FOOD AND BEVERAGE CONTROL IN SELECTED 2-5 STAR HOTELS IN NAIROBI, KENYA.

Bichage M. Gesage
Department of Hospitality and Tourism Management
Kenya Methodist University

Abstract

The purpose of the study was to determine the types of cost control measures operational in 2 – 5 star hotels and establish if these measures were effective in keeping the cost of sales within acceptable limits. The study was carried in 2-5 star hotels within Nairobi province. Nine hotels were studied.

Measures of independence including Chi-square tests were used to highlight whether significant associations between were different variables. Analysis of variance was performed to test if there were significant differences between the actual and standard food and beverage cost.

The results revealed that there were significant differences between actual and standard beverage costs amongst all the star hotel categories. There were equally significant differences between the actual and standard/target food cost targets. The mean standard beverage costs between the various hotel star categories were significant at 95% confidence level.

Higher star rated hotels were more likely to meet their food and beverage costs than their lower rated counterparts because there was a significant association between the hotel star category and the likelihood of meeting the food and beverage cost targets. Higher rated hotels did not have a serious costs side problem and could make more profits by giving more attention to the demand side, by encouraging more people to consume their services. Lower ranked hotels appeared to have cost side problems. Therefore more profits can be realized by these hotels if they institute more stringent cost control measures.

Key words
Food cost, beverage cost, standard costs, cost variance

INTRODUCTION

Government of Kenya (GOK) in its Economic Recovery Strategy for Wealth and Employment Creation (ERS), recognizes the role played by hotels and restaurants in terms of wealth creation, contribution to Gross Domestic Product (GDP) and its multiplier effect that acts as a stimulus to the growth of other sectors such as transport, entertainment, agriculture, trade and industry (Government of Kenya, 2003, UNCTAD, 2007). Despite this recognition, studies on hotel performance in Kenya have not been accorded adequate attention. This study therefore sought to unravel the hotel performance in Nairobi, Kenya with specific reference to the food and beverage control performance.

Control refers to the limitation of costs to limits that are acceptable for the profitability of a firm (Chartered Institute of Management Accounting Study Text, 1996). Cost saving therefore is therefore aimed at reducing costs from some previously accepted norm or standard. In food and beverage operations, product control assists in the control of quality and of costs (Kotschevar and Tanke 1991; and Ninemeier ,1995). Hotels usually have standard or potential food and beverage cost percentages set annually against which the actual costs are compared. If variances exist then corrective action is implemented to ensure profitability.

The post-election violence in Kenya coupled with global economic recession in 2007 impacted negatively on the hotel performance. The hotels recorded declining revenues as a result. Given that hotel revenues are generally susceptible to political and economic turbulences, it is imperative that they have a reliable control system to cushion them from erratic revenues. There is little data on compiling and handling costs by hotels in Kenya.

The ratio of food and beverage cost to sales is key in controlling the major costs in a hotel. Lillicrap *et al* (2002) say that this ratio expresses food cost as a percent of the sales income. Lundberg and Walker (1999) further report that in America, the food cost percent ranges from 28 percent to 45percent. Cost percentages are important because they provide a means of comparing costs relative to sales and can also be used to compare two or more firms (Dittmer, 2003). Research in this area of study has not been documented in Kenya.
This study also sought to establish the accounting records and ratios used by the hotels in food and beverage control.

Literature review

A developing country such as Kenya requires competitive and efficient enterprises. Such enterprises would typically include hotels and restaurants. The hotels and restaurants therefore need to develop various performance measurements to help them evaluate whether they are achieving their goals. These measurements would typically include financial ratios such as the food and beverage cost percentages. The National Restaurant Association (11th Feb. 2015) report that. The cost of food and beverage was about 30 percent of the sales dollar in the US in 2013/2014. An increase in food and beverage costs is a clue that something is wrong requiring investigation. It is however important also, that reliable control procedures are instituted in order to realise sustainable profits.

Managers in hotels in food and beverage usually pre-determine Standard costs based on a desired level of output (Oliver, 2000; Benjamin, 1986). These estimates are then compared with the actual food and beverage costs in order to determine if variations exist (Benjamin,

1986; Atkinson et al, 1996). If the variances are excessive measures for corrective action can be instituted.

Standard recipe and standard portions. Kinton *et al* (2001), define standard recipes as written formulae for producing a food and beverage item of a specified quantity and quality. The consistency in operations provided by the standard recipe is at the heart of all control and many marketing systems (Davis *et al*, 2002; Gray, 1996).

Par levels. Kotschevar and Tanke (1991) indicate that par levels are used to monitor the flow of beverages from the cellar to a guest at the table. The par level of a bar is based on the amount of product used on the busiest day of the year plus a safety margin of 50%. The bartender controls liquor by comparing the inventory at hand with the par. The essence of establishing par levels is to ensure that barmen do not bring their own drinks form outside to sell to unsuspecting customers.

Standard Costing

Standard costing is the estimating of what future food costs should be in order to provide a basis for comparison (Benjamin, 1986; Oliver, 2000). Actual costs are compared with standard costs in order to determine whether variances from the planned costs exist (Benjamin, 1986). The manager's task is to identify and analyse these variances and take corrective action to ensure that the food costs are contained.

Hypotheses

The study sought to establish the accounting records used in food and beverage control; the operating standard and actual food and beverage costs in 2- 5 star hotels in Nairobi and also to determine the extent to which the target food and beverage cost controls were achieved. These were tested using the following hypotheses:

H_1. There is a relationship between hotel star ranking and the likelihood of meeting the food and beverage cost targets.

H_2. There are differences between the actual and target food and beverage costs in 2-5 star hotels in Nairobi.

Methodology

A descriptive survey was used to investigate the effectiveness of cost control measures in food production and sales. A purposive sampling of all two, three, and five star hotels in Nairobi was obtained from Kenya Tourism Development Corporation (KTDC). A list of all the hotels rated from two, three, and five star was compiled and this formed the sampling frame. From the above sampling frame, three hotels within each star rating (2-5 star) were randomly selected in order to arrive at a study sample of nine hotels or forty percent of the target population.

Chi-square tests were used to highlight relationships between different variables such as staff experience and the hotel star categories. Analysis of variance was performed to test if there were significant relationships between the actual and standard food and beverage cost percentages.

To yield relevant information, the following persons from the hotels took part in the study (table 1). They were randomly being selected from the personnel records.

Table 1. Number of respondents

Respondents	Number	Hotels	Total
Executive Chefs	1	9	9
Cashiers	2	9	18
Barmen	1	9	9
Food and beverage Supervisors	2	9	18
Restaurant Managers	1	9	9
Sous chefs	2	9	18
Controllers/accountants	1	9	9
Waiters	2	9	18
Total			**108**

Results

The social and demographic characteristics of the study population are summarised in table 2. There were huge gender disparities in the occupation, experience and qualification of respondents.

Table 2. Demographic characteristics

CHARACTERSTICS	MALE	FEMALE	TOTAL
Sex n=95	72 (75.8%)	23 (24.2%)	95 (100%)
EXPERIENCE n=95			
0-2 years	14 (58.3%)	12 (46.2%)	26 (27.4%)
3-5 years	21 (87.5%)	3 (12.5%)	24 (25.3%)
6-10 years	8 (66.7%)	4 (33.3%)	12 (12.6%)
> 10 years	29 (87.9%)	4 (12.1%)	33 (34.7%)
MARITAL STATUS n=95			
Single	21 (56.8%)	16 (43.2%)	37 (38.9%)
Married	51 (57.9%)	7 (12.1%)	58 (61.1%)
Qualifications n=88			
Certificate	48 (80%)	12 (20%)	60 (68.2%)
Diploma	11 (61.1%)	7 (38.9%)	18(20.5%)
Higher Diploma	3 (60%)	2 (40%)	5 (5.7%)
Degree	4 (80%)	1 (20%)	5 (5.7%)
Occupation of Respondents n=95			
Managers & Supervisors	16 (69.6%	7 (30.4%)	23 (24.2%)
Chefs	19 (90.5)	2 (9.5)	21 (22.1%)
Control Staff	8 (88.9)	1 (11.1%)	9 (9.5%)
Cashiers	10 (66.7%)	5 (33.3%)	15 (15.8)
Waiters	9 (52%)	8 (47.1%)	17 (17.9%)
Barmen	10 (100%)	0	10 (10.5)

Gender structure and occupation.

A total of 23 (24.2 percent) managers and supervisors were surveyed. Among these 69.6 percent were male and 30.4 percent were female. Among the chefs interviewed, 90.5 percent

were male whereas only 9.5 percent were female. The same scenario was duplicated among the cost controllers who were 88.9 percent male and 11.1 percent female, the cashiers who were 66.7 and 33.3 percent male and female respectively. All the barmen included in the study were male. There was a fairly even distribution of waiters with 52.9 percent male and 47.1 percent female.

Working Experience

Most of the respondents had worked for more than ten years. This was valuable experience and a probable determinant on whether the staff concerned understood the cost concept and therefore aimed at containing it. Those with a working experience of 0 – 2 and 3 – 5 years are 27.4 percent and 25.3 percent respectively. Modal working experience group was that with a working experience of more than 10 years.

Table 3. Working experience in relation to hotel star category

Experience in Years	Hotel Star Class			Total	X^2	P-Value
	H2	H3	H5		19.722	0.003
0-2	11(11.6%)	13(13.7%)	2 (2.1%)	26(27.4%)		
3-5	7 (7.4%)	8 (8.4%)	9 (9.5%)	24(25.3%)		
6-10	8 (8.4%)	1 (1.1%)	3 (3.2%)	12(12.6%		
>10	7 (7.4%)	9 (9.4%)	17(17.9%)	33(34.7%)		
Total	33(34.7%)	31(32.5%)	31(32.5%)	95(100%)		

Five star hotels had staff with the longest working experience of more than ten years and this was represented by 17.9 percent. This percentage steadily reduced as one moved down the ladder of the star rating. Three star hotels recorded 9.5 percent. The trend persisted to the two star hotels, which recorded a 7.4 percent. Two and three star hotels had staff with least experience.

A chi-square test was performed to establish the relationship between the level of experience and the hotel star categories (chi-square 19.722 p- Value 0.003). This meant that there was a very strong association between the staff experience and the hotel star class. From this it was inferred that higher ranked hotels had more experienced staff compared to their lower ranked counterparts and that these hotels were most likely to retain their staff for longer periods of time than the others.

This could therefore imply that five star hotel personnel had a good experience in the regulation and confinement of costs and could be relied upon in keeping waste inefficiency and other cost leaks contained

Training and professional qualifications

Table 4 reveals that majority of the respondents (68.2 percent) had certificate level qualifications. The implication here was that this level of training did not effectively equip one with the ability to prepare and understand food and beverage cost statements. Given that 47.4 percent of these respondents had not undertaken any training in accounting and book-keeping then it was possible they were not technically prepared at taking those measures that curbed costs.

20.5 percent of the respondents were diploma holders whereas Higher Diploma holders and graduates were 5 percent respectively.

The Qualifications of the respondents as seen on table 4 presented unexpected results. There were more qualified personnel in the 2 and 3 star hotels in comparison with those in five stars. 2 and 3 star hotels had 8 percent and 9.1 percent diploma holders respectively in comparison with 3.4 percent found in the five star hotels. 4.5 percent of the higher Diploma holders were found in the 2 star hotels as compared with 1.1 percent in five star hotels. The two and five star hotels had an equal number of degree holders represented by 2.3 percent with 1.1 percent found in the three star category. Interestingly, the highest number of certificate holders represented by 26.1 percent was found in five star hotels as compared to 25 percent found in 3 2star and 17 percent found in 2 star hotels.

Table 4. Professional Qualification in relation to hotel star category

	Professional Qualification	Hotel Star Class			Total	X^2	P-Value
		H2	H3	H5		9.78	O.134
Table 4.3 Training and professional qualifications	Certificate	15(17%)	22(25%)	23(26.1%)	60(68.2%)		
	Diploma	7 (8%)	8 (9.1%)	3 (3.4%)	18(20.5%)		
	Higher Dip	4 (4.5%)	-	1 (1.1%)	5 (5.7%)		
	Degree	2 (2.3%)	1 (1.1%)	2 (2.3%)	5 (5.7%)		
	Total	28(31.8%)	31(32.5%)	29(33%)	88(100%)		

A Chi-square test was performed to establish the relationship between personnel qualifications and the hotel star category(X^2, 9.78, p-Value, 0.134). From this it was inferred that there was no statistical significance between the level personnel of training and the hotel star category the above notwithstanding. There seemed to be no preference for qualifications meaning that all calibres of training were required across all the classes of hotels. This meant that that there was no specific hotel class with more or less trained staff than the others implying that all had the same capacity in monitoring and arresting undesirable cost overruns.

Training in accounting/ book-keeping

Table 5 shows that 19 percent of the senior staff in the hotels did not have any formal training in accounts or book- keeping. On the other hand most of the managers, supervisors and cost controllers had acquired training in accounts when they were formally trained for their certificate/ diploma programs. This therefore meant that those with an accounting background were able to interpret accounting statements and statistical reports on cost patterns. Unfavourable patterns could probably then be noted and corrected. Those with no accounting backgrounds may not have had the same capacity and unfavourable cost patterns might have existed without their knowledge.

Table 5. Training in accounting/ book-keeping

Training AC/Bookkeeping	Frequency	Percent
Trained	14	54
Refresher Trained	2	7.7
Private Tuition	4	15

Job Rotation	1	3.8
Not Trained	5	19
Total	26	100

Staff theft.

Losses from food and beverage thefts directly increase costs. These costs must therefore directly be recouped from the net profits (Hirsch, 1994). Table 7 reveals that a significant 40.2 percent of the staff interviewed indicated that there were staff thefts in their establishment. The enormity of staff theft was not quantified but it could be concluded that since it happened, then the food and beverage costs were increased to undesired levels. Most managers and supervisors confirmed that common forms of employee fraud included alcohol and food thefts, overcharging customers and keeping the difference, padding up bills and bar takings- all these directly increased costs.

Table 6. Staff Theft

	Frequency	Percent
No Staff Theft	29	58
Staff Theft	21	42
Total	50	100

A significant number of the barmen represented by 60 percent employed proper portion control when dispensing beverages. This percentage reported that they specifically used tot measures when dispensing beverages. The remaining 40 percent however indicated that they dispensed beverages using the “free pour system”. The free pour can completely remove all control over the amount of beverage sold in a bar.

Table 7. Bar portion control

	Frequency	**Percent**
Jiggers/Tot measures	6	60
Long Experience/Free Pour	4	40
Total	10	100

Table 8.Accounting records used in food and beverage control

Report	**Daily**	**% Daily**	**Weekly**	**% Weekly**	**Monthly**	**% Monthly**	**Quarterly**	**% Quarterly**	**Total**
Par Levels	12	75%	1	6.25%	3	18.15 %		0%	16(100 %)
Sales histories	25	75.5%	3	9.09%	4	12.12 %	1	3.03%	33(100 %)

Popularity Index	14	58.3%	1	4.16%	6	25%	3	12.5%	24(100 %)
Sales Mix	9	47.3%	4	21.05 %	6	31.57 %		0%	19(100 %)
Food Cost percent	40	90.9%	1	2.27%	3	6.82%		0%	44(100 %)
Production Sheet	27	100%		0%		0%		0%	27(100 %)
Void Sheet	14	100%		0%		0%		0%	14(100 %)
Index Number/Points		0%		0%		0%		0%	0
Seat Turnover	21	100%		0%		0%		0%	21(100 %)
Break-Even Analysis	8	89%	1	11.11 %		0%		0%	9(100%)
Average Check	1	100%		0%		0%		0%	1(100%)
Sales Diary	1	100%		0%		0%		0%	1(100%)
Spoilages	1	100%		0%		0%		0%	1(100%)
Cover Report	1	100%		0%		0%		0%	1(100%)
Food & Beverage Cost Graphs	1	100%		0%		0%		0%	1(100%)

*****Multiple responses allowed

Food Cost percent.

The Food cost percent was the most relied upon cost monitoring and control measure in all the hotels. All the hotels compiled their food and beverage cost percentages on daily basis. Equally important, eight out of the nine hotels prepared monthly average food and beverage cost percentages. Their actual daily food and beverage cost percentages were compared with the standard and any variations were investigated. As seen from table 16 above, 90.9 percent of the respondents confirmed they prepared and/or received these percentages daily whereas 6.8 percent said they prepared then monthly. This in itself confirms the argument of Lillicrap *et al* (2002) who report that the most important food cost accounting system in any hotel is the determination of the food cost percent. It therefore becomes clear that the food and beverage cost percentages are given similar emphasis in the surveyed hotels

Whenever these percentages moved higher than desired, chefs and the control department instituted immediate investigations to establish the cause(s). If the cause was an increase in the market price of raw foodstuff, then appropriate adjustment of the selling prices were made in line with the increase. This was particularly noted in one of the five star hotels.

Sales Histories

A majority of the respondents (75.5 percent) indicated that the sales histories were prepared daily while 12.2 percent prepared or received them monthly. Sales histories was one cost control measures relied by management to monitor the flow of sales versus the corresponding

costs of food and beverage on daily basis. The implication of this finding was that the use of the sales histories was in complete opposition to their intended use as argued by Dittmer and Griffin (1994) who report that they only used to forecast future production quantities. Dittmer and Griffin (1994), further report that the sales histories are a written number of portions of each menu item sold each time it appears in the menu. In the hotels surveyed however, the sales histories were used to monitor the flow of sales and the corresponding costs. Therefore it was probable that these hotels did not have a reliable system of forecasting future production quantities, which if poorly done would lead to the escalation of unchecked costs. Most accounts/control staff prepared the daily sales, month to date sales and year to date sales (appendix -), hand in hand with the daily, month to date and year to date costs of production. The daily food and beverage costs and the accompanying sales were compared with the budget figures and the variances investigated.

Seat turnover.

This operating yardstick was prepared and received by Management only on daily basis. It was neither prepared weekly nor monthly basis. Seat turnover denoted to the number of times a restaurant seat was occupied in one day. Whereas the respondents acknowledged preparing this, it was confirmed that there was no standard or budgeted turnover figures that the management used as a target for their performance. Unless the other cost accounting and monitoring measures were watertight, the implication of this anomaly could then mean that the hotels' forecasting of future production quantities may have been inaccurate. Wastage and theft could have gone unchecked.

Sales Mix

Among the nineteen respondents who confirmed using this yardstick, almost half of them acted on it on daily basis whereas 32 percent of them prepared and acted upon it on monthly basis. The sales mix compared the departmental sales (and costs) with the total sales. Each department or restaurant had their budgeted sales and the corresponding budgeted costs. The actual costs and sales were then compared with the budget and any variances investigated. The sales mix summary from the hotels also included information on separate sales from beer, sodas, wines, spirits, cigarettes and the food bars. Total sales were then computed and the cost of sales subtracted to get total sales (gross profit). From the gross profit figure the following was deducted; write-offs, management complimentary, Value Added Tax (VAT), and the catering levy to get the net profit which was always expressed as a percentage of total sales. This basically was a monthly income statement. The hotels surveyed used these accounting reports to monitor the sales. These reports were up to date and were among the most reliable cost and sales monitoring techniques. This could imply that the losses resulting from sales were minimal.

Break-even Analysis.

Only eight respondents said they prepared or received this analysis daily whereas only one prepared/received them weekly basis. This management tool analysed all the costs in relation to sales for each period time. Unfavourable patterns could then be easily identified. There was however little management emphasis given to the break-even analysis.

The Production Sheet.

This was another accounting report that the respondents used to forecast and monitor the production qualities of food and drink and ensured that there was little overproduction. 27% of the respondents confirmed preparing or receiving them on daily basis.

The Void Sheet
This was mostly prepared on daily basis. However, informal discussions with the chefs confirmed that management paid little attention to the void sheets. Fourteen respondents confirmed preparing or receiving the void sheet on daily basis. Dittmer and Griffin (1994), argue this report reveals the excessive costs arising from the returned food portions. If these returned portions were not given due attention, the kitchen staff may have indirectly been encouraged to be more careless and indifferent when serving food leading to excessive costs.

Popularity Index
The popularity of certain dishes was measured using the above index. Chefs were then about able to plan on how much to produce depending on item's popularity. As seen from table 16 above this accounting report was prepared mostly on daily basis 58 percent of the respondents), whereas 25 percent of the respondents prepared them on monthly basis. It was noted that this index was prepared on daily basis by almost all the hotels. However for it to have sound basis to effectively arrest costs, it ideally should have been prepared on weekly basis.

Other types of cost control reports
There were other accounting reports that were prepared and used to monitor costs and sales. These statistical reports were peculiar to the hotels visited only because they had not been captured in other written literature or had been captured under different titles. They included:

Food and Beverage Departmental Returns Analysis
This report showed the net sales of food and beverage, all purchases, opening stock and closing stock, staff food sales and the staff meals (charged at a nominal rate above the cost rate), staff salary and insurance. This was prepared on monthly basis.

Summary of Sales Report
This statistical report was common in five star hotels. The report was prepared on daily basis. In this report total daily sales from all the major departments were recorded These were further broken down to sales from breakfast, lunches, dinners, snacks, scratch cards, functions, the business centre and even the parking fees. Additionally the month to date sales and the budgeted sales were also computed. From these, the variances from the budgeted figures were then computed on a separate column.

Food Revenue Comparison and Beverage Revenue Comparison
These reports were compiled by the control department. The reports showed the month-to-date and year-to-date sales from each sales outlet. Additionally, the reports also provided comparison with the sales of the same month the previous year and the accompanying deviations. These reports did not show the daily sales and were prepared monthly.

Covers Comparison Report
This report showed the number of covers sold in all sales outlets in the hotels on monthly basis. The total food and beverage sales were computed from which the average sales per cover were computed too. A comparison was then done with the sales from the previous month and the accompanying variances shown.

Operating actual and standard food cost percentages and the extent to which the target food and beverage costs were achieved
The following is hereunder discussed; actual food and beverage costs, standard food and beverage costs, analysis of variance to establish whether there were significant differences

between the actual costs of food and beverage from their mean standard costs. The other areas covered are the magnitude of difference between mean actual food cost percent from mean standard food cost and magnitude of difference between mean actual beverage percent from the mean standard beverage cost percentage.

Actual Food Cost in the 2-5 star hotels

The mean actual food cost percent for the two star hotels was 35.82. The three star hotels had a mean actual food cost percent of 34.89. The five star hotels had the lowest mean actual food cost percent of 32.95 implying that they had a slightly higher profit margin. The average mean food cost percent was 34.57. These mean actual food cost percentages in essence expressed food cost as a percentage of the sales income. These percentages therefore revealed the actual cost performance of each hotel star category. How these actual costs faired against the set standard costs will be discussed later to establish whether the hotels effectively met their in-house targets. Table 17, below further reveals that the two star hotels had the biggest standard deviation of 8.07. This is unlike the three and five star hotels whose standard deviation stood at 2.5. The big deviation in the two star hotels revealed a cost side problem meaning that their cost containment measures may not have been stringent enough to enable them meet their food cost target.

Table 9. Actual Food Cost in 2-5 star hotels

	N	Mean	Std Deviation	Std Error	Minimum	Maximum
H2	12	35.82	8.074	2.331	26	47
H3	9	34.89	2.434	.881	31	38
H5	11	32.95	2.573	.776	29	37
Total	32	34.57	5.326	.941	26	47

Mean Actual Beverage Cost in the 2-5 star hotels

The mean actual beverage cost for the two star hotels was 34.12 percent. Three star hotels had highest mean actual beverage cost of 45 percent whereas the five star hotels had the lowest mean actual beverage cost of 28.35 percent. The five star hotels therefore had the highest profit margin from the beverages. As it has been explained before, these figures represented the actual cost performance of the surveyed hotels. Later on this actual performance will be statistically compared with the standard targets to establish if their beverage costs were effectively maintained. Table 18 further reveals that the two star hotels had the biggest standard deviation of 8.15 implying that the measures taken to regulate and contain beverage costs were not particularly effective at meeting their beverage cost targets.

Table 10. Mean Actual Beverage Cost in the 2-5 star hotels

	N	Mean	Std Deviation	Minimum	Maximum
H2	12	34.12	8.150	23	45

H3	9	45	2.121	41	47
H5	11	28.35	4.225	21	32
Total	32	35.20	8.688	21	47

Standard Food Cost in the 2-5 star hotels

The mean standard Food cost for two star hotels was 33.33 percent whereas that for the three star hotels was 35 percent. The mean food cost percent for the five star hotels was the lowest at 33.00 percent. The overall mean food cost percent for all the hotels was 33.69 percent. According to Lillicrap *et al*, (2002), the standard food cost is the most important tool of the control process because it defines the expected food and beverage costs. If the actual costs are close to this goal, the management is probably doing a good job.

Table 11. Standard Food Cost in the 2-5 star hotels

	N	Mean	Std Deviation	Minimum	Maximum
H2	12	33.33	2.462	30	35
H3	9	35.00	.000	35	35
H5	11	33.00	2.608	29	35
Total	32	33.69	2.250	29	35

Standard Beverage Cost in the 2-5 star hotels

The mean standard beverage cost for two star hotels was 40 percent whereas that for the three star hotels was 45 percent. The mean beverage cost percent for the five star hotels was the lowest at 28.41 percent. The overall mean beverage cost percent for all the hotels was 37.42 percent.

Table 12. Standard Beverage Cost in the 2-5 star hotels

	N	Mean	Std Deviation	Minimum	Maximum
H2	12	40.00	7.385	30	45
H3	9	45.00	.000	45	45
H5	11	28.41	4.527	22	32
Total	32	37.42	8.604	22	45

Analysis Of Variance To Test Whether Each Hotel Star Category's Mean Actual Food Cost Percent Differed According to the Rating Category

An analysis of variance was performed to test if each star category's mean actual food cost percent deviated significantly from the overall mean actual food cost percent. The results showed a significant level of 0.440 and the F-statistic 0-846. This computed result implied that there was no significant difference between each star category's mean from the overall mean actual food cost percent. In other words all the hotels had broadly similar actual food cost percentages. Having established this, it is necessary to check whether the cost controls in various hotels were effective. The mean actual food cost percent will be compared with the standard food cost percent to determine whether statistical differences existed and point out whether cost leaks existed or not.

Table 13. ANOVA: To Test Whether The Mean Actual And Standard Food Cost Percentages for the Different Star Rating Differed Significantly From Each Other

		Sum of Squares	df	Mean Square	F	Sig
Actual Food Cost	Between Groups	48.459	2	24.229	.846	.440
	Within Groups	830.769	29	28.647		
	Total	879.228	31			
In-house Standard Food Cost	Between Groups	22.208	2	11.104	2.391	.109
	Within Groups	134.667	29	4.644		
	Total	156.875	31			

Analysis Of Variance To Test Whether Mean Standard Food Cost Percent Differed Significantly Within and Between the Categories.

Similarly, the analysis of variance to test if the mean standard food cost percent of the various star groups differed significantly from the overall mean between and within the groups was conducted (P- value-0.109, F-statistic 2.391). The implication here was that there was no significant differences between the various star categories' mean standard food cost percent from their overall grand mean standard food cost percent both between and within the groups. In other words all the hotels operated within a common range for their standard food cost percentage. Having found out this, it is necessary to be determine if the food costs were effectively kept by comparing these standard costs with the actual costs to establish if statistical differences existed. It will then be possible to draw conclusions on whether cost leaks existed or not.

Analysis of Variance to Test Whether Each Hotel Star Category's Mean Actual beverage Cost Percent Differed Significantly from the Overall Mean Actual Beverage Cost Percent

An analysis of variance was performed to test whether there were significant differences between the hotel star categories' mean actual beverage costs from the overall mean standard beverage cost (P- value-0.00, F-Statistic, 21.398). It was inferred that the actual beverage costs for all the hotel star categories' differed significantly from the overall mean actual standard

beverage cost. It is this actual beverage cost percentages that shall shortly be compared with the mean standard beverage costs to establish if there were cost leaks and whether the costs were effectively contained.

Analysis of Variance to Test Whether Each Hotel Star Category's Mean Standard beverage Cost Percent Differed Significantly from the Overall Mean Standard Beverage Cost Percent

An analysis of variance was performed to test if the mean standard beverage cost for the various hotel star categories' differed significantly from the overall mean standard beverage cost percent. The computed results showed a significant value of 0.00(> 0.05) and the F statistic of 26.844. This meant that the mean standard beverage cost percentages for all the various star categories' differed significantly from the overall mean standard beverage cost percent both between and within these categories. These results further revealed that these hotels regardless of their category did not operate within uniform standard or target performances. Therefore is a need for these standards to be harmonised.

Table 14. Analysis of variance on the level of significance of actual and standard beverage costs between and within the various hotel star categories.

			Sum of squares	df	Mean Square	F	Sig.
Actual Beverage Cost	Between Groups	(combined)	1394.727	2	697.364	21.398	.000
	Within groups		945.100	29	32.590		
	Total		2339.827	31			
In-house standard beverage cost	Between Groups	(Combined)	1490.146	2	745.073	26.844	.000
	Within groups		804909	29	27.755		
	Total		2295.055	31			

Multiple comparisons on actual and standard beverage costs against various hotel star categories.

A multiple comparison was performed to test whether each star category's mean actual and standard beverage cost percent deviated significantly from those of the other groups at 95 percent confidence level. The results showed that zero was not inclusive in the confidence intervals revealing that there were significant differences in both the mean actual and mean standard beverage costs across the whole spectrum of hotels.

Table 15. Multiple comparisons on actual and standard beverage costs against various hotel star categories

Dependent variable	(I) Hotel Star Type	(J) Hotel Star Type	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				.	Lower Bound Upper	Upper bound
Actual Beverage cost	Hotel Two star	Hotel three Star	-10.8833(*)	.000	-16.032	-5.73
		Hotel Five Star	5.7676(*)	.022	.894	10.64
	Hotel Three stat	Hotel Two Star	10.8833(*)	.000	5.735	16.03
		Hotel Five star	16.6509(*)	.000	11.403	21.90
	Hotel Five Star	Hotel Two Star	-5.7676(*)	.022	-10.641	-.89
		Hotel Three Star	-16.6509(*)	.000	-21.899	-11.40
In-house standard beverage cost	Hotel two star	Hotel Three star	-5.0000(*)	.040	-9.751	-.25
		Hotel Five Star	11.5909(*)	.000	7.093	16.09
	Hotel three star	Hotel Two star	5.0000(*)	.040	.2449	9.75
		Hotel Five star	16.5909(*)	.000	11.748	21.43
	Hotel five star	Hotel Two star	11.5909(*)	.000	16.o89	-7.09
		Hotel Three star	-16.5909(*)	.000	-21.434	-11.75

Analysis Of Variance to Test Whether There Were Significant Differences between the Actual Costs (Actual Performance) and Standard Costs (Potential or Target Performance).

An analysis of variance was performed to test whether there was a significant differences between the actual and standard beverage costs in all the hotels studied as indicated on table 25(F statistic, 3.468, P-value, 0.045). This implied that there was a significant difference between the mean actual beverage cost and the mean standard beverage cost. This meant that the cost controls in place were not stringent enough to effectively keep the cost of sales within the pre-determined targets. This was also an indication that cost leaks did exist. Secondly it should be noted that whether negative or positive variances, there were cost implications. Negative variances reflected poor controls and ineffective cost controls whereas positive variances could also be as a result of fraud.

Table 16. Deviation Beverage Cost

		Sum of squares	df	Mean square	F	Sig.
Between Groups	(Combined)	256.716	2	128.358	3.468	.045
Linear Term	weighted	158.509	1	158.509	4.283	.048
	Deviation	98.207	1	98.207	2.654	.114
Within Groups		1073.230	29	37.007		
Total		1329.946	31			

Analysis of variance between actual and standard Food cost Percentages.

An analysis of variance was performed to test whether there was a significant difference between the actual and standard food costs between the hotel star categories and within each category (P-value, 0.245, Fstatistic-1.475). These computed results implied that there were significant differences between the mean actual and mean standard food costs amongst all the hotel star categories and within each category. The point here was that all the hotels were not able to meet their food cost targets and that cost leaks did exist. Therefore the cost control measures that were aimed at keeping the food costs in check were not effectively instituted.

Table 17. Deviation food Cost

	Sum of squares	df	Mean square	F	Sig.
Between (Combined) Groups	49.245	2	24.617	1.475	0.245
Within Groups	484.036	29	16.691		
Total	533.270	31			

Magnitude of Difference between the Mean Actual Food Cost Percent From the Mean Standard Food Cost Percent

An attempt was made to establish the magnitude of difference between the various hotel star categories' mean actual food cost percent from the grand mean standard food cost percent. As shown in the table below, the deviation range was 12 units and the mean deviation was 2.85 units

Table 18. Magnitude of Difference between the Mean Actual Food Cost Percent from the Mean Standard Food Cost Percent

N	32
Mean	2.85
Median	2.00
Mode	1.00
Range	12
Minimum	0
Maximum	12

Cross tabulation between the Type of Hotel and the Magnitude of Food Cost difference

A cross tabulation was carried out between the type of hotel star category and the magnitude of difference between their mean actual food cost percentages from the grand mean standard food cost percentages. It was revealed that five star hotels represented by 34.4 percent had the least absolute difference between their mean actual food cost percentages from the grand mean standard food cost percent. The three star hotels represented by 25 percent closely followed them though their absolute difference ranged from 0-7. This implied that these hotels were very close in meeting their food cost targets and that their cost controls were fairly stringent although they could still improve. Two star hotels on the other hand had absolute differences that were scattered in the three different groups as shown below. In fact 12.6 percent of the respondents indicated that the absolute difference in this star category ranged from 8-12, which appeared high revealing a accost side problem. This cadre of hotels could make more profits by tightening controls. The two star hotels did not consistently meet their food cost targets.
A chi-square test was performed to establish the relationship between the hotel star category and the likelihood of meeting the food cost targets (chi-square-10.43, P-Value-0.03) as shown in table 30. From these results it was inferred that there was a significant association between the hotel star category and the meeting of their food cost targets. This result implied that higher rated hotels were more likely to meet their food cost targets and this trend moved consistently among the star rating. This could mean that the cost control measures put in place by these hotels were effective at containing their cost of sales. Higher ranked hotels therefore had better food cost control performance.

Table 19. Cross tabulation between the Type of Hotel and the Magnitude of food cost difference

Type of the Hotel	Absolute Difference			Total	X^2	P-Value
N = 32	0 - 3	4 - 7	8 - 12			
Two Star	6(18.8%)	2(6.3%)	4(12.6%)	12(37.5%)		
Three Star	8(25.0%)	1(3.1%)	-	9(25.1%)	10.43	**0.03**
Five Star	11(34.4%)	-	-	11(34.4%)		
Total	25(78.1%)	3(9.4%)	4(12.5%)	4(12.5%)		

Magnitude of Difference between the Mean Actual Beverage Cost Percent from the Mean Standard Beverage Cost Percent

A second attempt was made to establish the magnitude of difference between the mean actual beverage cost percentages of the various hotel star categories from the grand mean standard beverage cost percent. As shown on the table below, the range was 22 points and the mean difference was 3.32 points**.**

Table 20. Magnitude of Difference between the Mean Actual Beverage Cost Percent from the Mean Standard Beverage Cost Percent

N	32

Mean	3.32
Median	1.00
Mode	1
Range	22
Minimum	0
Maximum	22

Cross tabulation between the Type of Hotel and the Magnitude of Beverage cost difference

An attempt was made to establish which hotel star categories were to effectively meet their beverage cost targets. Therefore a cross tabulation between the hotel star category versus their magnitude of absolute differences was carried out as shown on the table below. The cross tabulation revealed that 3 and 5 star hotels represented by 28% and 35% respectively, had absolute differences that were below ten points. This meant that their actual beverage cost percentages were close to the standard beverage cost percent and that the regulation of their beverage costs was fairly stringent. Therefore these hotels were better cost containment performers when compared to the two star hotels. For the two star hotels the absolute difference ranged from 0-22. This difference was excessive and reflected beverage cost leaks. Therefore more profits could be realized if more stringent measures were put in place to regulate and confine these costs.

A chi- square test was to establish the relationship between the hotel star category and the likelihood of meeting the beverage cost targets (X^2-7.62, P-Value-0.022). From these results it was inferred that there was a significant association between the star category of the hotel and the meeting of the beverage cost targets. This meant that higher ranked hotels were more likely to meet their beverage cost targets confirming that they performed better in cost containment than the lower rated hotels.

Table 21. Cross tabulation between the Type of Hotel and the Magnitude of Beverage cost difference

Type of the Hotel N = 32	Absolute Difference		Total	X^2	P-Value
	<=10	>10			
Two Star	8 (25%)	4 (12.5%)	12 (37.5%)	**7.62**	**0.022**
Three Star	9 (28.1%)	0	9 (28.9%)		
Five Star	11 (34.4%)	0	11 (34.4%)		
Total	28 (87.5%)	4 (12.5%)	32 (100%)		

Reliance of Food and Beverage Cost Percentages to Monitor Cost Patterns at the Expense of Other Equally Reliable Procedures.

Food cost percent was the most relied upon cost monitoring measure. The study however realised that excessive attention was paid to these cost percentages sometimes in disregard to

other cost containment measures. It was not established why a lot of input in terms of time, personnel and cost would go into the production of accounting reports which were then kept in the drawers so to speak. Among those statistical reports which were prepared but hardly used for decision making were the seat turnover, the production sheet and the void sheet. As has been seen, chefs would manipulate the food cost by use cheaper quality ingredients and in the process hide the true picture. In view of this, the other reports should have complimented the food and Beverage percentages such that adverse variances could easily be noted.

Investigation of variances

As can be seen from the foregoing there were both positive and negative variances in regard to the actual and standards costs (and sales) of food and drink. All hotels investigated negative variances but only two of them investigated positive variances. Among these two one was a five star and the other a three star. Among these two hotels negative variances in food production elicited queries and doubts on the quality of food that had been served to customers. One food and Beverage once said, *a chef might deliberately bring down his food cost by using short cuts and cheaper ingredients and hence compromise on quality*

Negative variances on the sale of beverages were always investigated and the bar-men/waiters were warned and surcharged.

Positive variances (also called overages) in beverage s costs and sales did not warrant much ado in most hotels except these two. Whenever there were positive variances in the two hotels it was suspected that excess drinks had been sold. They would therefore investigate the source of this excess drinks. Customers overcharges could also be suspected through this were in rare cases. Another probable reason for positive variances could be that corkage changes could have been treated as sales. Additionally, it could be as a result of promotional drinks not having been accounted for. If investigations found that excess drinks were as a result of fraud, the culprit could face summary dismissal.

Conclusion

On the basis of the outlined study findings, the following conclusions were drawn.

Limited training including that of accounting and book keeping on the part of the hotel personnel may have led to their inability to understand, prepare and implement the cost accounting statements some of which are fairly complex.

Long working experience by the staff plays a vital role in enabling the hotels achieve better cost performance.

Cases of cost leaks occur in 2-5 star hotels in Nairobi through theft of food and drink as reported by 42 percent of the respondents in this study.

There were no harmonized standard target performances across the whole spectrum of these hotels since the mean standard food costs and the mean standard beverage costs for different hotel star categories differed significantly.

Theft of sales is minimal especially in five star hotels because the sales control was tightly marked with the use of the summary of the sales reports and the sales mix summaries.

The cost controls put in place in the hotels surveyed were not stringent enough to keep the cost of sales within the pre-determined standard targets, however higher rated hotels were more likely to meet their food and beverage cost targets compared to the lower rated hotels.

5.3 recommendations of the study

The following recommendations and suggestions are made based on the findings of the study.

1. Higher ranked hotels particularly the five stars were more likely to meet their food and beverage cost targets. This meant that the measures they took to control and confine

costs were fairly stringent. It therefore appeared that they did not have a serious cost side problem. Instituting stringer controls may not increase profits These hotels can make more profits by giving more attention to the demand side which will among others involve, improving sales by giving incentives encouraging more people to consume their services. Their favourable cost performance should be emulated by the lower rated hotels.

2. Lower rated hotels on the other hand had serious cost side problems. If they desire to make more profits, stringent controls need to be instituted.
3. The hotel staff should be sensitized on why cost containment is vital for to themselves and all the stakeholders. Proper portion control particularly in the bars should be instituted and the free pour completely discouraged.
4. The hotel industry should not rely only on the cost percentages to monitor and sales patterns. These cost percentages were subject to manipulation by chefs such that the actual performance may have been distorted.
5. Higher class hotels were most likely to retain their staff for longer periods of time than others. It was probable that this staff retention had direct bearing in their favourable cost performance. Therefore lower ranked hotels should institute measures aimed at curbing the high staff turnover.

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