to the organization
Δ_{qj}	=	certainty equivalent net benefits generated by human resources
t	=	some time period from 1 to L which is a point in the useful life of employee to which the certainty equivalent net benefits that occur after t are discounted
K_{kj}	=	adjusted total net present values of human resources in a professional service organization

$q = k - t$

This model is specific for use in organization or groups of people whose contribution or 'benefits' are readily determined or predictable, such as the case of sales people, consultants, or other instances where revenues are based on billings for time spent with customers or clients.

9. Brummet and Taylor's Human Resource Value Index Model

Suggesting that knowledge of the dynamics of human resource values in an organization is more important than a knowledge of an estimate of value at a

particular time. Brummet and Taylor propose the development of a human resource value index may be used to assess human resources as currently allocated in an organization. It has a potential merit as a useful operational tool for managers.

2.3. PREVIOUS STUDIES

The field of human resource accounting has been developed since 1960s, some researcher have been attempting to place a value on human resources. Hermanson suggests that conventional financial statements fail to adequately reflect the financial position of a firm because they do not include human assets. Hermanson developed "The un purchased goodwill method" to measure the value of human assets (Brummet, (1977), p. 37-3).

In 1966, a group of researchers (Brummet, Flamholtz and Pyle) did a research on human resource accounting at the University of Michigan. This research was designed to develop concepts, model, and techniques of measuring and accounting the cost and value of human assets. They also developed possible application for such measurement. This research led to a variety of theoretical concepts and models as well as applications of these approaches in actual organization (Tunggal, (1994), p. 8)

Barry Corporation under the direction of Pyle, a leisure footwear manufacturer with headquarters in Columbus, Ohio, made the first reported attempt to develop a system of accounting for a firm's investment in people. Flamholtz, in his dissertation,

developed a theoretical model for the measurement of an individual's value to an organization (Brummet, (1977), p. 37-4).

There are many academic researcher that had been done in order to develop the human resource accounting., Lako (1995) explained about confession and how to report the human resource because an organization's assets and determined ROI of human capital. Shinta (2000) did a case study of PT. BPRS Bangun Drajat Warga, She used compensation model to calculate human resource. Shinta used fixed salary combine with variable salary and cost for Human resource was the new element in research and development cost. If she omitted variable salary in her calculation it will not reflect all human investment. Heriyaty (2000) with her case study of PT. Merapi Gelanggang Wisata used to present value of future earning model to calculate human resource. Basically both model have no difference. The secondary data used in this research was limited. The mortality used for all employees is without classification, better result would be obtained if it used comprehensive secondary data. Hariyati used double declining method to calculate the amortization of human capital. This method will result uncomplete Measurement rather than straight-line method. Straight line is widely employed in practice because of its simplicity and it is conceptually the most appropriate method. This research gives a new reference to calculate the amortization. However the result is not significantly different between straight line method and double declining method.

Luluk Khaniyah (1999) with her case study in RS Khusus Bedah Patmasuri Yogyakarta used only employees who take step in decision-making, in the top level of employee. Interest in the bank is used as discount rate, because that calculation of human

resource has to follow the interest rate at that time. It was the alternative condition when the company does not determine the discount rate.

Theoretical review provides basis theory in doing this research for several measurements proposed by previous researchers, the author chooses the Compensation model of *Lev and Schwartz's Present Value of Future Earning Model.* This model provides a reasonable measure of human capital. Capital values determined by use of this model will provide financial statement users with valuable information about changes in an organization's labor force. This model uses for practical decision of managers and concerning to the present value of future earning discounted by a specific rate. This model supported with primary data gathering from the research.
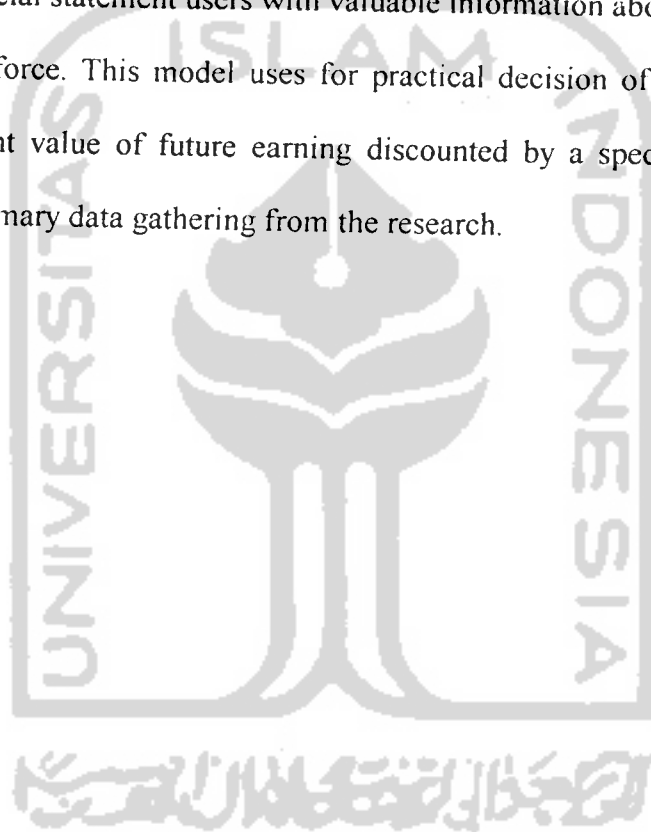
CHAPTER III

RESEARCH METHOD

3.1. INTRODUCTION

This chapter discusses the research method and the technique of data analysis of human resource accounting. The further explanation on this chapter will provide the description of how this research is conducted. A scientific research needs a method as a guidance to have a systematic report.

A systematic report in this chapter contains of research method, research subject, research setting, research instrument, research variables, research procedures, and technique of data analysis.

3.2. RESEARCH METHOD

The research method applied here is a descriptive method within a case study, Sakaran (1992) states a descriptive method is undertaken in order to ascertain and to be able to describe the characteristics of variables in a situation. Descriptive method is also undertaken to understand the characteristics of organization that follow common practices. The goal of descriptive method is to describe relevant aspects of the phenomena of interest to the researcher from individual, organizational, industry or other perspective.

According to Consuelo (Umar, (1999), p. 29) descriptive method is divided into several studies, such as case study, survey, development research, follow up study, content analysis, trend analysis, and correlation analysis. A case study is a kind of

descriptive method that systematically explains about an object in a specific time and past condition.

3.3. RESEARCH SUBJECT

The research subject in this thesis is PT. ARJUNA PERDANA MAHKOTA PLYWOOD. The main study is focused on the application of Human Resource Accounting in Plywood Company.

3.4. RESEARCH SETTING

The location takes a place in Pekanbaru Riau. PT. Arjuna Perdana Mahkota Plywood is located nearest the city centre.

3.5. RESEARCH INSTRUMENTS

3.5.1. Observation

This research was done using the direct observation, by doing the direct observation the information can be accurately and properly achieved based on the real fact. The observation began asking the data to the manager about the company's profile, financial statement, and employee's salary and other supporting data. A direct observation process is conducted in one company in order to obtain the data needed. Having all the data needed, then the report of data finding, analysis, and conclusion was made.

Data needed in this research are:

a. Primary data

The data gathered by the author is for a specific purpose of addressing the research problem

- Company's profile

- Company's history

- Organizational structure and job description of employees

- Financial statements (balance sheet and income statement) accounting period end of 1999 - 2000

- Employee's salary

- Employee's age

b. Secondary data

Study of literature from books and the data of Indonesian citizen mortality

3.5.2. Interview

By interviewing respondents, the data that were not mentioned in the direct observation were gained. This interview was done through a direct question and answers processes with the accounting department and public department, the question were asked when the observation was in progress. For example, the question about the employee's retirement age, the increasing of salary and company's policy. Applying the interview process, the information obtained can be explored and traced as much as possible.

3.6. TECHNIQUE OF DATA ANALYSIS

This research used a qualitative approach or non-statistical data in analysis the problem. This is on *Lev and Schwartz's Present Value of Future Earning Model.* This model is expressed as:

$$E(V^*y) = \sum_{t=y}^{T} P_y(t+1) \sum_{i=y}^{t} \frac{I^*_i}{(1+r)^{t-y}}$$

Where:

$E(V^*y)$ = Expected value of the human capital value of a person y years old

T = Person's retirement age

$P_y(t)$ = Probability of the number of mortality

I^*_i = Expected earnings of the person in period i

r = Discount rate specific to the person

After all data were obtained, then the author began to analyze those data. These are stages to calculate Expected value of the human capital:

1) Calculate the present value of employee's salary. Data needed in this calculation are:

- Employee's salary for each year (including wage and subsidy)

- Increasing of salary for employee

- Discount rate

- Expected economic value (the difference between lifespan of pension and employee's age)

2) Calculate total present value all employees within probability of death rate. This multiplication resulted expected value of human capital.

3) Calculate amortization of human capital and integrated into income statement.

4) The final result (expected value of human capital deducted amortization) will be appearing in balance sheet as an asset.

CHAPTER IV

DATA AND ANALYSIS

4.1.INTRODUCTION

This chapter first explains about the data gathering and analysis from the research. The data include all aspects related to the company, such as, company's profile, history, organizational structure, financial statement, employee's salary and age, other supporting data, and secondary data related to the analysis of the human resource accounting. Next, this chapter mentions a comprehensive explanation about PT. Arjuna Perdana Mahkota Plywood, therefore the readers will know about all aspects related to the activities the company have. Finally the analysis of human resource accounting that is supported by the all aspects above is discussed. The analysis topic will explain to the readers about the systematic analysis of the human resource accounting.

4.2.PRIMARY DATA

4.2.1. GENERAL DATA

A. History and profile of PT. Arjuna Perdana Mahkota Plywood

PT. Arjuna Perdana Mahkota Plywood established on November 21, 1983 in order to execute the cultivation of domestic capital no. 6 year 1968, pursuant to notary deed of Benny Kristianto, S.H. no. 108 which altered by the same notary with act no. 118 on November 28 1984. This bill of establishment is ratified by Republic of Indonesia Minister of judge in decree no. C2-7196.HT.01.01.TH.84 on November 1984 and announce in Republic Indonesia gazette no. 101 addition no. 1562 on December 1985.

Company statutes have experienced of several times changes the last with the notary deed above no. 184 March 1996, referring to the change of the entire section in the company statutes to be adapted by the law (perseroan terbatas) no. 1 1995, the increasing of authorized capital and paid in capital. This change has been agreed by Republic of Indonesia Minister of judge by letter decision no. C2-537.HT.01.04.TH.97 on January 23 1997 and announced in Republic of Indonesia official gazette no. 82 addition no. 5785 on October 13 1998.

The scope activities of the company are especially in the field of processing plywood, timber, local commerce and also exporting. The company starts commercial activity since year 1986.

Based on the organizational structure of PT. Arjuna Perdana Mahkota, the duty and responsibility for each item is explained below:

1. **Board of Directors**

   It consists of president director and director. The board of director has duty in leading and controlling the daily operational of the company. It also gives permission to use the documents in doing the transactions.

2. **Plant Head**

   It has responsibility of the whole company's activities; consist of production and non-production.

   - Undertaking from accepting raw material until finished goods
   - Coordination, the activity fulfill the target in quantity and quality
   - Controlling activity of production in the case of amount, cost, safety, and productivity

3. **PPIC + QC**

- Compiling monthly production planning

- Compiling the production planning according to the market

- Compiling the budget and calculating the cost

4. **Finance / Accounting**

- Monitoring all monetary activities (budget control, treasury, bank report)

- Designing policy / the system procedure in the area of finance

- Analyzing plan work

- Monitoring the control of supply and the administration in the warehouse

- Compiling financial statement

- Checking equipment and authenticity of bookkeeping evidence

5. **Personnel and General Administration**

It has a duty in relating the employees. Personnel and General administration give

medium to the employee in order to fulfill their needs. This division solves all

problems regarding the employee. e.g. medical allowance, meal allowance,

transportation.

6. **Logistic**

- Selecting the supplier who will provide the material

- Scheduling the arrival of material goods

- Monitoring execution of purchasing administration

7. **Engineering**

- Repairing for the efficiency of productivity in course of equipments, material and skill man power

- Conducting cost estimating and control and value analysis

- Monitoring the quality of production

- Conducting the study / inventing or analyzing new product

8. **Logging**

- Accepting and allocating the log (wood) from the supplier

- Choosing the log type pursuant to its usefulness

9. **Plywood division**

Especially handle the plywood product

10. **Secondary (2nd) Product**

Especially handle the luxurious product
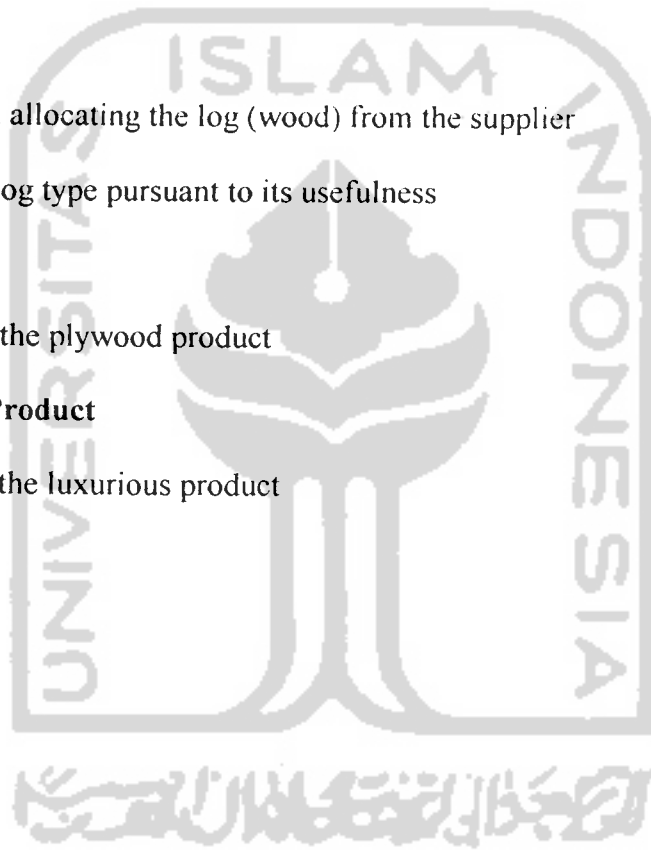
4.2.2. INTERNAL DATA

A. Income Statement

Table 4.1

PT ARJUNA PERDANA MAHKOTA INCOME STATEMENT		
	31-Dec	
	2000	1999
NET SALES	Rp86,053,411,274	Rp62,928,385,551
COST of GOODS SOLD	84,637,831,843	57,230,189,474
GROSS PROFIT	1,415,579,431	5,698,196,077
OPERATING EXPENSES		
Selling expense	2,009,646,017	1,451,791,443
Operating expense	2,473,877,492	2,430,341,424
Total operating expense	4,483,523,509	3,882,132,867
INCOME FROM OPERATION - LOSS	(3,067,944,078)	1,816,063,210
OTHER REVENUES AND EXPENSES		
Gain (loss) rate difference - Net	(22,281,554,449)	6,190,312,365
Interest expense	(8,339,553,414)	(10,164,610,632)
Amortization of Goodwill	(116,413,944)	(116,413,944)
Interest revenue	117,841,495	929,085,372
Others - Net	1,296,432,766	1,531,800,548
Other expense - Net	(29,323,247,546)	(1,629,826,291)
GAIN (LOSS) BEFORE TAX	(32,391,191,624)	186,236,919
TAXES		
Tax expense		
Deferred tax	10,473,328,488	78,836,486
Total	10,473,328,488	78,836,486
GAIN (LOSS) BEFORE RIGHT OF MINORITY STOCKHOLDER TO THE PART OF LOSS (GAIN) OF SUBSIDIARY COMPANY	(21,917,863,136)	265,073,405
RIGHT OF MINORITY STOCKHOLDER TO THE PART OF LOSS (GAIN) OF SUBSIDIARY COMPANY	2,238,476,438	(1,314,827,125)
NET LOSS	(Rp19,679,386,698)	(Rp1,049,753,720)

B. Balance Sheet

Table 4.2

PT ARJUNA PERDANA MAHKOTA BALANCE SHEET		
	31-Dec	
	2000	1999
ASSET		
Current Asset		
Cash and Bank	Rp1,751,408,827	Rp2,656,554,754
Account receivable - after exclusion		
Uncollectible account receivable Rp.288.654.250		
in year 2000 and zero in year 1999	2,085,595,565	7,658,570,343
Others account receivable	209,876,388	520,628,906
Supply	29,585,485,576	25,535,824,529
Purchase	6,560,738,091	6,489,567,731
Tax and prepaid expense	399,544,131	491,130,937
Total Current Asset	40,592,648,578	43,352,277,200
Non Current Asset		
Special account receivable	87,918,293	159,375,785
Deferred tax asset - Net	8,773,593,368	
Stock - Net	4,071,239,175	3,561,012,067
accumulated fix asset		
Depreciation Rp.43.758.750.654 in year 2000		
and Rp.34.186.807.547 in year 1999	52,191,508,941	58,434,550,781
exploration of forest enterpasing rights cost - Net	477,198,811	530,636,788
Goodwill - Net	1,658,898,740	1,775,312,684
Income tax restitution		250,000
Others non current asset	720,832,351	
Total Non Current Asset	67,981,189,679	64,461,138,105
TOTAL ASSET	Rp108,573,838,257	Rp107,813,415,305

Table 4.3

PT ARJUNA PERDANA MAHKOTA BALANCE SHEET		
	31-Dec	
	2000	1999
LIABILITY AND EQUITY		
CURRENT LIABILITY		
Short term liability		
Account payable	Rp24,388,000,000	Rp18.460,000,000
Third Party	14,964,471,928	11.404,522,510
Related parties	5.196,760,873	1.063.234.365
Others liability	7,237,922	2.360,742,317
Accrued liability	3,998,456,982	5.305,138,350
Tax payable	123,426,013	156,842,508
Long term liability in 1 year		
Bank Liability	56,024,952,453	24.619,670,746
Rent Liability	110,209,619	
Total Current liability	104,813,515,790	63.370,150,796
NON CURRENT LIABILITY		
Deferred tax liability - Net		1.698,636,049
Long term payable - after deducted by due date debt in the current year		17.787,276,207
Total non current liability		19.485,912,256
MINORITY RIGHT of SUBSIDIARY COMPANY NET ASSET		1.517,644.088
EQUITY		
Paid in capital - book value Rp.1.000 per share capital - 50.000.000 stock subscribed capital and fully remit - 27.000.000 stock	27,500,000,000	27.500,000,000
Deficit	(23,739,677,533)	(4.060,290,835)
Equity - Net	3,760,322,467	23.439,709,165
TOTAL LIABILITY AND EQUITY	Rp108,573,838,257	Rp107,813,416,305

C. Employee's Age and Salary

Table 4.4

NO	NAME	POSITION	SALARY / YEAR	AGE
1	Jimmi Rahim	Plant Head	240.000.000	42
2	Ahmad	PPIC + QC	42.000.000	35
3	Rusli	Finance, Acounting	60.000.000	40
4	Arja	Fungtional Coordinator	96.000.000	39
5	Mr.Lee	Production Coordinator	270.000.000	35
6	Arja (pjs)	Personnel and Gen.ADM		
7	Martius	Logistic	42.000.000	37
8	Mr.Lee (pjs)	Engineering		
9	G.Ginting	Logging	60.000.000	44
10	Citra	Plywood division	102.000.000	32
11	Feri. A	Secondary product	60.000.000	38

Note: - Retirement age is 55, the ordinary retirement age and the
productive age
- Discount rate17%, average of interest define by BI
- Salary rise 3% per year based on the policy of the company

4.3.SECONDARY DATA

4.3.1 Inhabitant of Riau

Population in Riau based on age group and sex will be shown on Table 4.5. This

data is used to know the amount of population in Riau. The age chosen are between 25 –

55, because that range people who are still productive and the retirement age is around 55

years old

NUMBER OF POPULATION BY AGE GROUP AND SEX IN RIAU PROVINCE

Table 4.5

age group	sex				male + female	
	male		female			
	1999	2000	1999	2000	1999	2000
25 - 29	231.780	264.023	255.840	263.588	487.620	527.611
30 - 34	213.775	221.138	193.179	195.761	406.954	416.899
35 - 39	180.014	198.270	160.369	199.074	340.383	397.344
40 - 44	140.040	169.537	117.120	136.949	257.160	306.486
45 - 49	121.130	101.972	92.791	83.575	213.921	185.547
50 - 54	68.169	71.142	66.788	58.149	134.957	129.291
55 - 59	55.046	50.645	46.878	40.440	101.924	91.085
TOTAL	1.009.954	1 076.727	932.965	977.536	1.942.919	2.054.263

* Social National Socio-Economic Survey, Welfare Statistic Central Bureau of Statistic

4.3.2. Mortality of Indonesian's citizen

Table 4.6 consists of mortality data of Indonesian's citizen. This data is an important aspect in application of human resource accounting, analysis of human resource needs a function of probability. The mortal probability is chosen in order to explain about the possibility of people die in certain age. According to the statistical data, reader will know about mortal probability for someone who lives in Riau Province in all level of age:

Estimation of fertility, mortality and migration (SUPAS 1995)

Table 4.6

SP' 71	SP' 80	SP' 90	SUPAS' 00	% INCREASING		
(1967)	(1976)	(1986)	(1996)	1967-1976	1976-1986	1986-1996
11,80	14,39	18,18	19,76	21,95	26,34	8,69

*Supas : Survei Penduduk Antar Sensus (Intercencal Population Survey)
SP : Sensus Penduduk (population Census)
Source Book of "Estimasi Fertilitas dan Migrasi", Central Bureau of Statistic.
*Year in bracket ( ) indicate reconcile year.

4.4 DATA ANALYSIS

This research used a qualitative approach or non-statistical data in analyzing the problem. This is based on *Present Value of Future Earning Model by Lev and Schwartz's*. This model may now be expressed as:

$$E(V^*y) = \sum_{t=y}^{T} P_y(t+1) \sum_{i=y}^{t} \frac{I^*_i}{(1+r)^{t-y}}$$

Where:

$E(V^*y)$	=	Expected value of the human capital value of a person y years old
T	=	Person's retirement age
$P_y(t)$	=	Probability of the number of mortality
I^*_i	=	Expected earnings of the person in period i
r	=	Discount rate specific to the person

After all data were obtained, then the author began to analyze those data. These are stages to calculate Expected value of the human capital:

1) Calculate the present value of employee's salary. Data needed in this calculation are.

- Employee's salary for each year (including wage and subsidy)
- Increasing of salary for employee
- Discount rate
- Expected economic value (the difference between lifespan of pension and employee's age)

2) Calculate total present value all employees within probability of death rate. This multiplication resulted expected value of human capital.

3) Caiculate amortization of human capital and integrated into income statement.

4) The final result (expected value of human capital deducted amortization) will be appearing in balance sheet as an asset.

4.4.1. Calculate the Present Value of Employee's Salary

The employee's salary will increase 3% per year, within retirement age of all employee is 55 years old. Discount rate here is deposit interest of BI 17%, 17% is approximate amount of deposit interest, because interest is fluctuating every time. This amount chosen from the maximum deposit interest in the current year. Period of time uses to calculate Present Value of Employee's Salary is the difference between retirement age and the age of employee.

NPV OF EMPLOYEES'S SALARY

Table 4.7

NO	POSITION	SALARY / YEAR	AGE	TOTAL NPV
1	Plant head	240,000,000	42	1,623,123,998
2	PPIC + QC	42,000,000	35	323,556,376
3	Finance, Accounting	60,000,000	40	427,300,599
4	Functional Coordinator	96,000,000	39	697,874,665
5	Production Coordinator	270,000,000	35	2,080,629,673
6	Personnel and Gen ADM	-	-	-
7	Logistic	42,000,000	37	315,596,895
8	Engineering	-	-	-
9	Logging	60,000,000	44	378,011,053
10	Plywood division	102,000,000	32	806,953,377
11	Secondary Product	60,000,000	38	443,980,167
	Total	972,000,000		7,097,026,803

*The calculation for each employee will be shown in the appendix

4.4.2. Expected Value of Human Capital

Expected value of human capital resulted NPV time mortal probability. Mortal probability in Riau province based on Intercencal Population Survey for all level of age is 19,76 %.

PRESENT VALUE OF FUTURE EARNING MODEL

Table 4.8

NO	POSITION	SALARY / YEAR	AGE	TOTAL NPV	PROBABILITY	E(Vr*)
1	Plant head	240,000,000	42	1,623,123,998	0.1976	320,729,302
2	PPIC + QC	42,000,000	35	323,556,376	0.1976	63,934,740
3	Finance, Accounting	60,000,000	40	427,300,599	0.1976	84,434,598
4	Functional Coordinator	96,000,000	39	697,874,665	0.1976	137,900,034
5	Production Coordinator	270,000,000	35	2,080,629,673	0.1976	411,132,423
6	Personnel and Gen ADM	-	-		0.1976	-
7	Logistic	42,000,000	37	315,596,895	0.1976	62,361,946
8	Engineering	-	-	-	0.1976	-
9	Logging	60,000,000	44	378,011,053	0.1976	74,694,984
10	Plywood division	102,000,000	32	806,953,377	0.1976	159,453,987
11	Secondary Product	60,000,000	38	443,980,167	0.1976	87,730,481
	Total	972,000,000		7,097,026,803		1,402,372,496

4.4.3. Amortization of Human Capital

Every single asset in the financial statement has to be amortized and Human Capital as an asset will be amortized. A single line method of amortization is chosen, because this method is widely applied in several practices.

The result in table calculate from, economic value comes from retirement age mines employee's age and the amount of E(Vr*) taken from table 4.8. Result of amortization comes from E(Vr*) divided by the economic value.

AMORTIZATION OF HUMAN CAPITAL

Table 4.9

NO	POSITION	AGE	ECONOMIC VALUE	E(Vr*)	AMORTIZATION
1	Plant Head	42	13	320,729,302	24,671,484.77
2	PPIC + QC	35	20	63,934,740	3,196,737.00
3	Finance. Accounting	40	15	84,434,598	5,628,973.20
4	Functional Coordinator	39	16	137,900,034	8,618,752.13
5	Production Coordinator	35	20	411,132,423	20,556,621.15
6	Personnel and Gen.ADM		-		-
7	Logistic	37	18	62,361,946	3,464,552.56
8	Engineering		-		-
9	Logging	44	11	74,694,984	6,790,453.09
10	Plywood division	32	23	159,453,987	6,932,782.04
11	Secondary product	38	17	87,730,481	5,160,616.53
	Total			1,402,372,495	85,020,972.46

4.4.4. Report of Human Resource in Financial Statement

The appearance of human resource as an asset in the financial statement will give additional information to the used parties. It reflects the complete condition of the company, especially for users that consider human resource information as the important information.

1. Confession journal of Human Resource

   Investment of human resource   xx

       Capital of human resource   xx

   Recruitment and acceptance of employee will increase the amount

2. Amortization journal

   Amortization of human resource   xx

       Accumulated amortization of human resource   xx

3. Removing journal

   Capital of human resource   xx

       Accumulated amortization of human resource   xx

       Human resource   xx

The journal records employee died, or the decreasing amount of employee caused by retreatment.

The analyzing of human resource accounting in this research emphases on the confession of human resource as company asset, based on present value of future earning model, the compensation model by Lev and swartz's. This model uses salary as human asset based to calculate the human resource asset.

From the explanation in previous chapter (II), FASB determined three essential characteristic of an asset: (1) it has probable future benefit, (2) control by particular entity and (3) it caused by the past transaction or event. The compensation model of Lev and swartz's does not comply with the third characteristic of an asset. It is because, this model also calculate the expected (future) value of human resource.

The numerical appears in financial statement of conventional accounting differs from human resource accounting. Because in conventional accounting all expense relating to the human resource will be confessed when it happens, but in human resource accounting the expense will be amortized based on economic value. Human resource measures the human resource asset and expense in proper way, it will give the better and proper result. The difference between conventional accounting and human resource accounting in financial statement will be shown in table 4.10, 4.11 and 4.12.

Human Resource in Company's Income Statement

Table 4.10

PT ARJUNA PERDANA MAHKOTA INCOME STATEMENT		
	December 31, 2000	
	Conventional	Human resource
NET SALES	Rp86, 053,411,274	Rp86, 053,411,274
COST of GOODS SOLD	84,637,831,843	84,637,831,843
GROSS PROFIT	1,415,579,431	1,415,579,431
OPERATING EXPENSES		
Selling expense	2,009,646,017	2,009,646,017
Operating expense	2,473,877,492	2,473,877,492
Total operating expense	4,483,523,509	4,483,523,509
INCOME FROM OPERATION - LOSS	(3,067,944,078)	(3,067,944,078)
OTHER REVENUES AND EXPENSES		
Gain (loss) rate difference - Net	(22,281,554,449)	(22,281,554,449)
Interest expense	(8,339,553,414)	(8,339,553,414)
Amortization of Goodwill	(116,413,944)	(116,413,944)
Interest revenue	117,841,495	117,841,495
Others - Net	1,296,432,766	1,296,432,766
Amortization of human resource expense		(85,059,353)
Other expense - Net	(29,323,247,546)	(29,408,306,899)
GAIN (LOSS) BEFORE TAX	(32,391,191,624)	(32,476,250,977)
TAXES		
Tax expense		
Deferred tax	10,473,328,488	10,473,328,488
Total	10,473,328,488	10,473,328,488
GAIN (LOSS) BEFORE RIGHT OF MINORITY STOCKHOLDER TO THE PART OF LOSS (GAIN) OF SUBSIDIARY COMPANY	(21,917,863,136)	(22,002,922,489)
RIGHT OF MINORITY STOCKHOLDER TO THE PART OF LOSS (GAIN) OF SUBSIDIARY COMPANY	2,238,476,438	2,238,476,438
NET LOSS	(Rp19, 679,386,698)	(Rp19,764,446,051)

Human Resource in Company's Balance Sheet

Table 4.11

PT ARJUNA PERDANA MAHKOTA BALANCE SHEET		
	December 31, 2000	
	conventional	human resource
ASSET		
Current Asset		
Cash and Bank	Rp1,751,408,827	Rp1,751,408,828
Account receivable - after exclusion		
Uncollectible account receivable Rp.288.654.250		
in year 2000 and zero in year 1999	2,085,595,565	2,085,595,565
Others account receivable	209,876,388	209,876,388
Supply	29,585,485,576	29,585,485,576
Purchase	6,560,738,091	6,560,738,091
Tax and prepaid expense	399,544,131	399,544,131
Total Current Asset	40,592,648,578	40,592,648,579
Non Current Asset		
Special account receivable	87,918,293	87,918,293
Deferred tax asset - Net	8,773,593,368	8,773,593,368
Stock - Net	4,071,239,175	4,071,239,175
Accumulated fix asset		
Depreciation Rp.43.758.750.654 in year 2000		
and Rp.34.186.807.547 in year 1999	52,191,508,941	52,191,508,941
Exploration of forest enterpasing rights cost - Net	477,198,811	477,198,811
Goodwill - Net	1,658,898,740	1,658,898,740
Income tax restitution		
Investment in human resource		1,402,372,495
Accumulated amortization of human resource		85,020,972
Others non current asset	720,832,351	720,832,352
Total Non Current Asset	67,981,189,679	69,468,583,147
TOTAL ASSET	Rp108,573,838,257	Rp110,061,231,726

Human Resource in Company's Balance Sheet

Table 4.12

PT ARJUNA PERDANA MAHKOTA BALANCE SHEET		
	December 31, 2000	
	conventional	human resource
LIABILITY AND EQUITY		
CURRENT LIABILITY		
Short term liability		
Account payable	Rp24,388,000,000	Rp24,388,000,001
Third Party	14,964,471,928	14,964,471,928
Related parties	5,196,760,873	5,196,760,873
Others liability	7,237,922	7,237,922
Accrued liability	3,998,456,982	3,998,456,982
Tax payable	123,426,013	123,426,013
Long term liability in 1 year		
Bank Liability	56,024,952,453	56,024,952,453
Rent Liability	110,209,619	110,209,619
Total Current liability	104,813,515,790	104,813,515,791
NON CURRENT LIABILITY		
Deferred tax liability - Net		
Long term payable - after deducted by due date debt in the current year		
Total non current liability		
MINORITY RIGHT of SUBSIDIARY COMPANY NET ASSET		
EQUITY		
Paid in capital - book value Rp.1.000 per share		
Capital - 50.000.000 stock		
Subscribed capital and fully remit - 27.000.000 Stock	27,500,000,000	27,500,000,000
Human resource capital		1,487,393,467
Deficit	(23,739,677,533)	(23,739,677,533)
Equity - Net	3,760,322,467	5,247,715,934
TOTAL LIABILITY AND EQUITY	Rp108,573,838,257	Rp110,061,231,725

Table 4.10, table of company's income statement will differ from conventional and human resource accounting. There is increasing amount of net loss at the end of period from Rp.19.679.386.698 becoming Rp.19.764.446.051. This increasing amount is caused by the amortization of human resource expense of Rp.85.059.353.

In table 4.11 and 4.12. table of company balance sheet, the difference between conventional accounting and human resource accounting in the current year can be seen. The total asset, human resource asset the amount becomes Rp.110.061.231.725. It will effect the liability and equity account, equity will increase of Rp.1.487.393.467 for human resource capital and the total liability and equity becomes Rp.110.061.231.725. Capitalizing the human resource expense in every year and amortizing the human resource value are the proper ways to recognize the human resource expense.
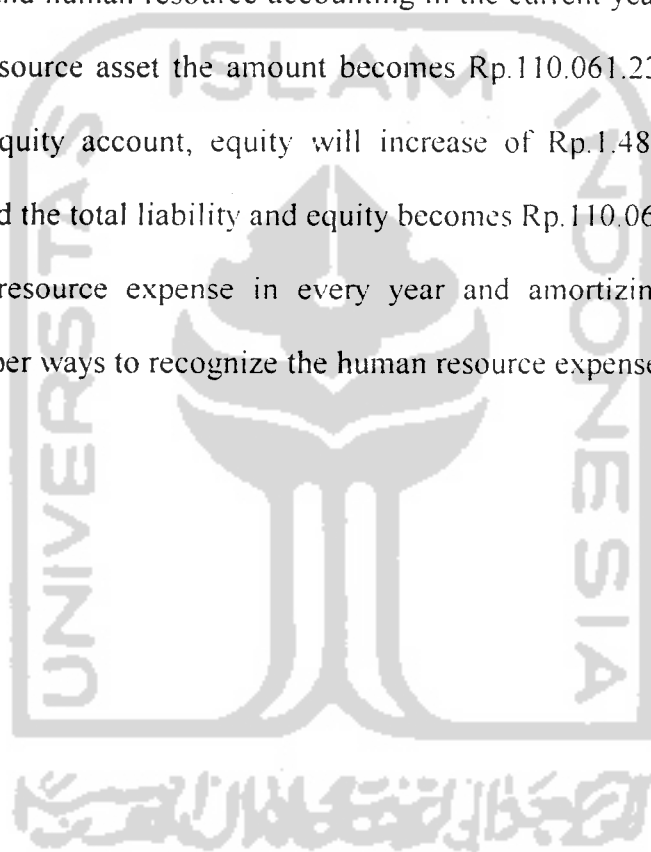
CHAPTER V

RESEARCH IMPLICATION, CONCLUSION AND RECOMMENDATION

5.1. INTRODUCTION

This chapter includes research implication, conclusion and recommendations, the research done is summarized in this chapter. The systematic report of this chapter is conclusion, implication and recommendation including research limitation.

5.2. CONCLUSION

From the research that has been done, including theoretical review and data analysis several conclusion are presented below:

1. Human resource accounting is related with a new theory in the accounting. This theory has not appeared yet in SAK (Indonesia Accounting standard). Human resource accounting is still in the further research. This research is emphasizing on the confession of human resource as company's asset, whether in expense and human resource value point of view. Based on the research in PT. Arjuna Perdana Mahkota, the company has not applied yet human resource accounting and it is possible to apply human resource accounting in that company.

2. In applying human resource company, the model used here is compensation model. Because there are uncertainty and the difficulty associated with determining the value of human capital, Lev and Schwartz suggests the use of an individual employee's future compensation as a surrogate of human capital value.

salary is one of the compensation to the employees, and it is becoming the human asset based on calculating the human resource asset.

3. The advantage of Lev and Schwartz's model:

This model provides a reasonable measure of human capital which could be useful for aggregation in macro statistics and in assessing the dynamics and mobility of such capital. Lev and Schwartz indicate that capital values determined by use of this model will provide financial statement users with valuable information about changes in an organization's labor force.

The disadvantage:

The principle limitation is the subjectivity associated with the determination of the level future salary, the length of expected employment within the firm, and the discount rate.

4. Using compensation model of present value future earning model, retirement age for the employee is 55 years old (assumption), the increasing salary per year is 3% based on the company policy and the probability is 19,76% discount rate is 17% (assumption). The discount rate is the deposit interest of BI.

5. Human resource as a company's asset will be recorded in financial statement. This additional information increases the company asset, and also increases the net loss of the company in the year of 2000, means the company in fact has more loss then shown in the conventional income statement. Including human resource accounting in financial statement will give comprehensive information to the end users of its information.

5.3. RESEARCH IMPLICATIONS

1. Theoretical implication

   Human resource is the important aspect in a company. Further research is needed in order to have a reliable research. This research can be used as references to the other research in different object. In order to have the same way of thinking, SAK (accounting standard) should mention this account and the basis principle of human resource as the company's asset.

2. Practical implication

   PT. Arjuna Perdana Mahkota has a function as a manufacture company, where human resource has an important aspect to the company, it will show the real asset of the company besides other assets, it will give the picture to the user the real asset of the company, in term of capital and company's health. It is proper to place the human resource as a company's asset. Finally the company will inform the other parties about human asset in financial statement. And it will reflect the truly condition of the company.

5.4 RECOMMENDATION TO THE OTHER RESEARCHER

There are several limitations in this research, such as:

1. This company does not decide about the retirement age yet, so the researcher makes the assumption based on the common productive age in Indonesia particularly.

2. The secondary data of mortality is for all level of age and it is not specific for such level.

3. This research emphasized only in asset perspective in the financial statement.

4. Because the company especially the private company has the power to maintain or decide the salary, as the compensation there will be different compensation between companies there should be a standard to measure the salary based on the level of the employee.

5. Because human resource accounting threat the employee as the asset, based on the definition of asset in FASB no.5, one of the definition write asset is obtained and controlled by a particular entity but physically human resource is not owned by company, but the company only can control human resource in order to get the future benefit, because of this limitation the effect will appear in measuring the amortization if the researcher use value based method. It is about the length of employment within the firm.

6. With all the weaknesses the researcher prefer to use the compensation model by Lev and Schwartz because in this model Lev and Schwartz also considering about the possibility of someone pass away before the retirement age (the mortality percentage).

According to the limitation above the author recommends to the other researcher using different object and different measurement to applying the human resource accounting, it is possible to use different way of measuring method with cost base method or value based method beside Lev and Schwartz's model. Comprehensive secondary data will give faithfulness and reliable result.

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APPENDICES

NET PRFSENT VALUE for EACH EMPLOYEE

Appendix 4

FUNGTIONAL COORDINATOR

YEAR	SALARY PER YEAR	RATE	NPV
1999	96,000,000	1	96,000,000
2000	98,880,000	0.8547	84,512,736
2001	101,846,400	0.7305	74,398,795
2002	104,901,792	0.6244	65,500,679
2003	108,048,846	0.5337	57,665,669
2004	111,290,311	0.4561	50,759,511
2005	114,629,021	0.3898	44,682,392
2006	118,067,891	0.3332	39,340,221
2007	121,609,928	0.2848	34,634,507
2008	125,258,226	0.2434	30,487,852
2009	129,015,972	0.208	26,835,322
2010	132,886,452	0.1778	23,627,211
2011	136,873,045	0.152	20,804,703
2012	140,979,237	0.1299	18,313,203
2013	145,208,614	0.111	16,118,156
2014	149,564,872	0.0949	14,193,706
TOTAL			697,874,665

NET PRESENT VALUE for EACH EMPLOYEE

Appendix 5

PRODUCTION COORDINATOR

YEAR	SALARY PER YEAR	RATE	NPV
1999	270,000,000	1	270,000,000
2000	278,100,000	0.8547	237,692,070
2001	286,443,000	0.7305	209,246,612
2002	296,036,290	0.6244	184,845,059
2003	303,887,379	0.5337	162,184,694
2004	313,004,000	0.4561	142,761,124
2005	322,394,120	0.3898	125,669,228
2006	332,065,944	0.3332	110,644,372
2007	342,027,922	0.2848	97,409,552
2008	352,288,760	0.2434	85,747,084
2009	362,857,422	0.208	75,474,344
2010	373,743,145	0.1778	66,451,531
2011	384,955,439	0.152	58,513,227
2012	396,504,103	0.1299	51,505,883
2013	408,399,226	0.111	45,332,314
2014	420,651,202	0.0949	39,919,799
2015	433,270,739	0.0811	35,138,257
2016	446,268,861	0.0693	30,926,432
2017	459,656,927	0.0592	27,211,690
2018	473,446,634	0.0506	23,956,400
TOTAL			2,080,629,673

NET PRESENT VALUE for EACH EMPLOYEE

Appendix 6

LOGISTIC

YEAR	SALARY PER YEAR	RATE	NPV
1999	42,000,000	1	42,000,000
2000	43,260,000	0.8547	36,974,322
2001	44,557,800	0.7305	32,549,473
2002	45,894,534	0.6244	28,656,547
2003	47,271,370	0.5337	25,228,730
2004	48,689,511	0.4561	22,207,286
2005	50,150,196	0.3898	19,548,547
2006	51,654,702	0.3332	17,211,347
2007	53,204,343	0.2848	15,152,597
2008	54,800,474	0.2434	13,338,435
2009	56,444,488	0.208	11,740,453
2010	58,137,823	0.1778	10,336,905
2011	59,881,957	0.152	9,102,057
2012	61,678,416	0.1299	8,012,026
2013	63,528,768	0.111	7,051,693
2014	65,434,632	0.0949	6,209,747
2015	67,397,670	0.0811	5,465,951
2016	69,419,601	0.0693	4,810,778
TOTAL			315,596,895

NET PRESFNT VALUE for EACH EMPLOYEE

Appendix 7

LOGGING

YEAR	SALARY PER YEAR	RATE	NPV
1999	60,000,000	1	60,000,000
2000	61,800,000	0.8547	52,820,460
2001	63,654,000	0.7305	46,499,247
2002	65,563,620	0.6244	40,937,924
2003	67,530,529	0.5337	36,041,043
2004	69,556,444	0.4561	31,724,694
2005	71,643,138	0.3898	27,926,495
2006	73,792,432	0.3332	24,587,638
2007	76,006,205	0.2848	21,646,567
2008	78,286,391	0.2434	19,054,908
2009	80,634,983	0.208	16,772,076
	TOTAL		378,011,053

NET PRESENT VALUE for EACH EMPLOYEE

Appendix 8

PLYWOOD DIVISION

YEAR	SALARY PER YEAR	RATE	NPV
1999	102,000,000	1	102,000,000
2000	105,060,000	0.8547	89,794,782
2001	108,211,800	0.7305	79,048,720
2002	111,458,154	0.6244	69,594,471
2003	114,801,899	0.5337	61,269,773
2004	118,245,956	0.4561	53,931,980
2005	121,793,334	0.3898	47,475,042
2006	125,447,134	0.3332	41,798,985
2007	129,210,548	0.2848	36,799,164
2008	133,086,865	0.2434	32,393,343
2009	137,079,471	0.208	28,512,530
2010	141,191,855	0.1778	25,103,912
2011	145,427,610	0.152	22,104,997
2012	149,790,439	0.1299	19,457,778
2013	154,284,152	0.111	17,125,541
2014	158,912,676	0.0949	15,080,813
2015	163,680,057	0.0811	13,274,453
2016	168,590,458	0.0693	11,683,319
2017	173,648,172	0.0592	10,279,972
2018	178,857,617	0.0506	9,050,195
2019	184,223,346	0.0433	7,976,871
2020	189,750,046	0.037	7,020,752
2021	195,442,548	0.0316	6,175,985
TOTAL			806,953,377

NET PRESENT VALUE for EACH EMPLOYEE

Appendix 9

SECONDARY PRODUCT

YEAR	SALARY PER YEAR	RATE	NPV
1999	60,000,000	1	60,000,000
2000	61,800,000	0.8547	52,820,460
2001	63,654,000	0.7305	46,499,247
2002	65,563,620	0.6244	40,937,924
2003	67,530,529	0.5337	36,041,043
2004	69,556,444	0.4561	31,724,694
2005	71,643,138	0.3898	27,926,495
2006	73,792,432	0.3332	24,587,638
2007	76,006,205	0.2848	21,646,567
2008	78,286,391	0.2434	19,054,908
2009	80,634,983	0.208	16,772,076
2010	83,054,032	0.1778	14,767,007
2011	85,545,653	0.152	13,002,939
2012	88,112,023	0.1299	11,445,752
2013	90,755,384	0.111	10,073,848
2014	93,478,046	0.0949	8,871,067
2015	96,282,387	0.0811	7,808,502
TOTAL			443,980,167