

Production and profitability of flour confectionary products in different sizes of Bakery Industry in Marathwada region (M. S.) India

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ABSTRACT

In India about 90 per cent of wheat is consumed in the form of chapattis and 10 per cent as bread, biscuits, buns and other bakery products. The bread and biscuits manufacturing in India is reserved for small scale sector. The production of bread in both organized and unorganized sectors is estimated to be 14 lakh tones and 10 lacks respectively. Out of total biscuits manufactured in India, nearly, one third is in organized sector and remaining two thirds in the small and unorganized sector. The study was undertaken in the year 2009-10 & 2010-11. Multistage sampling design was adopted for selection of city, areas and the quality products i.e. yeast leavened and flour confectionery the appropriate statistical technique was used to draw the valid inferences like Tabular analysis, frequency, standard error, standard deviation, coefficient of variation and percentage method were used to analyse the data Result revealed that the cost of raw material utilized in production at different size of bakery firm industry viz. small, medium and large, were RS.5.95, 14.30, 30.30 lakh where as expenditure incurred on fixed cost was Rs. 0.59, 2.43 and 3.46 lakh respectively and variable cost contribute to small, medium and large firm were Rs. 6.72, 8.41 and 36.82 lakh. In case of flour confectionary product result revealed that the cost of raw material used in production at different size of bakery industry viz. small, medium and large were Rs. 9.83, 26.46 and 62.80 lakh respectively.

INTRODUCTION

Bakery industry is one of the largest organized food industry in India. The bread constitutes along 50 per cent of the total bakery product and it is equally popular in urban and rural region. This industry has traditionally been and largely continues to be in the un-organized sector which accounts for about 213 of its production capacity. Present size of bread industry in India is estimated at 1.2 million tones, which in term of money amounts to Rs. 750 crores. Even at this level of production, the per capita consumption of bread in our country as low as 6 slices per person per year (Sanjeev Chowdhry, 1990).

The Indian bakery industry is dominated by the small scale sector with an estimated 50,000 small and medium-size producers, along with 15 units in the organized sector. Baking product is gaining popularity as processed foods size of its strong rural base. Baking products are their availability ready to eat convenience and comparatively good shelf life. The term baking strictly refers only to the operation of heating dough products in an oven. Baking is a heating includes (i) evolution and expansion of gases; (ii) coagulation of gluten and egg and gelatinization of starch; (iii) partial dehydration from evaporation of

water; (iv) development of flavours: (v) changes of colour due to Maillard browning reactions between milk, gluten and egg proteins with reducing sugars, as well as other chemical colour changes (vi) crust formulation from sugar dehydration and (vii) crust darkening from Maillard browning reactions and caramelization of sugars. The term 'baked product' is applied to a wide range of food products, including breads, cakes, pastries, cookies and crackers

In India about 90 per cent of wheat is consumed in the form of chapattis and 10 per cent as bread, biscuits, buns and other bakery products. The bread and biscuits manufacturing in India is reserved for small scale sector. The production of bread in both organized and unorganized sectors is estimated to be 14 lakh tones and 10 lacks respectively. Out of total biscuits manufactured in India, nearly, one third is in organized sector and remaining two thirds in the small and unorganized sector.

Bakery and Confectionery industries played an important role in the early stages of industrialization and development through their backward and forward linkages besides the direct impact they have on employment and rural development.

In India, agro-food processing is particular have recently added significance with the setting up of separate Ministry of Food Processing Industries. It was after this that there has been renewed interest in food processing industries by the academicians, policy makers and administrators.

MATERIAL AND METHODS

SAMPLING DESIGN

Multistage sampling design was adopted for selection of city, areas and the quality products i.e. yeast leavened and flour confectionery. In the first stage, two district viz. Aurangabad and Parbhani city was selected for present study because of higher number of bakery and confectionery firms. In the second stage, 15 areas were selected from each city on the basis of highest numbers of bakery and confectionery firms. In the third stage, from selected areas Ninety bakery and confectionery firms were selected on the basis of highest numbers of bakery and confectionery firms

in Aurangabad and Parbhani city. Detail information about the physical quantities of inputs namely raw materials like Maida, ghee, sugar, milk powder, baker's yeast, baking powder, water GMS, Energy/fuel, etc. and the output produced namely breads, biscuits, cakes, toasts, khari, samosa and their costs, returns and profitability was calculated.

Tabular analysis, frequency, standard error, standard deviation, coefficient of variation and correlation coefficient and percentage method were used to analyse the data in present study.

Coefficient of variation

Coefficient of variation (C.V.) used to measure the comparative variations of socio-economic characteristics. Standard deviation does not give proper idea about variation. To know the dispersion the standard deviation and coefficient of variation were estimated with the following formulae.

$$S.D. = \sqrt{\frac{\sum (Y-\bar{Y})^2}{(n-1)}}$$

Standard Deviation measures the dispersion between the observations.

$$C.V. = \frac{S.D.}{\text{Mean}} \times 100$$

Coefficient of variation is the ratio of standard deviation to mean expressed in terms of percentage.

Tabular analysis

Tabular analysis comprised of arithmetic mean, percentage and ratio. This method was used to determine the costs, returns and profitability per hectare.

Break-even analysis

Break-even point is the point where minimum quantity is defined for processing to justify an establishment cost of industries or minimum quantity of processing required to cover the fixed cost.

Break-even point is the concept of no loss no profit on the fixed and variable cost considering when the factory is operating at the different percentage of crushing capacity. Due to various reasons, the crushing capacity is not attained and thus, the level at which percentage capacity of the factory is not put to loss can be identified and care can be taken to attain this level of minimum crushing to sustain the factory functioning.

If the factory is operating above break-even point, the factory condition is treated as satisfactory and the effort should be made to attain the highest level of efficiency. It also implies that where the trouble lies and how this can be eliminated.

Despite efficient functioning of the Purna co-operative sugar factory an attempt was made to estimate break-even volume of processing

$$BEP = \frac{F_c}{PS - VC}$$

Where,

- BEP = Volume of business or break-even point (ton)
 FC = Total annual fixed cost (Rs. In lack)
 PS = Selling price / ton or receipt realized Rs. / ton
 VC = Variable cost Rs./ ton

RESULTS

Cost of production of yeast leavened product on the basis of size of bakery industry.

The cost of production of yeast leavened products was analysed on the basis of size of bakery industry are presented in table 1. Table revealed that the cost of raw material utilized in production at different size of bakery firm industry viz. small, medium and large, were RS.5.95, 14.30, 30.30 lakh where as expenditure incurred on fixed cost was Rs.0.59, 2.43 and 3.46 lakh respectively and variable cost contribute to small, medium and large firm were Rs. 6.72, 8.41 and 36.82 lakh.

Amongst the various items of expenditure in the production of yeast leavened bakery product the highest cost incurred was observed on the use of maida. The proportion of expenditure on these items of total cost was 37.08 lakh followed by ghee, sugar, yeast, bread improver, milk powder and salt i.e. 5.37, 3.72, 2.94, 0.42, 0.33 and 0.24 lakh, respectively.

sugarcane during the period from 2003-04 to 2007-08, by using following formula.

The profitability of yeast leavened product (YLP) was estimated and presented in table 4.7, it was seen that yeast leavened product (YLP) at small, medium and large firms were Rs.7.31, 20.84, 40.28 lakh, respectively. The gross return was accounted i.e. Rs.8.16, 23.55 and 48.03 lakh rupees respectively and the net profit worked out on variable cost i.e. Rs. 0.86, 2.50, 7.878 lakh in small, medium and large firm, respectively. The cost per quintal of YLP was analyzed and recorded on basis of before baking and after baking were 3042, 3624, 3235 and Rs.2503, 2965, 2657 in small, medium and large bakery industry (firm), respectively. The output input ratio was observed in the different size of firm was 1:1.12, 1:1.13, 1:1.90, respectively. Breakeven point was calculated to yeast leav end product industry. It was observed that BEP in small, medium and large unit i.e. 15.71, 49.99 and 175.27 point. It was in profit or in loss if running below the BEP point it considered in loss and if the running of unit above BEP the unit earning profit. So BEP highly essential to know the position of unit.

Table 1: Per annum cost of production of profitability of yeast leavened bakery products.

Sr. No.	Parameters	Small	Medium	Large
1	Physical output (Q)	240	575	1245
2	Cost of raw material	5.95	14.30	30.30
3	Fixed cost	0.59	2.43	3.46
4	Variable cost	6.72	18.41	36.82
5	Total cost	7.31	20.84	40.28
6	Gross returns	8.16	23.55	48.03
7	Net profit on variable cost	0.86	2.50	7.78
8	Per quintal cost after baking	2503	2965	2657
9	Per quintal cost before baking	3042	3624	3235
10.	Output Input ratio	1:1.12	1:1.13	1:1.19
11.	Breakeven point	15.71	49.99	175.27

Table 2: Per annum cost of production of profitability of flour confectionery products.

Sr. No.	Parameters	Small	Medium	Large
1	Physical output (Q)	172	625	1443
2	Cost of raw material	9.83	28.46	62.80
3	Fixed cost	0.97	4.50	7.20
4	Variable cost	11.10	34.07	76.58
5	Total cost	12.09	38.57	83.78
6	Gross returns	13.51	66.59	100.20
7	Net profit on variable cost	2.41	32.52	23.62
8	Per quintal cost after baking	6830	6428	5806
9	Per quintal cost before baking	5122	48212	4357
10	Output Input ratio	1:1.2	1:1.7	1:1.2
11	Breakeven point	117.00	100.40	633.00

Cost of production of flour confectionery product on the basis of size of bakery industry:

The cost of production of flour confectionery product was calculated on the basis of size of bakery industry are presented in Table 2. Table revealed that the cost of raw material used in production at different size of bakery industry viz. small, medium and large were Rs. 9.83, 26.46 and 62.80 lakh respectively. The highest fixed cost was observed in large bakery firm RS. 7.20 lakh followed by 4.40 and 0.97 lakh in medium and small firm where as the variable cost contributes in the production of various products. The highest cost observed in large firm 76.58 lakh followed by medium and small i.e. 34.07 and 11.10 lakh.

Amongst the various item of expenditure maida rank get first position i.e. 2,16, 5.85 and 14.04 lakh rupees, in small, medium and large firm, next ingredients items of costs are sugar, oil/ghee, egg, cake gel and baking powder were utilized at overall level that are 36.75, 15.92, 2.12, 0.88 and 0.31 quintals respectively and small quantity of colour and essence etc. utilized.

The profitability of flour confectionery product (FCP) was analyzed and presented in table 4.8, it was seen that flour confectionery products total cost was small, medium and large firms i.e. Rs.12.09, 38.57 and 83.78 lakh respectively. Whereas the gross returns was 13.51, 66.59 and 100.20 lakh rupees respectively.

The cost per quintal of FCP and the net profit worked out on variable cost i.e. Rs.1.41, 4.63 and 16.15 lakh in small, medium and large firm respectively. The cost per quintal of FCP was estimated and recorded on the basis of before baking and after baking was Rs.5122, 4821, 4357 and 6830, 6428, 5806 in small, medium and large firm, respectively. The input output ratio was found in the different size of firm was 1:1.2, 1:1.7, 1:1.2, respectively. Break even point was estimated on small, medium, large firm i.e. 117,100.40 and 633 point respectively. If the production is less than the BEP the unit is running in loss and if more than BEP it is in profit.

Table 3: Per annum output produce in bakery firm (Parbhani) (unit/firm)

	Particular	Unit	Group of bakery firm			Overall
			Small	Medium	Large	
I	Baked products					
1.	Bread	q	40.00	180.00	400.00	206.66
2.	Toast	q	15.00	350.00	75.00	41.66
3.	Buns	q	10.00	30.00	100.00	46.66
4.	Pav	q	15.00	30.00	135.00	60.00
5.	Rolls	q	5.00	10.00	30.00	15.00
6.	Khari	q	10.00	30.00	60.00	33.33
7.	Samosa	q	20.00	10.00	25.00	18.33
8.	Pizza	q	5.00	15.00	15.00	11.66
9.	Burger	q	5.00	15.00	60.00	26.66
10.	Puff (non veg.)	q	5.00	5.00	10.00	6.66
11.	Puff (veg.)	q	10.00	30.00	60.00	33.33
12.	Doughnuts	q	50.00	15.00	75.00	46.66
	Total baked products	q	145.00	390.00	990.00	494.00
II	Flour confectionery					
A.	Biscuits					-
13.	Sweet biscuits	q	10.70	24.20	90.00	41.63
14.	Salty biscuits	q	11.05	25.60	75.00	37.20
15.	Cream biscuits	q	0.35	12.10	50.00	20.81
B.	Cake (plane)	q	0.54	14.20	70.00	28.15
16.	Chocolate cake	q	0.54	21.20	50.00	23.91
17.	Veg. cake	q	0.42	11.20	30.00	13.87
18.	Non-veg cake	q	0.42	11.20	30.00	13.87
19.	Cup cake	q	1.20	11.20	30.00	40.80
20.	Pastry	q	1.40	24.90	50.00	20.81
21.	Coconut cookies	q	11.96	25.25	75.00	37.40
22.	Nan khatai	q	11.40	25.60	50.00	29.00
23.	Vanilla biscuit	q	0.63	11.05	20.00	7.25
24.	Plum cake sponge	q	0.30	11.20	30.00	13.83
25.	Fruit cake	q	0.60	11.20	27.00	12.93
26.	Peanut biscuits	q	0.35	11.40	20.00	10.58
27.	Total confectionery products		247.00	748.00	1568.00	854.00

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