

УДК 658.152
JEL Classification: D24

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AN EVALUATION ON THE APPLICABILITY OF STANDART COST CONTROL METHOD IN THE FOOD AND BEVERAGE SECTOR

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In the food and beverage sector, where price is usually determined by the market, it is very important that a business can reduce unit cost to a minimum in order to increase competitive power. Labor cost is the most important cost item in the food and beverage business as well as raw material cost. In order to reduce raw material costs, standard cost control method is an important option for practitioners and decision makers. In this study, it is aimed to investigate the preliminary requirements for the success of the standard cost control method based on the literature and to examine the advantages and disadvantages of the method. The studies in the literature show that the success of the application of standard cost control methods in food and beverage enterprises is dependent on standard prescription and standard portion size in the production process. It has also been found that the predictive accuracy of the inputs of the production is necessary in advance and both internal and external factors play an important role in providing the expected utility. The results of the study will be contribute to the researchers and professionals in the application of the method.

Keywords: Food and Beverage Operation, Standard Cost, Standard Prescription, Control.

Introduction

Food and beverage businesses need appropriate control methods for their business structures in order to obtain the highest output with existing inputs without sacrificing quality, to measure how the food and beverage costs are improved, to track developments, and to determine whether the costs are within predefined or acceptable limits.

It is possible to talk about various cost control methods applied in food-beverage enterprises. Standard cost control is one of them. The method depends on the basis that pre-production costs should be in the context of certain conditions, to compare with post-production realization, and to take corrective measures by determining deviations. In the study, the requirements for the implementation of the method, the advantages and disadvantages of the method are discussed in detail based on the studies in the literature.

Literature review

The importance of cost control methods in the food and beverage business

Food and beverage production process is to prevent loss of value in all processes including procurement, storage, preparation, production and sales, to make the most economical use of materials without compromising quality. Thus, it aims to make efforts to obtain the highest product. In order to

achieve these goals, the system and the data obtained should be well evaluated. Even an effective control system in this process can also be inadequate for some problems to arise. However, it is clear that a well-run control system provides many benefits in operating within these objectives.

These benefits may summarize as follow:

- It helps to report food and beverage data according to certain criteria.
- By analyzing these reports, preventive measures can be taken if there are negative factors in evaluation.
- The cost of materials and gross profits can be determined with respect to the units, and forecasts can be made based on these data.
- It helps to determine the selling price depending on portion cost.
- It contributes to the establishment of the general sales policy of the business.

The control function represents the level of achievement of the objectives of the activities carried out in the enterprise within a specific plan. The process of food and beverage production activities extends to delivery of food and drinks from the supplier to the customer. Leakage or wasting at any stage of the process reduces the effectiveness of the control and this problem may continue until the last chain. Inadequate information system causes the data

to become meaningless, insufficient analysis results and incorrect decisions for the managers.

The food and beverage production process consists of the followings:

- Purchasing;
- Receiving;
- Storage and distribution;
- Production;
- Revenue control.

Depending on the above production processes, the main cost control methods used in the food and beverage sector can be classified as follows:

- Simple monthly cost control method;
- Detailed cost control method;
- Potential cost control method;
- Standard cost control method.

When deciding on the cost control method to be applied in the business, the following points should be taken into consideration (Yilmaz, 2007: 40).

- The method should be able to be adapted to the existing organization.
- The system should be simple and the formalities should be reduced to minimum.
- It must be understandable and continuous,
- The obtained data should be analyzable.
- The data should be appropriate in determining whether the goals and standards being achieved.
- The control system must be economical.
- It must be appropriate for workflow.
- It should be objective,
- The control system must be adaptable to changing conditions.

In the light of the above considerations, the feasibility of the standard cost control method in food and beverage business is examined in the the study.

Applicability of the standard cost control method Implementation on Standardized Cost and Actual

Cost Comparison

This approach is based on the comparison of standards with the actual costs based on food and beverage groups. In order to be able to make this comparison, standard portion size, standard material specifications and standard portion costs must be pre-determined. First of all, in order to compare the total standard costs (such as standard menu prescriptions) to the total actual costs, the number of portions served must be known. It can be reached the total standard cost of each food item by multiplying the number of serviced portions with standard costs in the menu. In other words, this practice is based on the comparison of the sum of the standard costs determined by the standard meal recipes of all meals with the sum of the costs incurred at that time (meals, daily, weekly, monthly etc.).

It is possible to formulize the application as follows:

$$\text{Total Standard Cost of Food} = \text{Standard Portion Cost of Meal} \times \text{Number of Portions Sold}$$

In the formula, direct purchases are first added to the entrance made to the kitchen. Total actual cost can be reached only after the costs of the unsold food (unpaid, personnel food, etc.) have been deducted from the transfer records made in the kitchen (Yilmaz, 2007:161). The number of portion sold is obtained from POS or cashier records. Comparisons of standard costs to actual costs can be made with the help of the «Daily Standard Food Cost Report», which explains the reasons for deviation in cost.

Deviation from standard may arise:

- 1) Change in the prices (Price deviation).
- 2) Loss and waste (usage deviation).

Where market prices are constantly changing, if price changes are not reflected in the predetermined portion cost, deviation occurs. In practice, this problem that emerging as a result of not observing price changes very closely is considered as a price deviation which covers the differences related to the control period. Therefore, the total amount related to this price difference is deducted from the actual cost.

For example:

Steak standart purchase price = 50.0 \$
Actual purchase price = 55.0 \$
Steak Standard total purchase price = 1000.0 \$
The actual total purchase price = 1210.0 \$
Amount of steak used = 22 kg
Total Deviation = 1210.0 TL–1000.0 TL=210.0 \$
Purchase price deviation as Kg=55.0 \$–50.0 \$=5.0 \$
Price deviation = 22 kg×5.0 \$=110.0 \$
Quantity Deviation = 210.0 \$–110.0 \$=100.0 \$

Price and quantity deviation of the business for all food groups can be calculated by a similar approach to the above example. On the other hand, we can summarize the issues that need to be checked regarding quantity and price deviation as follows:

- Whether the change of market prices is determined or not.
- Whether the portion sizes are respected or not.
- Whether or not the production according to standard prescriptions is performed.
- Whether or not the deducted cost items are determined correctly.
- Whether the sales records are correct or not.
- Whether the store inventory records are correct or not.
- Whether the records in the control process are reliable or not.

Even the above mentioned points are taken into consideration, if the possible losses are not taken

into consideration, the standard costs would be lower than the actual costs. However, the lower difference means the greater the effectiveness of cost control system. By using this method, it is possible to compare the costs and sales with the standards for years. On the other hand, costs and sales can also be tracked as departments and groups. The method can be easily applied by large or chain business. But, it is much detailed for small businesses.

Benchmarking in terms of food groups

If variety of food offered is less, the costs for all the meals in the menu can be calculated more easily. However, if the type of food in the menu is too many, the food needs to be grouped. For example; beefsteak, şiş kebab, döner kebab, mixed grill etc. is the basic items of meal and they can be included in the same group. Therefore, it is more rational to follow the standardized and actual food costs as a group.

Another approach is based on the principle of grouping some of the dishes served in the menu as a main meal. The application is based on the standard and actual costs of the selected samples. Monitoring the standard and actual costs of the groups in the approach is done by comparing the total standard costs with the total actual costs.

In the previous method, the total cost is reached by collecting the cost of each food, where as the total costs are obtained in this method by collecting the group costs. In determining the cost according to the groups, deviations related to that group can also be determined. However, although group deviation can be determined, it can not be determined which food source is in the group. The biggest problem with this method is about grouping the foods and their items. However, this method can be applied effectively for foods with a high cost such as meat, fish, chicken, etc. and not too much basic intake.

The basic principles expressed in food production process and control may also apply to beverage. The production process of beverage has the same process, but costing and control of beverage is much easier than food (Ninemeir, 1982: 142). This is due to the widespread use of standard prescriptions for beverages, the easier detection of wastage and losses, and the reliance on controls for more concrete data.

Requirements for implimentation of the standart cost control method

The standard cost control method is based on comparing pre-determined costs with actual costs and examining deviations together with the causes (Bölüköğlu ve Özgen, 2006: 71). The standard cost control method is a method that enables to determine the increase and decrease in the food costs, deviations in food materials originate and thus, provides more realistic results (Çiftçi ve Köroğlu, 2008: 36). Standard cost is the pre-determination of what costs should

be in certain situations. Therefore, in order to determine the standard costs, it is necessary to establish standards at various stages of food and beverage control. Output as inputs should also be standardized at standard cost control method. Otherwise, it is not possible to obtain the expected benefit from this method.

The production needs to be monitored in more detail in the business where the standard cost control method is applied. At the production process, the critical questions needs to be answered such as production quantity, production quality, production method and technique, the ways of achieving standard production and standard portion size. In order to be able to apply the standard cost control method and obtain the expected yield from the system in the business, the following aspects of production should be considered in advance.

These are:

- Menu planning and sales forecasting.
- Making kitchen test.
- Using standard recipe.
- Observation of standard portion size.
- Quality and taste control.

Menu planning and sales forecasting

Menu planning is a process for determining which food and beverage can be produced and marketed. Thus, it is an important tool in determining the food and beverage marketing plan. Issues such as targeting customer volume, the price they can afford, the number of potential consumers, and so on can easily be identified with menu planning. When menu planning is carefully considered, it is also easy to determine the foods preferred by the market. This function also contributes positively to profitability. A good menu planning plays important role on customer satisfaction, repurchase, occupational motivation, increased productivity and management success (Khan, 1991: 40).

Kitchen Test

The purpose of kitchen test is to determine the weight of the purchased food-items before and after the production, and the weight of the portion. Kitchen test makes easy to productivity estimate, planning and the effectiveness of food cost control. According to Yılmaz et al. (2013: 234) the basic tests for standard recipe and standard purchasing are as follows;

- «Raw food test» made on criteria such as quantity, quality, weight, number etc. (for vegetables and fruits).
- «Cleaning or processing test» for beef, sheep, poultry and fish meats.
- «Cooking test» for determining net production after meat processing and cleaning. Cooking test is based on the determination of wastage and loss in cooking, slicing and servicing process.

Standard recipe

Standard recipe is one of the most effective means of controlling food production. In this context, “recipe analysis” or “recipe calculation”, takes account of the quantity and composition of each ingredient, together with, for cooked foods, information on weight change on cooking and vitamin losses (Church, 2015: 40). In other words, it is not possible to talk about effective cost control in an operation where no standard recipe is used. The standard recipe is a set of materials used in a meal as well as quantities, processing sequence, cost of food, portion size, weight and sales price. Standard recipes are usually numbered according to the food groups in terms of effective usage. Standard recipes are widely prepared on a portion basis, but they can also be prepared by considering multiple portions for some dishes (especially pot dishes). It may be difficult to determine the weight of some small entrances in a standard recipe to be prepared for a single portion. After the ingredients in the recipes are identified as quantities, these are no longer subject to standard production requirements and all meals are prepared according to these recipes (Yilmaz, 2012: 239). Maughan et al. (2016: 1436) also indicate that recipes could be a good source of food safety information for consumers and that they have the potential to improve behaviors to reduce foodborne illness.

Price fluctuation and price increase in the market changes the cost of the food items. In such cases, the standard recipes need to be reassessed. Standard recipes are gravimetric. However, in terms of easy usage, the measuring cups corresponding to these weights (for example; 1 cup water 200 grams beans, 1 teaspoon 125 grams salt, 1 soup spoon 20 grams olive oil etc.). In this respect, a usefull scale can be created in the kitchen. Recipe should also be marked in the form together with the cooking time, the cooking style and the preparation steps. If the rules are not followed, it is not possible to obtain the same taste, aroma and quality in the meal.

While standard recipes are prepared at the end of experimental results, many businesses are sampling standard recipes of another business. These businesses formulate their own standard recipes by reorganizing them within the framework of their quality standards.

Determination of standard portion size

Although the amount and weight of the food served differs in terms of the priorities of the business, there are commonly accepted standards for all businesses. However, it is also possible to have different serving sizes for the same meal depending on different sales points and availability of service types such as table d’hote or a la carte menu. The standard portion size is the amount that should be served to the customer from a particular meal. Thus, it is very important in terms of checking whether

the standard recipes are followed or not (Okumş ve Gövce, 2015: 80).

Gram is the main standard quantities for meat meals, while it may be taken as a service plate or service scoop for soups, salads, vegetable meals etc. Therefore, once standard prescriptions are identified, it is necessary to use of standard materials that appropriate to recipes. The setting of such standards provides practicality in terms of quick service in the business.

Quality and taste control

In the food production process, control of standard recipe practices is one of the most effective measures of achieving standard output. A meal cooked according to the standard recipe has many expected features such as taste, appearance, consistency and aroma. In principle, standard recipes provide these features, but if the standards for the ingredients are not pre-determined in detail, if a different brand is used or differences that may occur depending on seasonal conditions, sometimes the same output may be difficult to obtain. For this reason, it is necessary to check whether the output conforms to the standards. Such a control can be made in terms of quality, nutritional value, appearance and taste.

a) Quality control for cooked food

A cooked food quality can be determined by features such as taste, appearance, aroma, color, consistency and hygiene. Satisfaction with the features expected from the cooked food may vary according to different consumer groups. However, there are some standards that consumers seek for a meal. In this context, the following minimum standards can be proposed for a quality meal.

- Contains necessary nutritional items,
- Meet expectations of customers with their appearance and taste,
- Hygiene should be provided in all production and presentation processes,
- Ingredients used should be natural and fresh.

However, cooked food that produced in accordance with standard recipes should be tested before serving by the department supervisor for features such as taste, aroma and appearance. Records of test results must be kept and approved by the kitchen supervisor. Even in the same business, if the meals are cooked according to the standard recipes, the same result may not always be obtained. For example; despite of using new food additives (sweeteners, colorants, antibacterials, aroma supplements, etc.) in the same quantities, different results may be encountered. Therefore, it is possible that some of the problems that may arise from these controls can be removed with minor interventions.

Standard recipe includes food quality, cost estimates, sales estimates, material requirements, staff occupations instead of each other, and so on. It has

also significant contributions to the top management in these issues. In this context, quality food includes the production of cooked food in accordance with hygiene rules as well as the taste, appearance and aroma. Therefore, hygiene rules need to be applied uncompromisingly in all cooking related areas such as purchasing food items, preparing and production stage, equipment usage, working areas and personnel hygiene (Yılmaz et al., 2012: 140).

Procedures and instructions for standard recipe implimentation should be prepared and written by senior management in a business. The necessary informing should be carried out so that the employees can not perceive these controls as a formality. In addition, senior management should guarantee food quality by informing to staff about procedure, order and qualification.

b) Taste, Appearance and Nutrition Control

Preparation and cooking processes have some positive or negative effects on the quality and nutritional value of the dishes at the production process (Yılmaz ve Rahimov, 2010: 336). On the other hand, it is also necessary to facilitate the digestion of a cooked food with proper cooking methods and to make it suitable for the taste of the palate. In order to cook a food in the desired taste, appearance and consistency, proper cooking methods and compliance with standard recipes are important as well as the use of appropriate materials and ingredients. According to Bulduk (2002: 256) additives that used to enrich a meal must be harmless, the amount of use must be determined by law, no negative effect on the quality of the food, non-complex and be in simple structure and be homogeneously distributed in the food.

The purchasing officer must have adequate knowledge of the use of materials. For example; he should know the differences between bacon and fried aubergines or the tomatoes with edible tomatoes and cooked tomatoes. Purchased materials that are not suitable for the purpose of use cause taste, appearance and aroma problems as well as cost increase. In addition, appropriate procurement standards should be specified for the purpose of using kitchenware and the procurement instructions for these standards should be written. Supervision shall be supervised by the senior management whether purchases are made in accordance with procedures and instructions.

Conclusion

The standard cost is the pre-determination of what costs should be within certain circumstances. Thus, standard cost control method is based on comparing pre-determined costs with actual costs. This comparison is valid for output as well as for input. Food and beverage cost control is carried out within a process. One of the most important steps that can affect costs is the production stage. Therefore, the production stage requires a more

detailed study than the other stages. The most important reasons can be listed as change in the menus, high number of input types used in the menus, the lack of knowledge about customer preferences, and the inability to benefit the production excess.

Production stage which forms the basis of the standard cost control method, requires a detailed study. However, the following problems are encountered in practice.

- The customer preferences regarding the menu are not taken into consideration sufficiently.
- The importance and benefit of standardization in production are not adequately explained to personnel.
- Reluctant behavior of cookers to use standard recipes.
- Inadequate use of advanced technology in the production.
- The insensitivity of cookers on the standard portion sizes.

The standard cost control method provides various benefits in controlling food cost in the business. But, it presents serious problems in implementation, especially when price stability and standardization are not sufficient. Because the basis of the method is based on the establishment of standards in practice. Therefore, these standards are based on the assumption that inputs and outputs are standardized in the production process. Otherwise, it is not possible to compare actual costs with standard costs and to determine deviations.

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Received 19.05.2018

Reviewer: ass. prof., ass. prof. N.M. Chupryna

ОЦЕНКА ПРИМЕНИМОСТИ СТАНДАРТНОГО МЕТОДА КОНТРОЛЯ ЗАТРАТ В СЕКТОРЕ ПИЩЕВЫХ ПРОДУКТОВ И НАПИТКОВ

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В секторе пищевых продуктов и напитков, где цена, как правило, определяется рынком, очень важно, чтобы бизнес мог уменьшить себестоимость единицы продукции до минимума, чтобы повысить конкурентоспособность. Стоимость труда – это важнейший пункт расходов в бизнесе пищевых продуктов и напитков, как и стоимость сырья. Для уменьшения затрат на сырье стандартный метод контроля расходов является важным вариантом для практиков и лиц, принимающих решения. Целью настоящего исследования является изучение предыдущих требований к успеху стандартного метода контроля расходов на основе литературы и изучения преимуществ и недостатков метода. Исследования литературы показывают, что успех применения стандартных методов контроля затрат на предприятиях пищевой промышленности и напитков зависит от стандартного рецепта и стандартного размера порции в производственном процессе. Было также обнаружено, что прогнозируемая точность входных данных производства должна быть известна заранее, а внутренние и внешние факторы играют важную роль в обеспечении ожидаемой полезности. Результаты исследования помогут исследователям и специалистам в применении метода.

Ключевые слова: питание и напитки, стандартная стоимость, стандартная рецептура, контроль.

ОЦІНКА ЗАСТОСОВНОСТІ СТАНДАРТНОГО МЕТОДУ КОНТРОЛЮ ВИТРАТ У СЕКТОРІ ХАРЧОВИХ ПРОДУКТІВ ТА НАПОЇВ

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У секторі харчових продуктів і напоїв, де ціна, як правило, визначається ринком, дуже важливо, щоб бізнес міг зменшити собівартість одиниці продукції до мінімуму, щоб підвищити конкурентоспроможність. Вартість праці – це найважливіший пункт витрат у бізнесі харчових продуктів і напоїв, як і вартість сировини. Для зменшення витрат на сировину стандартний метод контролю витрат є важливим варіантом для практиків та осіб, що приймають рішення. Метою цього дослідження є вивчення попередніх вимог до успіху стандартного методу контролю витрат на основі літератури та вивчення переваг і недоліків методу. Дослідження літератури показують, що успіх застосування стандартних методів контролю витрат на підприємствах харчової промисловості та напоїв залежить від стандартного рецепту та стандартного розміру порції у виробничому процесі. Було також виявлено, що прогнозована точність вхідних даних виробництва повинна бути відома заздалегідь, а внутрішні та зовнішні чинники відіграють важливу роль у забезпеченні очікуваної корисності. Результати дослідження допоможуть дослідникам і фахівцям у застосуванні методу.

Ключові слова: харчування та напої, стандартна вартість, стандартна рецептура, контроль.