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A BRIEF LOOK INTO FOOD COSTING
(Case Study Towards Purchasing and Inventory Management)

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Abstract: This article describes how foodservice managers can effectively manage cost control in the workplace. Ultimately, this study helps us to better understand how cost control in the food industry can help control expenses and undue costs due to unexpected events. Foodservice managers must understand and manage costs related to their business operations. The foodservice manager, whether in a restaurant, hotel, or institution, has to undertake a myriad of responsibilities, be it accounting, marketing, human relations, general affairs, building and facilities management including maintenance and sanitation, legal issues, waste management, production, and service methods, amongst others.

Keywords: *Foodservice Manager, Cost Control, Control Expenses, Inventory Management, Purchasing*

1. Introduction

The topic of cost management is one of creativity and challenge. Contrary to the prevalent idea of cost control as being ultimately boring, cost management is an engaging challenge to be met.

There are three kinds of managers:

- those who know what has happened in the past
- those who know what is happening now, and
- those who know what is about to happen.

Clearly, the manager who possesses all three traits is best prepared to manage effectively and efficientl (Miler et al., 2005)

There are five key components that are crucial when calculating food cost (Amanda & Tess, 2010). This research paper is to study the factors involved in food costing in order to get a clear picture of what a foodservice manager would be dealing with as they go about their day to day routine. This research paper aims to take a brief overview of various expense cutting measures to reduce expenses in the food & beverage department.

This research paper also attempts to illustrate as a cost control process to keep food & beverage costs under control by cutting costs at the right time, ultimately have the effect of increasing profits (Awasthi et al., 2020). The cost of food is the ratio, the revenue received from the customer compared to the cost of the raw materials to make the food (Joe,2009; Miler et al., 2005; Ron & Kate, 2012). If sales don't always increase profits (Merrick, 2005).

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2. Research Method

This research is based upon primary and secondary data that has been collected from text books, research papers, blogs and websites pertaining to Food Costing. The scope covers the variables involved in Food Costing, main materials and tools, and data collection techniques.

3. Results and Discussion

3.1. Results

By the time the menus are printed, the window of opportunity to modify pricing at ease has closed. This means that getting pricing structure in place needs to be done early on, as early as when the business plan is being drawn. An ongoing formula should be adopted to streamline the pricing process, ensuring competitive yet profitable business.

Whilst software packages are available which have the capacity to input, track and monitor a restaurant's food inventory and pricing, an Excel spreadsheet can suffice to create a workable recipe costing sheet. Using basic mathematical functions it is possible to calculate inventory and recipe costs through simple formulas. A recipe costing formula which is fast and effective is essential. Putting in place a workable system which can be easily updated will make the process of menu pricing far more streamlined.

3.2. Discussion

INVENTORY PRICING

[Business Name]

Date Costed: ______________________

Costed By: ______________________

Notes:

INGREDIENTS

CATEGORY	ITEM	UOM	COST	SERVINGS PER UNIT	UOM	PORTION COST
Meat	Mince Beef	1 KG	$9.00	10	Grams	$0.90
Meat	Leg Ham	1 KG	$7.00	9	Grams	$0.78
Fruit & Veg	Tomato	Piece	$0.40	6	Slices	$0.07
Fruit & Veg	Onion – Brown	Piece	$0.40	4	Slices	$0.10
Bakery	Bread – Brown	1 Loaf	$3.40	22	Slices	$0.15
Bakery	Bread – Sourdough	1 Loaf	$5.80	12	Slices	$0.48
Dairy	Butter	500 G	$4.60	40	Grams	$0.12
Dairy	Milk	Litre	$2.00	40	ML	$0.05
Dairy	Cream	Gram	$2.40	20	Grams	$0.12
Seasoning	Salt	Gram	$3.20	50	Grams	$0.06
Seasoning	Pepper	Gram	$3.10	50	Grams	$0.06
Seasoning	Cumin	Gram	$1.60	40	Grams	$0.04
Oil	Oil – Olive	Litre	$5.00	40	ML	$0.13

Figure 1. How a Supply Chain Inventory

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Based on Figure 1. Demonstrates how a supply inventory may be priced to allow a standard serving size to be quantified across all recipes, making the process of building a recipe catalogue a standardized procedure. Include non-alcoholic beverages in this inventory.

Hard copies of the sheet can be printed and regularly reviewed and updated to ensure relevancy. In the scenario given in FIG 2, the cost of ingredients for the Chicken Curry recipe is $47.22 based on the pricing on the inventory in FIG 1. As can be seen in the illustration, the recipe yields 8 meals of 400 grams each, thus the ingredient cost for a single meal is $5.90. The next step in the process will be identifying and calculating the total costs associated with preparing that meal.

RECIPE COST SHEET			
[Business Name]			
Date Costed:		Recipe Yield: 8 Servings	
Recipe Name: Curry Chicken		Portion Size: Main 400 Grams	
Recipe Cost: CC0015		Portion Cost: $5.90	
Notes:			
INGREDIENTS		COST	
ITEM	QUANTITY	UNIT COST	TOTAL COST
Chicken Fillet	20	$1.60	$32.00
Ham	12	$0.78	$9.36
Tomato	16	$0.07	$1.12
Onion	8	$0.10	$0.80
Butter	14	$0.12	$1.68
Salt	8	$0.06	$0.48
Oil	10	$0.13	$1.30
Curry Powder	8	$0.06	$0.48
	TOTAL COST		$47.22

Figure 2. Build in a Dynamic Spreadsheet

Figure 2. is an example of a recipe built in a dynamic spreadsheet? Set up correctly, any changes to ingredients and pricing are automatically calculated and readjusted including the final cost of the recipe and the cost of each portion.

The list of indirect costs, which all come into play, can be extensive. Things to consider in the final figure should be:

- Kitchen furniture and fixtures and establishment furnishings.
- Premises - including leases, fees and applicable taxes.
- Staff - including in-house and off site administrative and accounting staff.
- Utilities - such as gas, electricity and water.
- Marketing including advertising.
- Taxes - city, provincial and national.

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- Food waste including preparation discarding, perishables and stock loss.
- Waste management.
- Insurances.
- Delivery fees and charges.
- Licences - amongst others establishment and alcohol licensing.

Whilst many of these items are tax deductible, they still have to be factored in as expenses. To accurately assess the cost of overheads, ask the following questions:

- Taking all expenses into account, how much is my daily overhead cost?
- How many meals do I serve on average per day?

To accurately determine the daily cost of running a restaurant, begin by creating a list of indirect costs or overheads such as those listed above. Break each expense down to a daily amount. Then calculate the average number of meals served per day. Each meal served must absorb a percentage of overhead costs - the more meals, the less cost burden.

The equation is: Overheads divided by meals served = Overhead cost per meal.

Scenario A - If daily overheads are $2,000 and you serve 40 meals on average, the cost per meal of the overheads would be $50 or 5%.

Scenario B - If daily overheads are $2,000 and you serve 200 meals on average, the cost per meal of the overheads would be $10 or 1%.

Using overhead costs as a guide, target food-cost percentage can be determined. This will ensure sales will be kept within a positive range. An example of this could be drawn from FIG 2. using Scenario B above and a profit of $2 per plate:

Cost of Food	$5.90
Overheard Cost	$10.00
Profit	$2.00

President of the Restaurant Advisory Service (RAS) in the US, Ron Gorodesky, believes that the most successful restaurants have food cost percentages in the lower end to mid 30's. There is some variance in this rule, with cheaper fare such as Italian cuisine often running around 28% and higher expenditure steak houses closer to the 40% range.

The best strategies to avoid the vagaries of price fluctuations and circumvent the problem of having to change the entire menu pricing constantly, is amongst others to do the following:

- Predictive Evaluation - identify foods which have the most variable prices and the highest price change impact - seafood, lamb or beef may fall into this category.
- Use Buffers - to balance the seasonal or market fluctuations for higher cost items, build in low cost/high return dishes into your menu. Dishes based on staples, vegetables or chicken may absorb some of the impact of unexpected price variations in the high end

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fare.

- Working Relationships - listen to staff feedback regarding pricing especially those working face to face with customers.
- Menu Boards - the use of menu boards for chef's specials or dishes which contain variable cost ingredients, can allow for adjustment of prices simply and quickly.
- Train staff to highlight those meals during the seating process.

Learning how to cost a menu is a fine balancing act. Managing customer expectations whilst remaining competitive and profitable can take time to perfect.
With menu pricing being one of the biggest controllable factors within running a successful food establishment, it literally pays to do due diligence prior to structuring the menu price list.

By understanding how to do food costing and implementing strategies which will reap the highest return for the lowest outlay, it will maximise chances of running a profitable and viable restaurant. Understanding how to calculate a profit margin should begin by assessing the market. High turnover and custom menus might translate into a smaller profit margin.
One way to calculate a profit margin is to begin at the other end of the equation. You may decide that you want your combined food and overhead cost to be 75% of the final sale price. This would mean the pricing equation would look something like this:

Cost of Meal:	$12
Overheads:	$9
Menu Price:	$28 (ex-GST)

This results in a profit of 25% of the sale price - $7.
Alternatively, if the final figure is calculated based on a per plate profit of $5, the equation would look like this:

Cost of Meal:	$12
Overheads:	$9
Menu Price:	$26 (ex-GST)

The resulting profit margin in this case is 19%.Depending on the fare, profit margins may need to be variable on some dishes. Meals which are labor intensive and time consuming may attract a higher premium over the quick and easy. A contingency can be built into the final cost to account for seasonal price fluctuations and incidentals which cannot be predicted, such as drought, which substantially increases the cost of food production. As for beverages, having the capacity to serve alcohol on the premises can be a lucrative asset to the business as there is often good profit margins attached to the sale of alcohol. However, the ability to do this carries additional costs such as licensing premises, staff accreditation and

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labor costs of more trained staff.
Costing alcoholic drinks can be performed in a similar manner to that of costing food and non-alcoholic beverages.
Drinks containing multiple ingredients such as cocktails can be broken down into individual units the same as food. Thus a simple example could be a Whisky and Coke:

Bottle Scotch	1 Litre - $35	Serving size: 35 ml	Cost per glass: $1.22
Coke	1 Litre - $2	Serving size: 100 ml	Cost per glass: $0.20c

The industry standard for beverage costs stands around 20% to 25%. Thus the $1.42 cost of ingredients above would cost the customer $5.68 to $7.10 before VAT.

A contingency also allows for marketing campaigns which may include discounts, loyalty programs or vouchers to encourage repeat customers. Identifying a restaurant start-up's core business demographic translate to setting appropriate menu prices. Fast food, cafes or fine dining restaurants - the type of food establishment owned affects menu prices. Whilst customers may have lowered expectations surrounding service and prices in a fast food eatery, fine dining is associated with butler style wait staff, elegant premises and exquisite food plating. In other words customers pay a premium for their dining experience.

It stands to reason that premium pricing can be a reflection of expectations, premises, the fare and type of custom you attract. Business clientele compared to local neighborhood - inner city versus outer suburbia - will all affect the perception of a business and in turn, its pricing. Being competitively priced is far more of a concern to those who have a business where there is substantial competition. This is where location can have an impact on menu prices. One example of this is airport pricing which is commonly acknowledged to be far more expensive than elsewhere. Part of the answer may lay in the isolated location and high transportation costs or even less competition than major food outlets in the city. Those located in a food court or mall will be more dictated by their competition and thus at the mercy of tight profit margins.

One of the ways to overcome this would be to make a thorough review of the competitions' menu pricing and compare. Identify opportunities to offer a point of difference on the menu or a specialty item or service which will stand out in the competition.

Whilst kitchen supplies and consumables may be tax deductible, catering equipment and commercial kitchen machine values can only depreciate over time.
Operational costs including leasing, utilities and non-food consumables costs (such as food preparation gloves, chefs' clothing and cleaning supplies) are all tax deductible.
The restaurant business is a business of margins. By leasing catering equipment or borrowing money to purchase catering equipment or machinery, it is possible to create an ongoing tax deductible operational expense rather than an asset depreciation expense, and get a meaningful cost cut which adds to the profit margin.

All successful restaurants must formulate business plans which maximise income and minimise expenses.

Being smart about the menu can help improve profit margins considerably. Questions such

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as:
• What is popular?
• What is profitable?
• What should be removed, and
• What needs a refresh?

Needs to be addressed while designing the menu to emphasize the star items, and offering specials in line with seasonal changes.
Knowing how to improve sales is important when it comes to broadening customer base, building relationships and updating existing customers on discounts, news or specials. Online marketing and social media done in-house is an economical way to boost sales without heavy advertising budgets.

Establishing an ongoing relationship with a competitively priced catering sales business who supply equipment and consumables which are durable and backed by a impeccable industry reputation, can be a strong ally.
Savings can also be made in catering supplies such as crockery, bar supplies, cookware, glassware, kitchen consumables and can also be garnered from loyalty discounts, bulk buying and special sales.

Understanding how to monitor catering supplies is also one of the major methods to cut costs. Reducing food waste can save substantial outlay over the course of a year.
Another method many restaurants have implemented involves a move away from mains-with-sides-included, which may not be desired by the customer, into more customised ordering systems. By making sides such as bread, chips, salad and vegetables an optional extra, the cost of the meal can be reduced, making it more competitively priced and also reduce food wastage.

Another cost cut is portion control, which is a vital cog in keeping costs uniform and predictable. Precision kitchen scales and measuring jugs are also a commercial kitchen’s best friends. Tableware and serving crockery should also be of a uniform size across the board to allow for standardised measurements.

The majority of food service managers working within a restaurant or foodservice establishment can attest to the fact that rubbish and food waste accumulation can resemble battling an unslayable monster - one which regenerates daily despite best efforts to keep it at bay (Tara, 2014).

There are two facets to limiting the impact of food waste:
- Wastage during the meal preparation stage.
- Cost of disposing all waste.

Some In-house Strategies that can be done at the establishment include audit, review and assessment on food ordering and storage practices. Streamlining and making these more efficient, such as tracking food waste cycles and looking for more effective and sustainable packaging can result in less waste and reduced costs. Unless properly informed and trained, staff can take a light view of food loss. They often don’t understand the financial and environmental ramifications of improper food ordering, preparation and storage methods. Implement a system which includes pre-emptive ordering strategies. 74 percent of food waste occurs even before it has reached the consumer through:

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- Spoilage.
- Contamination.
- Exceeding 'Use By 'dates.
- Product quality not meeting aesthetic standards.
- Poor food preparation methods.

Preventing spoilage through temperature control is not just a cost management issue. Pathogenic bacteria growth resulting from inadequate storage methods and unsuitable temperatures can be a major food safety issue. This is not simply the problem of keeping food cold, it also means reheating food to the optimum core temperature (at least 70°Celcius for two minutes), storing perishables in suitable commercial fridges (1–4°Celcius) and freezers (below -18°Celcius) and holding food at the correct temperatures - hot above 63°Celcius and cold below 8°Celcius. Training staff in food rotation procedures for cold and dry storage makes a lot of difference in the long run. Clearly differentiate stock which needs to be used first by creating a system or food labelling strategy. Once a customer has their meal in front of them control of food waste is out of our hands. Over a quarter of diners have food leftover on their plate at the end of their meal.

When starting out in the restaurant business, most owners are focused on just keeping their business afloat. Any mention of food waste or methods to reduce the environmental impact of it, are pushed to the back of the proverbial stove as business matters demand constant attention. It doesn't take long however, before the problems surrounding waste disposal become very real on both the environmental and economic front - costing businesses time and money as they look to find manageable, feasible and environmentally ethical methods to manage the considerable waste produced every day. Current solutions to waste management are enabling businesses to embrace both environmentally friendly disposal methods whilst saving the foodservice industry considerable cost.

Every year across the globe, around one third of all the food produced for human consumption is either wasted or lost. That equates to around 1.3 billion tonnes annually. Hence finding effective methods to reduce food waste is not merely a matter of convenience or environmental importance. A UK study found that reducing food waste by as little as 20% can save a restaurant over $3,500 per annum on food costs and $2,000 on waste disposal costs.

4. Conclusion

In the hospitality industry food costing is very important because it requires proper budgeting as cost control can reduce expenses and translate to more profit margin. When properly done and attention given to every detail and process in food costing, its functions results into more profit, also growth and expansion of the hospitality industry. The method and application of food costing and control in the hospitality industry can be achieved through placing as close as possible to accurate budgeting in every sector involved (Onyeocha, et al., 2015).
In the hotel industry portion control methods, when properly implemented or carried out through standardized dosing of goods and ensuring that each item that comes out must be the exact same amount.

To obtain a more accurate picture on food cost, the use of percentage is necessary so food and beverage operations can be determined, amended, moderated or repositioned and re-strategized it is hoped that by controlling the cost of food according to the provisions. Food

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costs consist of production, labor, purchasing and management costs. (Mishra, 2012). Management costs should not overlook the cost of management and staff per hour.
Operational cost is an important factor in food costing; where the cost of labor is the chief operating factor involving expenses on production, time and wages, expenses on maintenance and services and expenses pertaining disposal of waste, amongst others. Operational cost in the industry covers the cost of consumables and all the perishables in the industry and enables the business to expand, meaning increase in the products to be sold, more income for the industry, and the ability to maintain the staff or labor force and maintain other standards of operation in the industry. Operational cost can also be said as the core activities or investment in the industry. Important to note as well is the selling price, which comprise the actual cost of food, including the accumulated cost of production, cost of sales, markup for sales, as it contributes immensely to food costing .

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