

# Study On Standard Costing Practices In Indian Pharmaceutical Industry

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**Abstract :** Standard costing is a traditional cost accounting method and still an significant aid to management for cost control purpose. The aim of this article is to learn the use of standard costing in the Indian Pharmaceutical Industry. With the appearance of modern management accounting tools and techniques pertinent in changed manufacturing environment, some academicians opined that standard costing is an obsolete and outdated tool and should be excluded from the syllabus of cost accounting. But the findings of the study shows that standard costing is still a helpful tool in the hand of management in controlling cost and in building many managerial decisions. This finding is constant with the study conducted in UK, New Zealand, Dubai, and Turkey. This study also determined on the shortcomings of standard costing system and antidote for overcoming them.

## 1. INTRODUCTION

Standard costing is a traditional cost accounting method. This technique of cost accounting is basically applied for finding how much costs should be and finding the causes of variations between how much they are and how much they should be. Business English Dictionary defines standard costing as a system of cost accounting used for calculating the expected cost of a product by using data from similar projects to measure and control the real costs.

CIMA Official Terminology, 2005 defines Standard costing as a control system that enables any variances from standard cost or budget to be analyzed in some detail. They suggested four elements of standard costing system. These are i) setting standard for each operation, ii) comparing actual with standard performance, iii) analyzing and reporting variances arising from the difference between actual and standard performance, and iv) investigating significant variances and taking appropriate competitive action.

Oxford Dictionary defines Standard cost as the estimated cost of a process, resource, or item used in a manufacturing enterprise, entered in an account and compared with the actual cost so that anomalies are readily detectable.

Management of industrialized undertaking can use standard costing techniques in measuring costs of goods sold more economically and for more effective budgeting and price setting. In standard costing system, specific values are assigned to each completed product for each component of material, labor and overhead. Preferably these standard

costs are compared with the actual cost at the end of each month or quarter or year. Those comparisons identify variances screening which standard costs are higher or lower than actual costs. A variance is considered positive if the standard costs exceed actual costs and vice versa. Standard costing can task as an effective management tool if the variances are frequently evaluated.

Due to the fast technological developments in the manufacturing sector, some academicians such as Mike Lucas raised question as to whether it is still suitable to continue teaching this "outdated topic".

Don Hansen and Maryanne Mowen (2002) described it as potentially "dysfunctional". Richard Fleischman and Thomas Tyson (1998) claimed that standard costing cannot provide adequate assistance in the areas of construction strategy and operational management.

In spite of these criticisms against standard costing, some authors observed that this cost accounting tool continues to be extensively used in both manufacturing and service sector throughout the world. For instance, 73% companies in the U.K. and 86% companies in Japan use standard costing system. (Garg, Ghosh, Hudick, and Nowacki, 2003) The above studies demonstrate that standard costing is still a useful tool in the hand of management for cost control, decision making and performance evaluation purpose. This paper describes the current scenario of using standard costing in the Indian pharmaceutical Companies.

The relative importance of the standard costing functions also has been investigated in the study.

## 3. METHODOLOGY OF THE STUDY

The study is based on both primary and secondary sources of data. The study was conducted on the Indian pharmaceuticals industries.

The study examines numerous aspects of standard costing used by the management in the Indian pharmaceutical industry. The questionnaire organized for the study covers

## 2. OBJECTIVES OF THE STUDY

The study is to examine the present scenario of the use of standard costing technique in the Indian pharmaceutical industry.

The study to examine the purpose for which this old costing system used in the sector.

The study also focuses on the reasons for which this traditional method still in use by this sector in spite of the emergence of modern management accounting techniques like ABC, lean manufacturing, six sigma etc.

issues like do accountants and management use standard costing mechanism to make several managerial decisions, how standards are set for request whether they are based on notes or trial runs, whether they are achievable with great effort or not, what variances are used to judge the presentation, how frequently variances are analyzed to organize performance, to what extent variances are used to make managerial decisions. Descriptive statistics have been used to analyze the data.

#### 4. LITERATURE REVIEW

**Luca Pacioli** is regarded as the father of accounting after the publication of "*Summa de Arithmetica, Geometria, Proportioni et Proportionalita*" (Review of Arithmetic, Geometry, Ratio and Proportion") in Venice in 1494. In this book, Pacioli noticed the idea of double entry bookkeeping system. However, Pacioli also discussed some issues of today's cost accounting such as cash budgeting and variance accounting in that book for which he can also be credited with the origins of cost accounting.

British accountant **George P. Norton** is considered as one of the earlier scholar giving the idea of standard costing in his 1889 "Textile Manufacturers' Bookkeeping" (Solomons, 1994).

**John Whitmore** provided the first detailed description of a standard cost system in 1906. G. Charter Harrison designed the first complete standard cost systems in the early 1910s (Chatfield and Whitmore, 1996)

In business, the standard cost system was really introduced from 1920s (**Richard, 1996**). Standard costing was initially promulgated in the late 1910s in the U.S and the U.K. and continued to develop in evolutionary fashion into the late 1940s and 1950s. Britain was not as far behind America in terms of the standard costing practices as has been commonly believed (Fleischman, Boyns, and Tyson, 2008).

Standard costing is applicable both in manufacturing and service industries. **Williamson, 1996** reported that standard costing is applied in Petroleum refinery industries, pharmaceuticals and chemical industries, automotive industries, canned vegetables and fruit, and fast food restaurant industries. **Hilton, 2001** showed that standard costing is also applied in many service and non-profit organizations.

Most studies revealed that the primary purpose of applying standard costing is to control cost. However, some other uses of standard costing such as evaluating performance, preparing budgets, setting prices, and making decisions are also revealed by various studies. **Buyukmirza, 2003** reported that standard costing has been widely used in developed countries in controlling costs, preparing budgets and pricing products.

Keeping costs within the predetermined level is a major challenge faced by most undertakings in today's highly competitive business environment. With the technological development and globalization, product life cycle becomes shorter. A number of advanced management accounting techniques such as JIT, TOC, TQM, ABC, balanced scorecard, target costing etc, have emerged to control costs, to evaluate performance, and to set price. In such a circumstance, a number of scholars raised a question

whether standard costing is still useful in this advanced manufacturing environment (**Kaygusuz, 2006**).

During 1980-2000, several academicians such as **Kaplan & Johnson (1987)**, **Ferrara (1995)** stated that standard costing and variance analysis become less important for cost control and performance evaluation purpose due to the severe competitive environment.

**Hilton (2001)** noticed that the highly competitive environment and improved production technologies leads to development of new management accounting techniques such as JIT, ABC, TQM, Target costing. He further noticed the decreasing role of labor in the production process and shortened product life cycle also decrease the importance of standard costing.

At the extreme, **Lucas (1997)** opined that standard costing has become obsolete, and the teaching of this costing system should be discontinued.

In response to this question, several studies have been undertaken in various countries by several authors to justify whether standard costing becomes obsolete or is still a useful tool in the hand of management.

For instance, **David Lyall and Carol Graham** conducted a survey among 231 companies in UK and found that more than 90% of the surveyed companies apply standard costing for cost control purposes and 63% of the managers using the technique reported being satisfied in terms of decision-making supports. (**Lyall and Graham, 1993**)

**Maliah Sulaman, Nik Nazli, Nik Ahmad,** and Norhayati Mohd Alwi report in the findings of their study of companies doing business in Malaysia that 70% of local firms and 76% of 21 Japanese firms use standard costing. (Sulaman, Nazli, Ahmad, and Alwi, 2005)

In New Zealand, 73% of finance and accounting specialists still use standard costing. (Guilding, Lamminmaki, and Drury, 1998).

**Marie, Cheffi, Louis, and Rao (2010)** conducted a survey among 100 companies doing business in Dubai (UAE) to justify whether standard costing is still relevant. Their sample contains 57 companies from industrial sector and 43 from service and trading sector. They found that 77% of companies in industrial sector and 39% of companies in service sector are still using standard costing. They found that standard costing remains a favorite cost accounting method among accounting and finance professionals in both industrial and service sectors in this rapidly expanding part of the globe due to its simplicity, flexibility, and affordability.

**Badem, Ergin & Drury (2013)** conducted a study in the Turkish automotive industry as to whether they still use standard costing or not. The study was conducted among all the 13 primary and 300 supplier companies in the automotive industry in Turkey. The findings showed that on an average 77 percent of the companies still use standard costing. The above citations prove that standard costing is still an important tool in the hand of management. The next question is that for what purposes standard costing is still used in both manufacturing and service industries throughout the world. Marie, Cheffi, Louis, and Rao (2010) studied five reasons for using standard costing in Dubai. Their study showed that 90%

of the companies in industrial sector and 71% of companies in service sectors in Dubai use standard costing for cost control and performance evaluation purpose. Whereas these figures were 94% and 40% for costing inventories; 88% and 46% for computing product costs for decision making; 78% and 83% as an aid to budgeting; 42% and 33% for data processing economies in companies in industrial and service sector respectively.

In this study, the author tried to identify the current status of standard costing practice in listed pharmaceuticals and chemical companies in India. This study also examines what purposes are served by standard costing in this sector in today's modern technology based manufacturing and competitive environment.

### **5. ANALYSIS OF THE FINDINGS**

Pharmaceutical industry is one of the important sector in Indian economy. The pharmaceutical industry meets roughly 97% of the total medicine requirements of the local market. It employs about 115,000 employees and the size of the market is around BDT 117 billion. As per the statistics of Director General of Drug Administration in India, the total numbers of firms producing medicine are: allopathic 258, unani 268, homeopathic 79, ayurvedic 201, and Herbal 17. There are more than 100 companies that manufacture various chemicals in India. However, the number of listed pharmaceuticals companies in India are only 28. This study concentrates merely on the listed companies to examine their status of using standard costing system.

The study found that 75% (21 out of 28) of the companies still use standard costing in their companies for different purposes. This demonstrates that in spite of the mutiny of new and modern management accounting tools like ABC, Lean manufacturing, six sigma etc, standard cost did not lose its appeal to this sector in India. The reason behind the choice of this technique as mentioned by respondent is its simplicity.

In response to the question of why do companies use standard costing, the entire of the sampled companies (100%) mentioned cost control and costing inventories, 90% of the companies used for demonstrate evaluation, and 67% used as an aid to budgeting respectively.

One of the questions of the study was: what types of standards are set by the companies. Most of the respondent (57%) replied that they set achievable standard, 19% set current standard, 14% set perfect standard and only 10% set essential standard.

Whether companies choose to use design/industrial studies, trial runs, work study techniques or average remarkable usage, most of the companies favor (48%) average of notable usage method, design/engineering studies method ranked next (24%), and the rest favor the other two methods equally (14% each).

How frequently standards are reviewed by the companies, there are mixed respond in this respect. 28.57% counter that they review standards quarterly, 23.81% mentioned the changes in economic and business conditions, 14.28% review standards annually and with changes in operating

conditions and 9.52% review constantly and the same respondent review semiannually.

The study finds "operating factors" as the most essential reason (as mentioned by 62% of the respondents) for the surfacing of variances. Random factors are ranked next (24%) and very few of respondents traced out poor footage of costs and poor budgeting as the reasons for the emergence of variances.

All of the sampled companies use objects price and quantity variances, sales volume and price variances are used by 86% of the companies, 81% of the companies use variable and fixed manufacturing overheads. Labor rate and efficiency variances are weighted next (71%)

while material mix and yield variances are used by least number of companies 57%.

The study finds "the size of the variance" as the most important factor (47.62%) upsetting the decision of investigating a variance. The controllability of the variance is considered the next (33%) important factor in investigating a conflict. The cost of investigation is weighted by only 15% of the respondent company. However, some of the respondents details that they sometime consider the combination of the factors but the factors as well as the practice is not reliable.

There are a number of shortcomings of standard costing that raise the question of its permanent use in modern manufacturing environments. Most of the respondent companies (52.38%) report that standards place by the entities become outdated quickly as the internal operating situation and external environment change regularly. High automation of operation, bypassing nonstop improvements, and lack of full data are also reported by companies (14.29% each) as the shortcomings of standard costing system.

This study proves that the appearance of more advanced and modern costing techniques such as tilt manufacturing, six sigma, ABC, balanced scorecard, target costing etc, have not made standard costing outdated in the pharmaceutical industries in India. The findings of the study are steady with the findings of study conducted in UK, New Zealand, Turkey, and Dubai.

### **6. CONCLUSIONS**

The endurance of standard costing in the modern manufacturing atmosphere proves its usefulness and superiority. The shortcomings that have been reported by the study can be concentrated or eliminated with the use of McDonaldization and careful and realistic standard setting course. The use of six sigma, ABC, lean manufacturing etc, is not yet popular among the local companies due to the socio-economic infrastructure and lack of skilled technicians in this admiration. However, this study concentrates only on listed pharmaceuticals industries. The picture of non-listed companies in this sector may be different. Also there is a scope of functioning with other manufacturing sector and service industry.

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## APPENDICES:

Appendix-1: Demographic Particulars of Listed Pharmaceuticals and Chemical Companies

SL No.	Name	Establishment Year	Listing Year (DSE)	Paid-up Capital (Million Taka)	Annual Turnover (Million Taka)
1	ACI Limited	1968	1976	398.37	25,822
2	ACI Formulations Limited	1995	2008	450	2,908
3	The ACME Laboratories Limited	1954	2016	2116.02	12,644.91
4	Active Fine Chemicals Limited	2004	2010	1230.44	1395
5	AFC Agro Biotech Ltd.	2010	2014	632.50	599.60
6	Ambee Pharma Ltd.	1976	1986	24.00	344.00
7	Beacon Pharmaceuticals Limited	2001	2010	2310.00	2052.94
8	Beximco Pharmaceuticals Ltd.	1976	1985	3862.44	12,965.51
9	Beximco Synthetics Ltd.	1990	1993	867.00	1187.41
10	Central Pharmaceuticals Limited	1980	2013	942.94	254.56
11	FARCHEM (Far Chemical Industries Ltd)	2007	2014	1364.47	1308.37
12	Global Heavy Chemicals Limited	2000	2013	720.00	680.40
13	GlaxoSmithKline(GSK) India Ltd.	1974	1976	120.46	6688.83
14	The IBN SINA Pharmaceutical Industry Ltd.	1983	1989	224.53	3162.63
15	Imam Button Industries Ltd.	1990	1996	77.00	36.41
16	JMI Syringes & Medical Devices Ltd.	1999	2013	110.00	1213.19

17	Keya Cosmetics Ltd.	1996	2001	7077.02	5588.65
18	Kohinoor Chemicals Company (India ) Ltd.	1956	1988	101.56	2960.86
19	Libra Infusions Limited	1985	1994	12.52	287.00
20	Marico India Limited	1999	2009	315.00	7117.76
21	Orion Infusion Ltd.	1989	1994	203.59	662.84
22	Orion Pharma Ltd.	1965	2013	2340.00	10706.76
23	Pharma Aids	1981	1987	31.20	146.71
24	Reckitt Benckiser(Bd.)Ltd.	1961	1987	47.25	2669.97
25	Renata Ltd.	1972	1979	529.54	11,107.28
26	Salvo Chemical Industry Limited	2002	2011	561.69	214
27	Square Pharmaceuticals Ltd.	1958	1995	6235.87	30281.71
28	Wata Chemicals Limited	1981	1992	78.98	302.14

Appendix 2: The extent of using standard costing by the sampled companies

Status of use	Pharmaceuticals	Chemical	Total
Use standard costing	10 (77%)	11 (73%)	21 (75%)
Do not use standard costing	3 (23%)	4 (27%)	7 (25%)
Total	13 (100%)	15 (100%)	28 (100%)

Appendix 3: The reasons for using standard costing

Standard costing functions	Pharmaceutica ls	Chemical	Total
Cost control	10 (100%)	11(100%)	21(100%)
Costing inventories	10 (100%)	11 (100%)	21(100%)
Performance evaluation	10 (100%)	9 (82%)	19 (90%)
As an aid to budgeting	8 (80%)	6 (55%)	14 (67%)

Appendix-4: Which standard do you set for your company?

Type of Standard	Pharmaceuticals	Chemical	Total
Current standard	2 (20%)	2 ((18%)	4 (19%)

Attainable standard	5 (50%)	7 (64%)	12 (57%)
Ideal standard	2 (20%)	1(9%)	3(14%)
Basic standard	1(10%)	1(9%)	2 (10%)
Total	10 (100%)	11 (100%)	21 (100%)

Appendix-5: Methods used to set cost standards:

Basis of setting standard cost	Pharmaceuticals	Chemical	Total
Design/engineering studies	3 (30%)	2 (18%)	5 (24%)
Trial runs	2 (20%)	1 (9%)	3(14%)
Work study techniques	1(10%)	2(18%)	3 (14%)
Average of historic usage	4(40%)	6 (55%)	10 (48%)
Total	10 (100%)	11 (100%)	21 (100%)

Appendix-6: How frequently standards are reviewed by your company?

	Pharmaceuticals	Chemical	Total
Monthly	0	0	0
Quarterly	4 (40%)	2 (18.18%)	6 (28.57%)
Semi-annually	1 (10%)	1 (9.09%)	2 (9.52%)
Annually	1 (10%)	2(18.18%)	3 (14.28%)
Continuously	1 (10%)	1(9.09%)	2 (9.52%)
With changes in the economic and business condition	2 (20%)	3 (27.27%)	5 (23.81%)
With changes in the operating conditions	1 (10%)	2 (18.18%)	3 (14.28%)
Total	10 (100%)	11 (100%)	21 (100%)

Appendix-7: Why do variances arise?

Cause of variance	Pharmaceuticals	Chemical	Total
Poor budgeting	0	1 (9%)	1 (5%)

Poor recording of cost	1 (10%)	1 (9%)	2 (9%)
Operational reasons	7 (70%)	6 (55%)	13 (62%)
Random factors	2 (20%)	3 (27%)	5 (24%)
Total	10 (100%)	11 (100%)	21 (100%)

Appendix-8: What variances are mostly used by your company?

Type of variance	Pharmaceuticals	Chemical	Total
Material price	10 (100%)	11 (100%)	21 (100%)
Material usage	10 (100%)	11 (100%)	21 (100%)
Material mix	8 (80%)	7 (64%)	15 (71%)
Material yield	8 (80%)	7 (64%)	15 (71%)
Labor rate/cost	7 (70%)	5 (45%)	12 (57%)
Labor efficiency	7 (70%)	5 (45%)	12 (57%)
Variable production overhead	9 (90%)	8 (73%)	17 (81%)
Fixed production overhead	9 (90%)	8 (73%)	17 (81%)
Sales volume	8 (80%)	10 (91%)	18 (86%)
Sales price	8 (80%)	10 (91%)	18 (86%)

Appendix-9: What factors affect the decisions of investigating a variance?

Factors	Pharmaceuticals	Chemical	Total
The size of the variance	5 (50%)	5 (45.46%)	10 (47.62%)
The likelihood of the variance being controllable	3 (30%)	4 (36.36%)	7 (33.33%)
The cost of an investigation	1 (10%)	2 (18.18%)	3 (14.29%)
The interrelationship of variance	1 (10%)	0	1 (4.76%)
The types of standard that was set	0	0	0
Total	10 (100%)	11 (100%)	21 (100%)

Appendix-10: What are the most important shortcomings of standard costing?

<b>Shortcomings</b>	<b>Pharmaceutica ls</b>	<b>Chemical</b>	<b>Total</b>
Non-standards product	0	0	0
Quickly outdated	6 (60%)	5 (45.46%)	11 (52.38%)
High automation	2 (20%)	1 (9.09%)	3 (14.29%)
Ideal is not helpful	0	1 (9.09%)	1 (4.76%)
Ignores continuous improvements	1 (10%)	2 (18.18%)	3 (14.29%)
Lacks detail	1 (10%)	2 (18.18%)	3 (14.29%)
Total	10 (100%)	11 (100%)	21 (100%)