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A STUDY ON THE ADOPTION OF COST ACCOUNTING PRACTICES BY THE TEA INDUSTRY

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ABSTRACT

Suitable regulatory mechanism is required when a country like India is moving forward to be a developed country from a developing country. Besides routine financial and cost information and other disclosures, cost effective information for managers and government is required. This is necessary for enhancing the competitiveness of industry of a country. As tea industry in India is one of the very premium industries, it is necessary to examine the transparency of cost information which can be used to provide feedback on performances, trace different cost which are incurred, supports decisions, developing costing methods and techniques etc. This paper has been developed with an objective to highlight the cost records and reporting rules imposed by the government on the industry and also to know the future adaptability of costing practices in tea industry.

KEYWORDS

tea industry, regulatory accounting mechanism.

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INTRODUCTION

A full system of cost accounting starts with the recording classifying and appropriate allocation of expenditure to determine the cost of production and services with costing methods and ends with applying various techniques to identify and control inefficiencies. Although the emerging manufacturers are now willing to apply a suitable system of costing most of them are confused to select a proper system. This paper highlights the probable standard practices of record keeping and cost calculating techniques for the industry in the light of regulatory aspect accounting and reporting in the tea industry.

OBJECTIVES

To explore the regulatory aspect of cost record keeping system in tea companies and to know whether the industry will welcome the installation of proper system of cost accounting in their organization. This paper has been developed as per the objective to study the adequacy of cost record keeping system and the possibility of adoption of an adequate, systematic and uniform system of cost record keeping by the industry.

The paper has been divided into two parts searching answers of the **research questions** –

- What are the regulations for tea manufacturing companies relating to cost accounting records and reporting and the applicability of different rules?
- What are the owner and the managers opinion relating installing proper costing system in their enterprises?
- What can be probable reasons that they find it difficult to install costing system?

METHODOLOGY

In this study **primary data** are the information retrieved from face to face interviews with Accountants, Employees, Managers, and Office Assistants. In some cases, Mailed Questionnaire has also been used. **Population** consist of the tea processing factory units in the Dibrugarh District of Assam. There are 299 tea processing units licensed by the Tea Board of India under the revenue district of Dibrugarh as per the latest information. Out of the total 299 tea processing units, there are 142 units are bought leaf factory (BLF) type and the rest are 157 tea processing units are garden-factory type. 50 is the **sample size** of the study where 24 units of tea processing have been selected from bought leaf factory type (BLF) and 26 units of tea processing have been selected from garden factory group (GF). The working pattern in all tea processing units is similar and minor differences are observed in their recording pattern. In this study, therefore Researcher has used convenient sampling. 50 tea processing units responded according to the need of the study Tea processing units under control of company form of organisation abbreviated as BLF (O). Garden which are under control of any company form of business is termed as GF (C) and factory having own garden which are under ownership of other form of trading organisation is termed as GF (O).¹

REGULATIONS FOR THE INDUSTRY IN RESPECT TO COST RECORD KEEPING AND EXTERNAL REPORTING

There are certain rules and standards which is a must for the different categories of players in the Industry. In this section the rules applicable to the industry have been discussed with an objective to know the common practice of tea companies in respect to cost recording and reporting.

The Cost Accounting Records (Plantation Products) Rules, 2002, issued on 2002, which was an industry specific Rule required preservation of cost records by the companies of plantation industry as specified by the Rule. This rule was applicable for every company engaged in manufacturing and production of tea, coffee or any other commercial products in any plantation industry including seeds of tea and coffee. The plantation product rules were not applicable for a company which is having plant and machinery whose aggregate value is less than the limit specified for small scale enterprises and whose turnover from sale of all its goods and supply during preceding financial year does not exceed 10 crores of rupees.²

Again, the Cost Accounting Standards (CAS 22) has been issued for determination of 'Manufacturing Cost' of excisable goods. The objective of the standard is to guide all the enterprises including the tea manufacturing enterprises in the task of classifying measuring and assigning cost to estimate cost per unit of excisable goods. Applicability of various principles of cost accounting in the industry has been introduced through the Standard. The Standard guides the enterprises to calculate manufacturing cost of goods. According to the Standard the following costs are to be calculated under different headings and then assigned to the cost objective to calculate cost of production- direct expenses, cost of materials, cost of labour, employee cost, utility cost, cost of packing, expenses of quality control

research, repairs and maintenance and development and research expense and all other allocable costs. The enterprises are required to prepare the Cost Sheet showing all classification, bases of assignment and required disclosures in regard to manufacturing cost calculation of excisable goods.³

PREPARATION OF COST SHEET

The manufacturing companies under the Cost Accounting Records (Plantation Product) Rules, 2002, were required to prepare cost statements showing details of current years and previous year’s production details relating to a product. The details are- Total Cultivated Land, Total Land Allotted, Total Sales, Total Wastages and all other elements of costs under Proforma A, B, C, D, E, F. as per Cost Accounting (Plantation Product) rules 2002.

The Cost Statements are suggested to be prepared separately in each and every manufacturing unit. Though the Rules has been suppressed by the newly enforced Companies (Accounting and Audit) Rule 2014. Same cost accounting principles are found to be followed in the Rules, only difference lies in external reporting formats, which have been suggested by the Rules

PRODUCTION RECORDS

These records contain all details of production process starting from gardens or estates to final stage of manufacturing. All the cost incurred to produce and purchase tea crop are recorded with their quantity and kept so as to calculate conversion ratio between the crops (green leaves) and finished product (made tea). These records are also to be kept by the enterprises so that they can furnish report on different specified formats. Products sent to other organisation for processing and charges paid for processing are also to be recorded in production details. Complete details are maintained for every grade of products in relation to quantity produced, quantity packed or unpacked, sales or issues and balances etc.

RECONCILIATION OF COST AND FINANCIAL STATEMENTS

Reconciliation between Cost and Financial Accounts is much required to be prepared to ensure the accuracy and to ascertain profit. The Reconciliation Statement indicating all incomes and expenses under different heads of accounts which are not considered in cost records are indicated. These statements show total income and expenses under separate heads of accounts and their contribution to other activities and services.

The Adjustment of Cost Variances: Any procedure of working out cost of production, such as Standard Cost or any other method of cost calculation is explained in the cost statement. The Cost Variances are traced and are analysed under separate headings of materials, labour and overheads with regard to their prices, quantity and efficiency variances. The details of adjusting the cost variances are indicated in records.

Statistical Records: As per the Rule all data are recorded relating to area under different sections namely pruning, replanting, nursery etc. indicating their productivity. New project reports are also prepared indicating cost of different stages of projects. Funds raised and their allocation to different projects, progress of project etc. Proper records are also to be kept for human resource development expenses, pollution control expenses, inter-company transactions etc.

The Cost Accounting Records (Plantation Product) Rules were being followed till 2011 by all organisations which were under the rule. The Companies (Cost Records) Rules 2011 (CARR) issued by the Government for all such companies which were engaged in processing, manufacturing, producing, and mining activities. Thus, ascertainment of activity wise and product wise cost of production and cost of sales have come into existence in all industries through these CARR irrespective of the fact whether they are covered under Cost Audit or not. According to the rule all the companies are required to file a compliance report for each activity and product and also the cost of cost of sales production.⁴

As per notification issued by Central Government (25th June 2012) through the Cost Audit Branch of the Ministry of corporate Affairs, for the Product Group Classification, the Product Code of tea and tea product is 1013, Tea and Tea Product (inc 21011) under CETA Heading 0902. According to the notification Central Government may ask the industry members to file any document as required by the Government with Registrar or with Central Government. Cost Accounting (Records and Audit) Rules, 2014 are also applicable this Product Group under CETA Heading 0902.⁵

According to Companies (Cost Records & Audit) Rule 2014, different forms (CRA-1) have been prescribed in which cost records are to be kept. There are 30 headings as per the rules. Following are some examples of such headings cost of materials, utility cost, packing, depreciation of fixed assets, overheads, royalties and technical know-how, repairs and maintenance, interest and finance charges, cost of pollution, transportation cost, development expenses, adjustment of cost variances, sales records, statistical records, reconciliation of cost and financial accounts etc.⁶

BOX 1

Companies (Cost Records and Audit) Rules 2014	
CRA1: Forms	According to Companies (Cost Records & Audit) Rule 2014, different forms (CRA-1) have been prescribed in which cost records are to be kept. There are 30 headings as per the rules. Following are some examples of such headings Cost of materials, Utility Cost, packing, depreciation of fixed assets, overheads, royalties and technical know-how, repairs and maintenance, interest and finance charges, cost of pollution, transportation cost, development expenses, adjustment of cost variances, sales records, statistical records, reconciliation of cost and financial accounts etc.
CRA-2: Form 6(2)	It is a form prescribed by CARR showing information of Company Cost Auditor’s appointment which is to be submitted to Government Authority. General information about goods and services under Audit, Board’s resolution and terms of appointment of Cost Auditor are some details which are furnished in CRA-2.
CRA-3: Form	It is a form prescribed by the rule which contains product wise, unit wise audit report on statements of cost and schedules of the production under reference.
Annexure This has four parts- A, B, C, D	Part-A contains all details such as general information, Cost Auditor’s details, Cost Accounting policy applied for calculation of cost of production and cost allocation. Part-B contains quantitative information of manufacturing factors, cost statement, industry specific details of operating expenses, material consumed details, utility consumed details etc. Part-C consists of quantitative information of service sector relating to materials, utilities, operating expenses etc. Part-D It contains profitability statement of product, ratio analysis, value addition and distribution earning, reconciliation of indirect taxes etc. The audit report should mention briefly the cost accounting policies adopted by the company and also comment on adequacy of cost computation procedure.

Source: <https://www.slideshare.net/CMAWANYADAV/companiesrules2014> institute-material

Cost Audit: According to a document ‘Relevance and Utility of Cost and Management Accounting in the ‘Present Socio Economic Scenario’ an web document uploaded by Institute of Cost and Management Accountants of India “Cost Audit provides an assurance that the organisation’s cost accounting records are so maintained as to give a true and fair view of the cost of each product or activity”. For the benefit of management and shareholders, board of directors and consumers cost audit can be used which helps the company management to improve productivity, performance, competitiveness. To ensure data integrity, to identify the weakness in cost accounting system and to help in pulling down cost by detecting wastage and inefficiency cost audit is much needed. It is a tool to ensure timely information on inefficiencies, optimum utilization of resource and protecting interest of the stakeholders of an organisation. Preventing frauds is an essential to support the function of Serious Fraud Investigation Office (SFIO). Income Tax Authorities and Central Excise Authorities use cost audit reports severely for tax assessment and detecting tax evasion It has become mandatory to submit Cost Audit reports along with Tax Audit Reports to income tax authorities. Preparation of cost audit reports has become obligatory with the introduction of Revised Schedule 6 in the Cost (Records and Audit) Rules 2014 and it also serves as a valid source of manufacturing, production data and sales data of the industry as a whole.⁷

Researcher finds that in some large companies cost audit is regularly done to ensure the shareholders about the performance, productivity and competitiveness of the enterprise. There are large number of medium and small size enterprises existing in the tea industry that do not fall under the regulation of Cost Records and Audit Rules, neither they follow any common prescribed rules in this regard. The small and medium size enterprise are of great importance in the industry as they are producing huge quantity of tea and also contributing significantly in national production and export. Various previous studies have come out with suggestions that cost of production should be kept low and quality of production must be increased to compete with global players and to sustain in long run. So, each and every element of cost is to be closely monitored and audit thereof is felt very much necessary by the Researcher, as this will improve the efficiency by minimizing wastages. All the industry members should try to adopt cost audit at least once after two years so that they can compare their performance over period and have proper idea about their growth as well as that of the industry. Moreover, Government authorities can also be kept updated about the growth of the industry as a whole so that proper policies can be formulated for strengthening the industry.

During the field survey, the Researcher found absence of awareness regarding various costing techniques among the concerned persons at the different tea producing enterprises this is due to small and medium size enterprises are run by the owner and managers who are mostly found to be from non Accounting field. Thus, the Researcher comes to conclusion that Trade Associations, local Government Authorities and other concerned organisations must take some proper initiative to create an awareness among the managers of the tea manufacturing enterprises regarding a uniform costing system and also to convince them to follow a uniform costing records and audit thereof from time to time.

THE OTHER LEGISLATIVE ENACTMENTS

Legislative Enactments for Tea Manufacturers are worth mentioning here because following Acts, Rules, Orders demand the industry members to be true and just to the society as a whole. Records relating to each and every aspect relating to the following are must in the industry.

1. Tea Act 1953, Tea Rules 1954 and Investigation of Tea undertaking / Tea Units (procedure) rules 1981.
2. Tea waste (control) order 1959-
3. Tea Warehousing Licensing Order 1989.
4. Tea Marketing Control Order 2003- is an order issued in exercise of power under sub sec. (3) & (5) of the Sec 30 of the Tea Act 1953 in place of previous Tea (Marketing) Control Order 1984.
5. Tea (Distribution & Export) Control and Order 2005-

LAWS FOR PLANTATION INDUSTRY

Moreover, the producers and manufacturers in tea industry have to follow some general laws for plantation industry. These are given below:

1. Plantation Labour Act 1951- Industrial Dispute Act 1947-
2. Employees Provident Fund and Miscellaneous Act 1952
3. Employees State Insurance Act 1948.
4. Payment of Wage Act 1936
5. Minimum Wage Act 1948
6. Workmen's compensation Act 1923
7. Payment of Bonus Act 1965
8. Payment of Gratuity Act 1972
9. The Fatal Accident Act 1855
10. Prevention of Food Adulteration Act 1954 & Prevention of Adulteration Rule 1955- Laws on land and land revenue of the State where the factory or plantation is situated are also to be followed by enterprises in the industry. They are:
11. Law relating to the Agricultural Income Tax of the State.
12. Law relating to irrigation and water cess of the State.
13. State level VAT and Central Sales Tax Act
14. CENVAT Credit Rules
15. Central Excise Tariff Act 1958
16. Income Tax Act 1961-Income derived from the sale of tea grown and manufactured by the seller in India is computed and 40% of such income is considered as taxable income.
17. GST Act

Tea Cess - Tea Cess is levied on the production of Tea in India under sec.25 (1) of Tea Act 1953 at the rate decided by Government of India from time to time. It is collected by the Indian Central Excise Department on all types of tea produced in the country. The amount so collected gets credited to the consolidated fund of India and Central Government.

Plantation Industry is generally regulated by respective boards. Accordingly, Tea Industry is regulated by Tea Board of India which is an autonomous body functioning under Ministry of Commerce and Industry of Government of India. Tea Manufacturers are required to furnish details of sale of tea in Form "E" which include mode of selling i.e. sale through registered buyers /own retail outlets or branches directly to customer/ direct export etc. Similarly, registered buyers are required to furnish details of purchase through public auction and total tea purchased in any calendar year in Form "F". Submission of such returns regularly is necessary to exercise control over their activities.

Even after five decades of existence of the Tea Board more than 125216 (80 per cent) STGs continue to be outside the ambit of the Regulations of Tea Board. C&AG Report 10 of 2011, at this point recommended that there should be a strong mechanism which ensures that all the stakeholders of tea business compulsorily furnish requisite information on time for better regulation.⁸

The Cost Accounting Records Rules has been extended by the Government to all the companies which engaged in processing, manufacturing and mining activities to inculcate a sense of cost consciousness in large number of companies in different industries under regulated and non-regulated sectors. The Rule is applicable in case of tea industry This rule superseded the earlier industry specific Cost Accounting (Plantation Product) Rules, published vide G.S.R 685(E), on 8th October 2002, which was applicable for tea industry. The mechanism of maintenance of cost records to a very large extent has helped the industries to cope up the severe competitive forces arising out of globalization and liberalisation and through CARR the Government has prescribed uniform Cost Accounting Records Rules in place of product wise record Rules which was prescribed earlier.⁹

Again on June 30, 2014, the Central Government has issued Companies (Cost Records and Audit) Rules, 2014. Subsequently, it issued Companies (Cost Records and Audit) Amendment Rules, 2014. On December 31, 2014, the Amendment Rules had introduced certain changes to the previous Rules issued on June 30, 2014. The Companies (Cost Records and Audit) Rules, 2014 has become applicable and governs the maintenance of cost accounting records and cost audit under Section 148 of the Companies Act, 2013.¹⁰

This Rule being the principal Rule has been amended by Central Government further on 19th March 2015 and 7th December 2017, incorporating new changes in them. For example, Amendment to the principal Rule, Companies (Cost Records and Audit) Rules, 2014, read with the Amendment Rules 2017, has been brought about mainly the objective of bringing cost records and audit in synchronize with the Indian Accounting Standards (IndAS).¹¹

The Researcher has observed that the Government intervention in the industries has been a good initiative which gives regulatory push to the enterprises to have a minimum level of cost management and take economic decisions which will enable them in respect to better cost management and become cost conscious. Moreover, Government also provides subsidies to the producers so that they can achieve certain objectives stated in various economic policies and social objectives. Depending upon their cost structures the decisions are taken regarding the subsidy to be extended to concerned manufacturer. Therefore, the regulatory involvement must be there to conduct cost studies so as to get consistent and accurate cost data for the said purpose through compelling companies to maintain

necessary cost data for meeting cost data required for the purpose. According to the Council of ICWAI, Government prescribes compulsory cost record maintenance rules based on cost accounting principles and standards which are synchronized with the Indian GAAP. As per the expert group report on cost accounting audit rules in India, the country is passing through a transition from a developing country to a fast developing country and expected to be shortly stand in the same queue of developed countries in which maturity level of Indian industries will be at the highest where there will be no need of government intervention through cost accounting records, reports and audit rules. Because at highest level of maturity, the industries will be more self disciplined in this regard. But till then, Indian industries needs principles, instructions and guidance from the government because the compliance and monitor mechanism of Government acts as driving force to adopt proper system for cost mechanism for cost consciousness and cost control in the industries.¹²

MANAGERS’ AND OWNERS’ OPINION ABOUT INSTALLING AN ADEQUATE COST ACCOUNTING SYSTEM IN THE ENTERPRISE

After considering the various statutory regulations, rules, standards of the land the Researcher tried to evaluate the fact that whether the enterprises adopt proper cost recording, cost calculating and cost reporting sufficiently and adequately for the well being of the enterprises or not. The Researcher, on the **research question**, finds that the regulatory framework of land also compels the enterprises to keep systematic records of all costs. The Researcher is of opinion that though all rules are not compulsory for all the tea manufacturing enterprise to sustain in such a competitive market all enterprises should try to implement a standard practice.

USES OF COST INFORMATION

As per the second objective, the researcher has attempted to know from the accountants and manager whether the information cost accounting they get from the recorded facts, are mainly used for making decisions, for tax filing purpose or reporting or for both the purposes.

TABLE 1.1: RESPONSE OF THE MANAGERS RELATING TO PREFERRED USE OF RECORDED INFORMATION

	Mostly for decision making		Mostly for reporting and tax filing		Both		Total
Garden Factory under company form	1	20%	3	60%	1	20%	5
Garden Factory not under company	3	14%	15	71%	4	15%	21
BLF Under Company	0	0%	4	80%	1	20%	5
BLF not under company	1	05%	16	84%	2	11%	19

Source: Field Study.

In Table 1.1, the Researcher has observed that 3 out of 5 (60%) GF (C) and 4 out 5 (80%) BF (C) use cost information mostly for reporting and tax filing purpose. On the other hand, 15 out of 21 (71%) GF (O) and 4 out of 5 (80%) BLF (O) keeps their record for reporting and tax filing purpose. 20% of GF (C) and no BLF (C) use the cost information mostly for decision making and 20% of them use the same for both the purposes. BLF (O) and GF (O) do not have much to do with the cost information. Only 11% of the BLF (O) uses the information for decision making and 5% of GF (O) uses the information mostly for decision making and 11% of GF (O) for both the purpose. The Researcher has observed that all respondent, the BLFs and GFs, under the control of other forms of trading organisation keep costing records basically for reporting and tax filing purpose. But some of the BLFs and GFs under the control of big companies keep cost records for decision making purpose.¹³

The Researcher has made an attempt to know what are the uses of available information to the managers are.

TABLE 1.2: RESPONSE RELATING TO THE USE OF COST INFORMATION BY THE MANAGERS

	Most preferred use for	Occasionally used	Total number of respondents
Evaluating the performance of machines and production process as whole	30	20	50
Accounting for cost of made tea	50	00	50
Price fixing decision	50	00	50
Budgeting	20	30	50

Source: Field Study

The Table 1.2 shows that, the managers and accountants basically use the cost information to calculate the cost of manufactured tea and price fixing decisions. It also shows that smaller percentage, which is 40% of them use the cost information for budgeting mainly, 60% of total respondent says that they use cost information primarily for evaluating performance of machines and production process as a whole. 100% of the managers and accountants mostly use cost data for calculating the cost of manufactured tea and for price fixing decisions regarding their products. The Researcher has found that they mostly use the cost information for cost calculating and price fixing.¹⁴

The Researcher observes that most of the tea processing units record the cost information in a very simple and systemic manner as per routine task according to their own requirement. All the information recorded in the tea factories are as per the requirement of reporting and tax filing purpose. The managers use cost information basically for the calculation of cost of production and price fixing. They are less concerned about the budgeting, cost analysis, and evaluate the performance of the production process. It is also observed from the above analysis that in units under the control of large size enterprises (mostly in company form) in the industry cost information is well kept and recorded properly. The tea manufacturing units under the control of various forms of organisations other than company form are thus suggested to keep all records which will serve better for the purpose of cost calculation, cost estimation, cost control etc. There should be more and more awareness about the benefits and new techniques of cost calculation among the entrepreneurs and managers.¹⁵

As per the **research question**, relating to the owners and the manager’s opinion on installing proper costing system in their enterprises, respondents were asked whether they try to follow the cost accounting rules principles and standards and whether they are interested to seek help from cost professional to set a system of cost accounting which suits their enterprise.

TABLE 1.3: RESPONSE RELATING TO INTRODUCTION OF COST SYSTEM

Questions	Yes already done	Not inter-ested	Not yet but in-terested	To-tal
Do your organisation try to follow the cost accounting rules, principle and standard	20	5	25	50
Whether your organisation is interested to seek help from cost professional to set a system of cost accounting which suits their enterprise	15	3	32	50
Did you install any software packages that help you to make comparative study of cost.	7	8	35	50

Source: Field Study

In the above Table 1.3, it is observed that 20 of total 50, which is 40% of the total respondents, are already following the Rules and Cost Accounting Standards, 25 respondents out of total 50, which is 50%, are found to be interested and only, 5 respondents out of total 50, which is 10%, are not interested to follow the cost accounting Rules, Principles and Standards.

15 respondents out of total 50, which is 30%, have already taken costing professional’s (through Cost Audit) help, 32 respondents out of total 50, which is 64%, are interested and only 3 out of total 50 respondents, which is 6%, are not having any interest to seek help from the costing professionals to set a system of suitable cost accounting in their enterprises.

Again, there are many industry specific software is available for computer based management information system in the organisation. In respect of the used of such software packages only 14% have installed the same in their enterprises. 70% of them have shown interest to install in future and only 16% of the total respondent are not interested to install any such software.

It has been observed that though the cost Accounting Standard, Principles, Rules are not compulsory for all types of enterprises; the managers and owner are generally interested in costing and its implementation in their organizations. But due to lack of professional knowledge, it could not be implemented in most of the cases.

Respondents were asked the following Questions to find conclusion for third **research question** as to what can be the probable reason they find it difficult to install costing system.

TABLE 1.4: RESPONSE FOR NOT INSTALLING A COMPLETE COST ACCOUNTING SYSTEM

No.	Reasons for not having adopted a Cost Accounting system	No of responses	%
1	Own system is sufficiently serving the purpose	30	60%
2	Lack of professional personnel	25	50%
3	Inexperience personnel	22	44%
4	Management's unwillingness	20	40%
5	Cost factor	15	30%

Field Study

As per Table 2 the Researcher observes that among the reasons for not having installed a full system of cost accounting, reason no.1 (own system is sufficiently serving the purpose) is more prominent which is 60%, followed by reason no.2 (Lack of professional personnel) which is 50%, reason no.3 (Inexperience personnel) 44%, reason no.4 (Management's unwillingness) which is 40%, and reason no.5 (Cost factor) which is 30%. Thus it has been found that all above mentioned reasons have significant contribution to the fact that most of the firms find it difficult to install a complete system of cost accounting.

CONCLUSION AND SUGGESTIONS

From the above analysis it can be concluded that today's cost accounting practices in the industry has emerged from the necessity to solve urgent problems of everyday management and to discharge of reporting function of the managers. Cost accounting systems of the companies operating in the conditions of transition should provide adequate information, which help managers and owners take effective decisions at different management levels.

In order to make generalisations about the directions of development of cost accounting, both researchers and practitioners need more systematic information about the prevailing cost accounting systems and the factors influencing them. The Researcher has observed that the reporting requirement under the country's regulatory framework and internal reporting system have been the causes which has set the current cost recording system. And some of the managers and owners are sincere enough to monitor cost on a regular basis and are trying to improve as per their level best.

The Researcher is of opinion that, to inculcate a strong sense of cost consciousness and efficiency with cost leadership, the Government should make such laws which make it mandatory for all members in the industry to follow uniform rules, principles and standards relating to cost recording, cost reporting, cost calculation, cost allocation bases etc and also to prepare uniform cost statements so that to estimate productivity and cost efficiency. It is also suggested that unnecessary enforcement of different regulation should be avoided. Government monitoring through enforcing compliance technique should act like guidance to the industry members.

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USAGE OF ARTIFICIAL INTELLIGENCE IN INDIAN BANKS

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ABSTRACT

Artificial intelligence (AI) is catching fast across the world. The Indian banking sector is one among the early adopters of AI in the country. Banks are exploring and implementing technology in the front office and back office in various ways. AI is growing smarter from day to day. AI includes smarter chatbots for customer services, personalized services for individuals and introduction of an AI robot for self service in banks. This helps in reducing frauds and risks in the banking sector. In this paper, the author has discussed how AI is used in the banking sector, what are the benefits and the various challenges involved in application of AI in India.

KEYWORDS

banks, technology, artificial intelligence, influence & threats.

JEL CODES

G21, G38, O31, O32, O33.

INTRODUCTION

The Indian banking industry is witnessing a remarkable growth in the entire gamut of financial services. The Indian banks are on the verge of regulatory reforms, policy initiatives and technology evolution. These changes have brought a metamorphosis in the banking scenario. Some of the remarkable reforms of examples are Pradhan Mantri Jan Dhan Yojana, Atal Pension Yojana, payment banks, digital wallets have triggered the swift expansion of banks. This has prompted the entry of private players, new job creation in the sector. Banks have started competing with their peers and competitors. The advent of technology has created a competitive arena for both public sector banks and private sector banks to provide value added services to customers. The mode of offer of banking services were offered to the customers itself has changed with the introduction of technology in the banks. The emergence of fintech startups has brought innovation in the payment setups, borrowing and lending and customer relationship management. Hence it has become necessary for Indian banks on technology adoption, designing, managing the technology platform and the measures to address the challenges, frauds, risks involved on adoption of technology. Adoption of technology is not an overnight ride for the Indian banks but it started in the early 1980s itself with the usage of the ledger posting machine. Since then the Indian banks are one of the primary users of technology in all the facets of business. The digital revolution has changed gradually into virtual banking today. Understanding the banks in this changing environment has become a challenge. They need to constantly rejuvenate their competitive advantage driven by information technology and competitive pressure.

Meaning of Artificial Intelligence (AI): AI refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making. At the outset, AI was developed to mimic human intelligence, but today it has grown beyond the expectations set at the primary stage. Advancement in data collection, processing, computation power, AI is now utilized to assign variety of tasks, enable connectivity and enhance productivity. (NITI Aayog Report, 2018)

AI is incredibly complex and doesn't represent only a single technology. AI will authorize banking organizations to completely redefine, ways of operation, launch innovative products and services and impact the customer's interventions. In the future, banks will find themselves competing with startup firms leveraging advanced technologies that increase or completely replace human workers with sophisticated technology.

OBJECTIVES OF THE STUDY

1. To understand the importance of AI in the banking industry.
2. To examine the influence of AI in banking related services
3. To identify with the various threats faced by banks on adoption of AI

RESEARCH METHODOLOGY ADOPTED IN THE STUDY

Secondary data has been used in the study. Various company reports, online journals and articles from newspapers are taken up in the study.

INFLUENCE OF AI ON BANKING RELATED SERVICES

1. **AI and Credit decisions:** Lending is an important business decision for banks. This decision has a direct and indirect impact on the economy. One of the critical aspects is the validation of creditworthiness of individuals or businesses seeking such loans. The more the banks have data about the borrower the better will be their credit assessment. AI provides for a faster, more accurate potential assessment of a potential borrower, at a lesser cost and accounts for a more powerful backed decision. The credit scoring provided by AI is based on sophisticated complex rules when compared to the traditional models used by the banks. This information helps the banker to distinguish high risk applicants with credit worthiness but not an extensive credit history. Usually the amount of loan is tied to the assessment based on the value of collateral and taking future value into consideration. Digital banks and loan issuing apps have started using machine learning algorithms to use alternative data to evaluate credit eligibility and provide personalized options. It is predicted that usage of AI will cut losses to a greater extent.
2. **AI and Risk Management:** It is difficult to overestimate the impact of AI in financial services when it comes to risk management. Enormous processing power allows huge amounts of data to be handled in a time and cognitive computing helps to manage both structured and unstructured data. This would be difficult for a human to do at one time. Algorithms analyze the history of risk involved cases and identify the early signs of potential future issues in credit decisions. AI in banking is being applied to those processes to eliminate the time intensive and error prone work involved in customer data from contracts. Enhanced handwriting recognition, natural language processing and other technologies with intelligent process automation tools are being used in back office operations to handle a variety of bank outflows.
3. **AI and Fraud Management:** With the number of credit cards, digital channels usage going up, the number of fraud cases has also augmented. AI has been successful in battling the financial fraud and the future is relatively bright because machine learning usage has relatively reduced the number of financial frauds cases. Fraud detection systems have helped the bankers to analyze the clients behavior, transactions, location. This helps to trigger a security mechanism when something suspicious is observed or contradicts the established spending pattern. The financial sector has faced a global economic loss of about \$600bn as per a recent McAfee report. But as the technology landscape changes banks are rapidly changing ways to counter threats and frauds. New models based on AI and fraud management are being developed to discover fraudulent transactions.
4. **AI and Trading/Portfolio Management:** Robotic process automation plays a major role in settlement of security transactions through reconciliation and validation of information for security related transactions. Data driven investments has witnessed a steady increase over the past 5 years. It is also called

algorithmic, quantitative or high frequency trading. Intelligent trading systems have both structured and unstructured data and the processing time have reduced significantly. The prediction time for stock markets has become more accurate due to the fact that algorithms can test trading systems based on the past data and the validation level. Based on a specific investor's goal whether short term or long term, strong portfolio can be built with the help of AI.

5. **AI and individual investors:** AI has explored new ways to provide additional services to individual investors. AI has chatbots which offers instant self help solutions to customers in turn reducing the burden on the call centres. Such tools can check balances, schedule payments, look up account activity, give savings tips and more. A number of financial apps have been developed to helps individuals achieve financial goals. These intelligent systems track income level of the individual, essential recurring expenses and spending habits and come up with optimized plans and financial savings tips for the future. Some of the US Banks have developed apps which give reminders to pay bills, chart out their expenses and interact with the banker for any information in a rationalized manner.
6. **AI and process automation:** Robotic Process Automation (RPA) helps to cut operational costs and boosts productivity. This has made industry leader to look more for this. Variety of time consuming and repetitive tasks can be automated by intelligent character recognition. AI enabled software helps in generating reports after verification of data from documents and forms based on the various parameters. Employing robotic process automation for repetitive tasks has eliminated the scope for human error and allows the financial institution to refocus human efforts on tasks that require human involvement.
7. **AI effect on small banks:** Data and analytics have become a competitive edge for bank and financial services. Small banks are adopting AI slowly when compared to their larger counterparts. Hence they can look forward for collaborations with similarly situated entities who share a common interest and goal in advanced usage of AI. Small banks can take advantage of the technology despite the fact that it is not upto their budget
8. **AI and regulatory compliance:** Banking is one of the most regulated industries across the globe. Government uses their regulatory authority to make sure banks accept their bank profiles to avoid large scale default. They try to make sure bank customers are not using banks as a channel to do financial laundering and frauds. Banks have to comply with the regulations to know their customers, prevent money laundering, monitor money transfers, prevent money laundering and comply with various regulations. To perform all these activities, banks are looking at AI to monitor transactions, keeping an eye on customer behavior and log information to various compliance and regulatory systems.

THREATS POSED BY AI

Just in a short span of time AI has carved out a niche for itself in almost all the sectors of the economy. The banks have been one of the early adopters of AI with augmented usage of chatbots and virtual services.

1. **Loss of Jobs:** The augmented usage of AI in banks will lead to work reassignments, automation and job loss. AI with a view to increase enterprise productivity will reshape the way employees deliver their job assignments. This may lead to employee dissatisfaction paving way for more resignations, retrenchment, employee layoff. There is every chance that in the future the jobs of the teller, finance managers, customer service executive, loan processing officer, compliance officer may vanish from the banking scenario.
2. **Lack of clarity of processes:** Majority of the times deep learning models and neural networks used in AI have proven to be perfect in decision making but are not transparent enough to reveal the basis for such conclusions. This becomes a real challenge to the bankers to justify the same to the regulators as it is against the privacy principles. There is every chance that banks are exposed to various kinds of risks and biases in decision making.
3. **Time:** Considerable time is required to build optimal machine learning models to earn desired results.
4. **Cyber security:** Data is considered as the lifeblood of AI and any exposure arising from an unidentified source is prone to serious problems and has an impact on business. RBI has set up the Cyber Security Framework in Banks to have a board approved for assessment of monitoring and assessment mechanisms. It should be recognized that the cyber security policy should be distinct and separate from the complete information policy and promote the identification of risks and take appropriate measures to deal with them.
5. **Reduced customer loyalty:** Less customer contact and lack of essence of human touch may lead to customer loyalty. Banks have an emotional attachment as they help people realize their life dreams. With automation, all this is lost. The backward groups of society are the worst affected as they are unable to cope up to the digital divide.
6. **Lack of quality internet connectivity:** In a decade, India has taken the pride of jumping from a 4% internet connection to 30% in 2016. But the quality of the internet access has not increased at the same rate in this decade. The development of AI technologies is closely related to 5G networks, expected not to be deployed until 2020 and five years from then for complete development. Lack of quality internet even from mobile phones has restricted the users to utilize the full range of services available.

CONCLUSION

The benefits of AI are multiple in nature but the risks cannot be ignored. AI is changing the business processes and customer facing services in the financial sector of the country. Further it is also used to meet the regulatory compliances, detect different kinds of frauds and assess the individual credit worthiness of the customer. The application of AI has the potential to create more efficient business opportunities, offer personalized services and assist in achievement of larger targets in the country like financial inclusion. Despite multiple benefits still a number of problems hang around for the development of the AI sector- a few being different languages prevalent in the country, consumer trust, data and security. Security standards must be increased in the context of potential threats specific to systems employing AI solutions.

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A STUDY OF GOVERNMENT ORGANIZATIONS MEDICAL EQUIPMENT BUYING PROCESSES, THE CASE OF ETHIOPIA

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ABSTRACT

In recent years the government of Ethiopia has shown its commitment to improving the healthcare service of the country by building and equipping several healthcare facilities. The government's budget for a healthcare facility is also increasing from time to time. As a result, the medical equipment market size has recorded a significant growth and attracted different manufacturers. The objective of the study is to assess and develop the medical equipment buying process of Ethiopian government organizations to help scholars and marketers understand, analyze, and explain how government organizations in Ethiopia buy medical equipment. Initially, a comprehensive literature review was conducted to identify factors affecting the organization's buying process. Then Secondary data was used to understand the procurement methods and buying process of government organizations. Five tender documents, government procurement policies, directives and manuals were analyzed. Moreover, five-group discussions were conducted with experts of Medical Equipment buyers. The study has a significant contribution to understanding Ethiopian government organizations medical equipment buying process. It is not possible to have a standard buying process for different procurement methods and buying situation. The buying process of an organization will be determined by the procurement method to be used and the buying situation.

KEYWORDS

government buying behavior, government buying process, group purchase.

JEL CODE

H50, H51.

1. INTRODUCTION

In recent years the government of Ethiopia has shown its commitment to improving the healthcare service of the country by building and equipping several healthcare facilities. The government's budget for the healthcare sector is also increasing from time to time.

The Ethiopian Pharmaceuticals Supply Agency (EPSA) is the primary medical equipment buyer in the country. In 2018 alone, the agency has made procurement of medical equipment worth 450 million USD. Besides the procurement made by PFSA, different regional Health Bureaus and Government University hospitals have made massive medical equipment procurement.

In order to tap the Ethiopian medical equipment market opportunity, the understanding of the organizational buying process is essential. While developing their marketing strategies, organizations are advised to base their strategies on the buying behavior of their target market (Frederick E., Webster Jr. and Yoram Wind 1996:52).

2. LITERATURE REVIEW

The understanding of organizational buying behavior is complex due to the involvement of different variables. In organization buying behavior, complex technical consideration has to be made, the purchasing value of goods is high, and many individuals within and outside of the organization are involved in the buying process (Kotler and Armstrong 2006). As a result, organizations take a longer time to make a purchase decision.

Since the mid-1960s, different scholars have defined organizational buyer behavior. One of the most popular definition found in different literature defined organizational buying behavior as "any structural conceptualization or framework to represent all or a part of the variables that explain the purchase and use behavior industrial good users as well as the attitudes and decision processes which occur before, during and after the product purchase." (Essien & Udo-Imeh, 2013:55)

Organization buying is a process that is affected by the type of procurement method and buying situations.

2.1 BUYING PROCESS

Most of the organizational buying behavior studies and organizational buying behavior models have considered the buying process as one of the most critical elements in organizational buying behavior model development (Wind & Thomas, 2010). The 1972 Webster and Wind and the 1996 Johnston and Lewin organization, buying behavior model, were such models where buying process was an essential element of their model.

While organizations are buying products and services, they go through different buying stages before making the buying decision. Several scholars suggested the organizational buying process with different buying stages. One of those scholars was Webster and Wind. In 1972, Webster and Wind suggested a five-stage buying process; Problem recognition/need identification, "Establishing specifications," "Alternative identification," "evaluation of alternatives," and "selecting suppliers" (Webster and Wind, 1972). In 1996, Johnston and Lewin came up with an eight-stage buying process; "need identification, Determining Characteristic, establishing specifications, Identifying the potential source, requesting proposals, evaluating proposals, selecting the supplier and post-purchase evaluation" (Johnston and Lewin, 1996). Further (Wind & Thomas, 2010) suggested a twelve-stage buying process "need identification, establishing specifications, alternative searching, establishing contact, set usage purchase and usage criteria, evaluate alternative buying actions, Determine Budget availability, evaluate specific alternatives, negotiate with suppliers, Buy, Use and conducting a post-purchase evaluation."

Even though identifying the stages of the buying process is an essential contribution to the organizational buying behavior literature, there cannot be a general buying process that will work for every buying problem, in different environment and industry.

In the real world, the Buying process depends on different factors, such as the buying situation, the nature of products to be bought, the number of people involved in the buying task, the procurement method, the type and ownership of the organization, etc. As a result, it will be challenging to define a general buying process that can be used by organizations all over the world.

One such case is when organizations use different procurement methods, the buying process differs. When the international competitive tender procurement method is used, the technical specification preparation is completed before inviting suppliers to participate in a tender, and participants will be required to prepare and submit their proposal accordingly. However, in a two-stage bidding procurement method, the buying organization will prepare technical specifications after receiving a concept note or a proposal from potential suppliers. In two-stage bidding, the buying organization will announce the list of items (without specification) planning to buy and will request suppliers to submit their proposal. After assessing the proposals, the buying organizations will prepare its specification and will announce a tender. Based on the specification, tender participants will submit a new proposal.

2.2 FACTORS AFFECTING ORGANIZATIONAL BUYING PROCESS

Mainly, the organizational buying process is affected by the buying situation and the procurement method to be used. As a result, the stages of the buying process differs based on the buying situation and the procurement method to be used

2.2.1 BUYING SITUATION

Buying situations, also referred to as buy tasks (Johnston & Lewin, 1996), "Buy Class" (Robinson et al., 1967), are a critical element of the buying behavior (Wind & Thomas, 2010). The buying situation is one of the factors that affect the buying process. It has been categorized into three categories as "New Task, Modified Rebuy, and straight rebuys" (Wind & Thomas, 2010)

New Task

When organizations buy a product or service for the first time, the buying situation is referred to as a "New Task." As cited by Doyle, Woodside & Michell (1976) Robinson et al., Hill and Hillier, Webster and Wind and Nicosia and Wind, a new buying situation takes a lengthy buying process involving different departments and individuals in the buying process.

Since new buying tasks are influenced by different factors, It is difficult to generalize the buying process of buying task as a lengthy process involving different departments and individuals. In case of emergency new buying task, the buying process is short since the product needs are needed urgently. Moreover, if the value of the product to be bought is small the number of individuals and departments involving will be less and the buying process will be short. Therefore, new buying tasks shall be further classified based on the value of goods and the urgency nature of the goods to be bought.

Modified Rebuys

When organizations buy a product or service with prior experience with some change from the previous purchase, the buying situation is referred to as a "Modified Rebuy." And are considered as "less complex and uncertain, and associated with less risk". Lewin & Donthu (2005)

Change in technology, the value of goods to be bought, economic condition, and purchasing timeline determines a modified buying situation to be simple or complex, certain or uncertain, and the level of the risk. Therefore, characterizing all modified rebuy situation as less complex, uncertain and less risk will not be acceptable.

Straight rebuys

A straight rebuy is a routine buying situation where an organization buys products and services repeatedly. In a straight rebuy, organizations commit with a single supplier for the product to be bought unless the supplier makes a major mistake they will not go in a buying process Anderson, E, Chu, W and Weitz, B (1987).

2.2.2 PROCUREMENT METHOD

Mainly, there are six different types of procurement methods that can be used by organizations while buying goods and services. These include Single source, Request for a quotation, Two-stage tendering, Request for Proposal, Restricted tender, and Open tender. The selection of an appropriate procurement method is decisive for the success of the procurement activity Githinji, M. & Moronge, M. (2018).

3. IMPORTANCE OF THE STUDY

The study will help scholars and marketers understand, analyze, and explain how government organizations in Ethiopia buy medical equipment. Currently, little is studied about organizational buying behavior in the context of Ethiopia. As a result, the study will contribute its part in fulfilling the gap in the current literature and identifying future areas of research.

4. STATEMENT OF THE PROBLEM

Although government organizations make the largest purchase of medical equipment in Ethiopia, little is known about the medical equipment buying process of Ethiopian government organizations. As a result, it has been difficult for marketers to understand the buying process and base their strategies in systematically conducted studies. Due to this, salespersons are observed making an unsuccessful attempt to sell to Ethiopian government organizations.

5. OBJECTIVES

The objectives of the study are given below:

1. To examine the medical equipment buying process of Ethiopian government organizations
2. To model the medical equipment buying process of Ethiopian government organizations to help scholars and marketers understand, analyze and explain how government organizations in Ethiopia buy medical equipment.

6. RESEARCH METHODOLOGY

Initially, a comprehensive literature review was conducted to identify factors affecting the organization's buying process. Then Secondary data was used to understand the procurement methods and buying process of government organizations. Five tender documents, government procurement policies, directives and manuals were analyzed. Moreover, five-group discussion was made with a group of different experts from medical equipment buying organizations. Purposive sampling method was applied for the group discussion in order to include experts of organizations that buy a significant amount of medical equipment.

Sequential mixed method research was conducted in order to understand and explain the Ethiopian government organization's medical equipment buying process. Initially, a comprehensive literature review was conducted to identify factors affecting the organization's buying process.

The target population of the study is government organizational buyers who buy medical equipment's and are located in the major cities of Ethiopia (i.e Addis Ababa, Hwassa, Dire Dawa, Bahirdar, Adama, Gonder, Jijiga, Assosa and Mekele) except military hospitals.

7. FINDINGS AND DISCUSSION**7.1 PROCUREMENT METHOD**

Government organizations in Ethiopia are expected to follow the procurement directive issued by the FDRE Public Procurement and Property Administration Agency. According to the directive, there are six methods of procurement that can be used by government organizations. These are Open bidding, restricted bidding, Request for quotations, Single source/Direct procurement, Request for proposal and Two-stage bidding.

With the exception of request for proposal method, five of the six procurement methods can be used by government organizations in Ethiopia to buy medical equipment. Request for proposal is used by government organization in order to buy consultancy service.

OPEN BIDDING

An open tender is a procurement method, open for the general public. In this kind of buying method, buying organizations are expected to prepare a tender document and invite suppliers to submit their proposal; all legal suppliers can participate in open bidding. After preparing the bid document, the buying organization shall invite suppliers to submit their proposal by announcing on newspapers, Websites, Radio, or Television.

Open bidding can be either National Competitive Bid (NCB) or International Competitive Bid (ICB) based on the value of the procurement.

- ✓ **National Competitive Bid (NCB)** is an open tender method, where only local suppliers are allowed to participate in the bidding process.
- ✓ **International Competitive Bid (ICB)** is an open tender where all participants from all over the world participates with the exception of companies who has a trade embargo with Ethiopia.

For an open bidding to be international Competitive Bid, the value of the medical equipment to be bought shall be more than 50,000,000 Ethiopian Birr. But, with a special permission from the Federal Public Procurement & Property Administration Agency (PPA), organizations can buy medical equipment whose value is more than 50,000,000 Ethiopian Birr by using NCB Tender.

In an open Bidding, the buyer can request the supplier to submit its proposal in two ways as Single Envelope or Two Envelope. In a single envelope method, the supplier is required to prepare and submit its technical and financial tender response document as one document in one envelope. But in the case of two envelopes, the supplier is required to prepare and submit its technical and financial tender response in a separate document and into different envelopes.

In the case of a two-envelope tender, the technical response document will be evaluated first, and those suppliers who passed the technical evaluation will be considered for financial evaluation. If the supplier fails the technical evaluation, its financial proposal will be returned without opening it. A supplier who passes the technical evaluation and with lowest price will be the winner.

REQUEST FOR QUOTATIONS

Government organizations can also make procurements of medical equipment by a means of collecting quotation from a minimum of three suppliers and by comparing their offer. But the value of the equipment to be purchased shall not exceed 200,000 Birr.

SINGLE SOURCE/DIRECT PROCUREMENT

Government organizations can buy medical equipment directly from a single source in the case of emergency purchases where the delay of purchase creates a problem in the operation of the organization. In case of absence of competitions due to for technical reasons, government organizations can also make procurement directly from a single supplier.

Direct procurement is also allowed when “additional works, which have been not included in the initial contract, have, through unforeseeable circumstances, become necessary since the separation of the additional works from the initial contract would be difficult for technical or economic reasons” (Proclamation No. 649/2009). Moreover, when additional medical equipment is needed, the government organization can buy up to 25% of the original order from the existing supplier without increasing the price of the original order. Consumables and spare parts of existing medical equipment can also be purchased employing direct procurement method

RESTRICTED BIDDING

Restricted tender is a procurement method where the buying organizations invite a limited number of suppliers to participate in a tender. Organizations usually use this type of procurement method in a situation where an open bid fails because of zero or lower number of participants and when there are a limited number of suppliers for the product and service to be bought. In order to use the restricted procurement method, the buying organization shall get approval from the PPA. Similarly, to open tender, the buyer may instruct bidders to submit their tender response either in one envelop or two envelop.

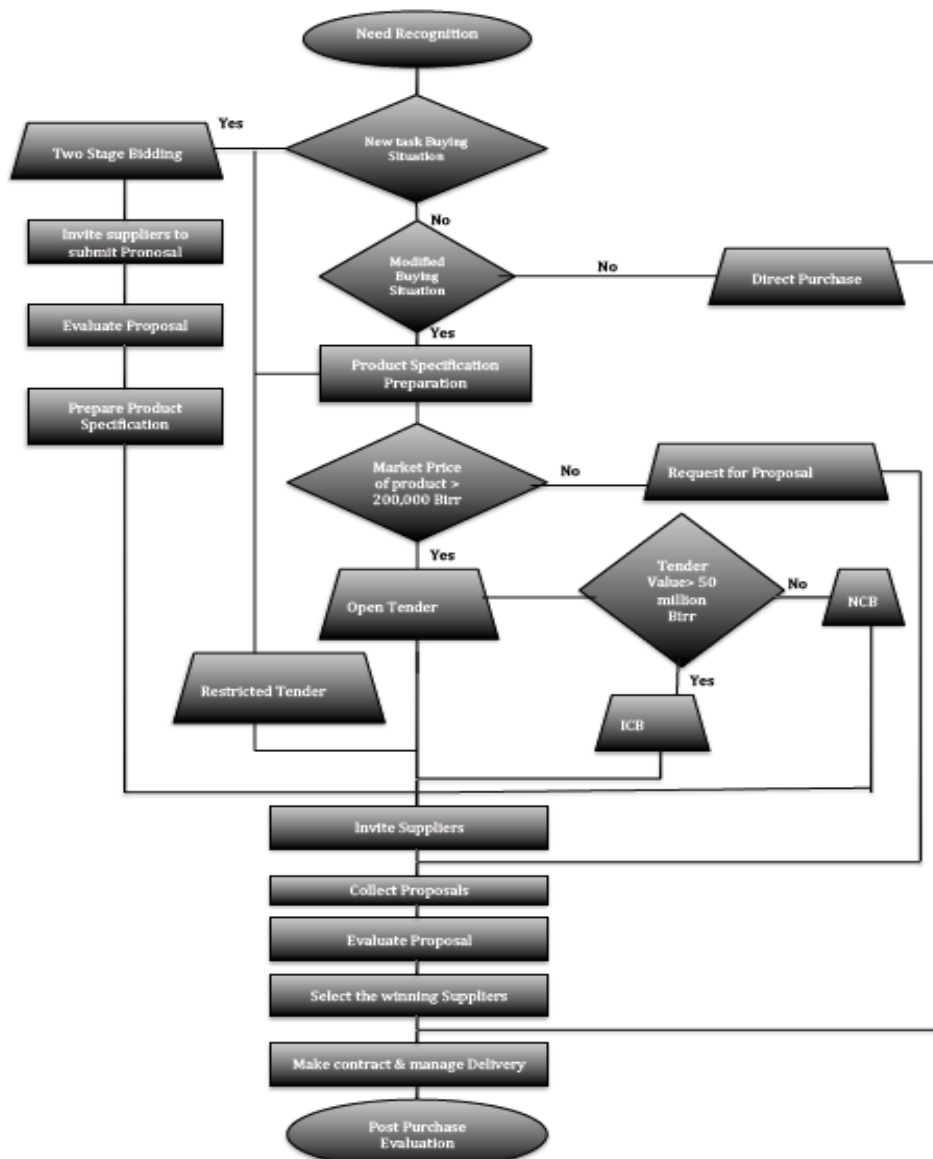
TWO STAGE BIDDING

Two-Stage Tendering Is a procurement method, where buying is accomplished in two stages. Buyers usually use this method of procurement when they are not able to prepare a detailed specification for the pharmaceutical and medical equipment to be bought because of the technical character of the product to be bought. In two stages tendering, suppliers will be asked to submit their proposal for the items to be purchased without a price. Then based on the proposals of the suppliers, the buying organization will develop a specification for the products to be bought and invites suppliers to submit their proposal with a price based on the new specification developed by the buying organization.

7.2 GOVERNMENT ORGANIZATIONS MEDICAL EQUIPMENT BUYING PROCESS

After conducting focus group discussion, interview and analyzing different documents, the below Ethiopian government organizations medical equipment buying process is developed.

FIGURE 1: ETHIOPIA GOVERNMENT ORGANIZATIONS MEDICAL EQUIPMENT BUYING PROCESS



9. CONCLUSION

It is not possible to have a standard buying process for different procurement methods and buying situation. The buying process of an organization will be determined by the procurement method to be used and the buying situation. For example, when the direct source procurement method is used, the buying process will go through the three stages buying process. However, In the case of the two-stage procurement method, the buying process will go through nine stages. Therefore, marketers need to understand the Ethiopian government organizations medical equipment buying process and prepare their sales strategies accordingly

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