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**FIXED ASSET ANALYSIS OF FOOD PROCESSING INDUSTRIES IN
KERALA**

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Abstract: Major industries in India are textile industry, food processing industry, chemical industry, cement industry, software industry, mining industry, steel industry and petroleum industry. Food processing industry in India is a sunrise sector. Good investment opportunities exist in many areas of food processing industry. India is one of the most important producers of food in the world and second largest in arable land, also. Opportunities and challenges of the global food economy have been exposed by the increasing liberalization of the economy. Liberalized overall policy regime, with specific incentive for high priority food processing sector, provides a very conducive environment for investment and export. Availability of raw materials, changing lifestyles and relaxation in policy has given a considerable push to the industries' growth. Food processing industry accounts for about 14 % of manufacturing GDP that is rupees 2,80,000 crores and employees about 13 million people directly and 35 million people indirectly. Though, India is the second largest producer of fruits and vegetables in the world, commercial processing is less than 2% and capacity utilization remains below 50 percentages in this sector. The industry has been many facing problems like low-capacity utilization, technological obsolescence and marketing. Fruit and vegetable processing industry is one of the significant components under food processing industry. A substantial portion of the raw materials required for fruit and vegetable processing units have been wasted due to lack of proper preservation methods. Most of the entrepreneurs who operate on cottage sector and home scales units are not aware of the technological support and assistance available.

Keyword: Food processing industry, Fixed Asset, Fixed Asset Turnover Ratio

INTRODUCTION

The food processing industry is of enormous significance as it provides vital linkages and synergies that it promotes between the two pillars of the economy, i.e. agriculture and industry Kerala

has always been a 'Leader State' in food processing Kerala is characterized by number of significant socio economic, industrial and political peculiarities. Kerala offers conducive environment for setting up any industry. Prominent sectors in Kerala are information technology, tourism, agro based business including food processing, ready-made garments, ayurvedic medicines etc. In 2016, there are 1274 food processing units in Kerala. It provided 30 per cent of revenue from export. Food processing sector gained Rs. 5000 crores from export and had a potential to become Rs 30,000 crores worth industry Food processing industry provides employment opportunities and is highly labor intensive which is suitable to be organized in home scale itself. This study focuses on the fixed asset management adopted by the fruit and vegetable processing in Kerala. Fixed assets are the income generating assets of a business unit. The capital used for the acquisition and development of long term asset is called fixed capital. The nature of firm determines the requirement of fixed capital. Normally, the fixed capital requirement is high in manufacturing concern than that of a trading concern. Fixed capital may contain land, building, electric fittings, tools and other fixed assets and plant and machinery.

Land

Table: 1
Distribution of market value of land based on selected variables

		Mean	SD	N	F	p
Sector	Large scale sector	103000000.0	100215704.9	9	31.71 **	0.000
	Home scale sector	113142.9	85140.7	28		
	Small scale sector	419565.2	515549.7	23		
	Cottage sector	133939.4	178733.9	33		
District of the unit	Alappuzha	2992000.0	10254804.3	15	0.66	0.520
	Ernakulam	8176836.7	35628120.6	49		
	Kozhikode	17196310.3	60193365.4	29		
No of products produced	1	6178418.2	33557206.0	55	2.93	0.059
	2	1375842.1	5120261.9	19		
	> =3	30436000.0	72580179.6	19		
Category	Vegetable	2479727.3	15048448.9	44	2.80	0.066
	Fruit	9157933.3	42010764.8	30		
	Both	29494315.8	72878807.0	19		

Source : Primary Data
 ** Significant at 0.01 level

Average market value of land in large scale sector is considered as high (103000000), followed by small scale sector (419565.2), Cottage sector (133939.4) and finally home scale sector (113142.9). Average market value of land of the sample units have significant variation at 0.01 level ($F=31.71$). Among the districts, Kozhikode district has the market value of land in first position (17196310.3) Ernakulam (8176836.7) and Alappuzha district in last position (2992000). Market value of land is high in sample units that produce three or more than three products (30436000) next goes to single product producing units and finally two product producing units. Sample units that produce both products have the market value of land high (29494315.8) and vegetable products producing units (2479727.3). The average market value of land of sample units of sector wise classification exhibit significant difference, Scheffe multiple comparison examine the difference on pair basis.

Table: 2
Scheffe multiple comparison of market value of land based on sector

		Pair	F	Sig.
Sector	Large scale sector (A)	A & B	26.62**	0.00
	Home scale sector (B)	A & C	25.13**	0.00
	Small scale sector (C)	A & D	27.63**	0.00
	Cottage sector (D)	B & C	0	1.00
		B & D	0	1.00
		C & D	0	1.00

Source : Primary Data
 ** Significant at 0.01 level

Table 2 gave Scheffe multiple comparison of market value of land, large scale sector with home scale sector ($F=26.62$), large scale sector with small scale sector ($F=25.13$) and large scale sector with cottage sector ($F=27.63$) have significant variation at 0.01 level. The average market value of land found to be high in large scale sector than other sectors.

Building

Average market value of building of the sample units is presented below.

Table 3
Distribution of average market value of building based on selected variables

		Mean	SD	N	F	p
Sector	Large scale sector	10000000.0	4841229.2	9	117.2**	0.000
	Home scale sector	247321.4	44793.4	28		
	Small scale sector	619565.2	165652.4	23		
	Cottage sector	460606.1	140177.1	33		
District of the unit	Alappuzha	1076666.7	2474070.3	15	0.40	0.672
	Ernakulam	1640306.1	3898049.1	49		
	Kozhikode	1029310.3	1994032.0	29		
No of products Produced	1	630454.5	1439543.2	55	6.68*	0.002
	2	1273684.2	3330972.8	19		
	> =3	3552631.6	5282162.7	19		
Category	Vegetable	490909.1	718041.8	44	3.41*	0.037
	Fruit	1944166.7	4621201.5	30		
	Both	2444736.8	3553515.3	19		

Source : Primary Data

** Significant at 0.01 level

* Significant at 0.05 level

Table 3, show the average market value of buildings of selected variables. Large scale sector have the market value of building(10000000), small scale sector (619565.2), cottage sector (460606.1) and home scale sector (247321.4). The test have significant variation at 0.01 level (F=117.2). Market value of building is high in Ernakulam district (1640306.1) and low in Kozhikode district (1029310.3). Sample units that produce three or more than three products have market value of building is

(3552631.6), two products producing units (1273684.2) and single product producing units (630454.5). Sample units that produce both products have the market value of building high (2444736.8) and least among the units that produce vegetable products only (490909.1)

Significant difference exists in the sector, number of products produced and the category of the products produced. Scheffe multiple comparison examine the difference on pair basis. Table 4 presented the Scheffe multiple comparison.

Table 4
Scheffe multiple comparison of market value of building based on selected variables

		Pair	F [^]	Sig.
Sector	Large scale sector (A)	A & B	101.8**	0.00
	Home scale sector (B)	A & C	89.45**	0.00
	Small scale sector (C)	A & D	101.12* *	0.00
	Cottage sector (D)	B & C	0.27	0.84
		B & D	0.11	0.96
		C & D	0.05	0.98
No of products produced	1 (A)	A & B	0.3	0.725
	2 (B)	A & C	6.7**	0.002
	>= 3 (C)	B & C	2.7	0.071
Category	Vegetable (A)	A & B	2	0.148
	Fruit (B)	A & C	2.6	0.078
	Both (C)	B & C	0.2	0.860

Source : Primary Data

** Significant at 0.01 level

Large scale sector with home scale sector (F=101.8), large scale with small scale sector and large scale sector with cottage sector also exhibit variation for the average market value of building at 0.01 level (F=89.45 and 101.12) respectively. It can be inferred that, large scale sector have high market value of building than other sectors. Units that produce single product with three or

more than three products have significant variation at 0.01 level (F=6.7).

Plant and Machinery

Average market value of plant and machinery of the sample units are presented below.

Table 5
Distribution of market value of plant and machinery based on selected variables

		Mean	SD	N	F	p
Sector	Large scale sector	17777777.8	14221706.8	9	45.66*	0.000
	Home scale sector	108928.6	41081.6	28		
	Small scale sector	492391.3	151025.8	23		
	Cottage sector	268181.8	114951.2	33		
District of the unit	Alappuzha	916666.7	2518904.7	15	0.76	0.473
	Ernakulam	2776224.5	8791033.1	49		
	Kozhikode	1153103.4	2955307.4	29		
No of products produced	1	608636.4	2213026.8	55	6.14**	0.003
	2	1405263.2	4506327.2	19		
	> =3	6476315.8	12881849.5	19		
Category	Vegetable	381363.6	1112903.9	44	2.50	0.088
	Fruit	3134000.0	9885701.5	30		
	Both	3811842.1	7480634.1	19		

Source : Primary Data

** Significant at 0.01 level

Table 5 gave data relating to the average market value of plant and machinery. Large scale sector have market value of plant and machinery high (17777777.8) followed by small scale sector (492391.3), cottage sector (268181.8) and finally home scale sector (108928.6). The average market value of plant and machinery of the sample units show significant variation at 0.01 level (F=45.66). District wise classification and category wise classification of industry does not exhibit any significant variation. Sample units that produce three or more than three products have the market value high (6476315.8).

Scheffe multiple comparison examine the difference on pair basis of the sample units that show difference in the sector and number of products produced are presented below.

Table 6
Scheffe multiple comparison of market value of plant and machinery based on selected variables

		Pair	F [^]	Sig.
Sector	Large scale sector (A)	A & B	38.96**	0.00
	Home scale sector (B)	A & C	37**	0.00
	Small scale sector (C)	A & D	39.73**	0.00
	Cottage sector (D)	B & C	0.03	0.99
		B & D	0.01	1.00
		C & D	0.01	1.00
No of products Produced	1 (A)	A & B	0.1	0.895
	2 (B)	A & C	6**	0.003
	>= 3 (C)	B & C	3	0.053

Source : Primary Data

**Significant at 0.01 level

Scheffe multiple comparison shows the comparison of market value of plant and machinery of sector and number of product produced by the sample units. Large Scale Sector with home scale sector, large scale sector with small scale sector and large scale sector with cottage sector exhibit significant variation at 0.01 level. Sample units that produce single product with three or more than three products also exhibit variation at 0.01 level (F=6). The average market value of plant and machinery is more in large scale sector and units that produce three or more than three products require huge amount of plant and machinery

Electrical Fittings

Table 7
Distribution of market value of electrical fittings based on selected variables

		Mean	SD	N	F	P
	Large scale sector	583333 3.3	1767767.0	9	317.3 2**	0.000

Sector	Home scale sector	39107.1	28384.1	28		
	Small scale sector	142391.3	58598.6	23		
	Cottage sector	83787.9	30026.8	33		
District of the unit	Alappuzha	430000.0	1266188.0	15	0.16	0.850
	Ernakulam	637346.9	1763669.0	49		
	Kozhikode	757069.0	2079380.7	29		
No of products produced	1	291545.5	1193594.4	55	5.50*	0.006
	2	507894.7	1694272.5	19		
	>=3	178684.2	2721064.5	19		
Category	Vegetable	185568.2	745146.5	44	4.92*	0.009
	Fruit	663166.7	1910267.4	30		
	Both	166184.2	2741000.0	19		

Source : Primary Data

** : - Significant at 0.01 level

Market value of Electrical Fitting is displayed in Table 7, large scale sector have high market value of electrical Fitting (5833333.3) followed by Small Scale Sector (142391.3), Cottage Sector (83787.9) and home scale sector (39107.1). The average value of electrical fittings of the sample units show significant at 0.01 level (F=317.72). Market value of Electrical fitting is high in units that produce three or more than three products (1786842.1) and low in units that produce single product (291545.5) . Both product producing units have high market value of electrical fitting (1661842.1), fruit products producing units (663166.7) and vegetable products producing units (185568.2) exhibit significant variation at 0.01 level(F=4.92). The average value of electrical fittings of the sample units exhibit significant variation in number of products produced and category of products. Scheffe multiple comparison examines the variation and it is presented below.

Table 8
Scheffe multiple comparison of market value of electrical fittings based on selected variables

		Pair	F [^]	Sig.
Sector	Large scale sector (A)	A & B	269.98* *	0.00
	Home scale sector (B)	A & C	247.36* *	0.00
	Small scale sector (C)	A & D	276.01* *	0.00
	Cottage sector (D)	B & C	0.16	0.92
		B & D	0.04	0.99
		C & D	0.05	0.98
No of product	1 (A)	A & B	0.1	0.893
	2 (B)	A & C	5.4**	0.006
	> 3 (C)	B & C	2.7	0.075
Category	Vegetable (A)	A & B	0.7	0.504
	Fruit (B)	A & C	4.9**	0.009
	Both (C)	B & C	2	0.145

Source : Primary Data

** : - Significant at 0.01 level

Scheffe multiple comparison of market value of electrical fittings of sample units. Large scale sector with home scale sector (F=269.98), large scale sector with small scale sector (F=247.36), large scale sector with Cottage sector (F=276.01) show significant at 0.01 level. Sample units that produce single product with three more than three products show significant variation at 0.01 level (F=5.4). Sample units that produce vegetable products only with both product producing units significant at 0.01 level (F=4.9). The average value of electrical fittings found to be high in large scale sector, units that produce three or more than three products and both product producing units. Units that produce bulk quantity of products require more electrical fittings.

Data relating to the tools and other fixed assets is presented below.

Tools and Other fixed assets

Table 9
Distribution of market value of tools and other fixed assets
based on selected variables

		Mean	SD	N	F	P
Sector	Large scale sector	2000000.0	1198957.9	9	80.94**	0.000
	Home scale sector	9142.9	5733.0	28		
	Small scale sector	56521.7	26476.2	23		
	Cottage sector	37090.9	25986.0	33		
District of the unit	Alappuzha	131666.7	379570.6	15	0.46	0.635
	Ernakulam	287306.1	863593.2	49		
	Kozhikode	163000.0	412691.3	29		
No of products produced	1	160272.7	744189.3	55	1.76	0.177
	2	145789.5	449815.6	19		
	>=3	483947.4	660152.7	19		
Category	Vegetable	77727.3	374439.4	44	2.02	0.138
	Fruit	322500.0	986127.7	30		
	Both	404473.7	620705.0	19		

Source : Primary Data

**:- Significant at 0.01 level

Market value of tools and other fixed assets are shown on table 5. Large scale sector have high market value of tools and other fixed assets (2000000) and low in home scale sector (9142.9). The average value of tools and other fixed assets show significant variation at 0.01 level(F=80.94). The other variables like district of the units situated, number of product produced and category wise classification of units does not have significant variation. Scheffe multiple comparison examine the difference on pair basis is presented below

Table 10
Scheffe multiple comparison of market value of tools and other fixed assets based on selected variables

		Pair	F`	Sig.
Sector	Large scale sector (A)	A & B	69.41*	0.00
	Home scale sector (B)	A & C	62.82*	0.00
	Small scale sector (C)	A & D	70.06*	0.00

	Cottage sector (D)	B & C	0.07	0.97
		B & D	0.03	0.99
		C & D	0.01	1.00

Source : Primary Data

**: - Significant at 0.01 level

Large Scale sector with home scale sector, large scale sector with small scale sector and large scale sector with cottage sector show significant variation at 0.01 level. No other sector with each other has significant variation. Only the large scale sector has the tools and other fixed assets found to be high

Total fixed assets

Table 11 exhibit the average total fixed asset of the sample units is as follows.

Table 11
Distribution of average value of total fixed assets based on selected variables

		Mean	SD	N	F	P
Sector	Large scale sector	166516398.7	100124410.2	9	70.88 **	0.000
	Home scale sector	1754957.8	801268.0	28		
	Small scale sector	12418755.9	15156146.0	23		
	Cottage sector	7645936.2	7763060.2	33		
District of the unit	Alappuzha	9646133.7	21302233.4	15	0.46	0.631
	Ernakulam	25700759.2	57369559.8	49		
	Kozhikode	23507050.9	67662588.1	29		
No of products produced	1	12045622.0	39431509.5	55	3.64*	0.030
	2	23307784.8	63283675.7	19		
	> =3	51598766.4	80751280.0	19		
Category	Vegetable	7584762.0	19514374.9	44	3.44*	0.036
	Fruit	29955304.9	69043694.7	30		
	Both	44912895.3	81620651.8	19		

Source : Primary Data

**: - Significant at 0.01 level

*: - Significant at 0.05 level

As per table 11, market value of total fixed asset of large scale sector (166516398.7) home scale sector (1754957.8), small scale sector (12418755.9) and cottage sector (7645936.2) the average total fixed asset show variation at 0.01 level (F=70.88) Ernakulam district have total market value of fixed asset high (25700759.2) and low in Alappuzha District (9646133.7). The average fixed asset of the sample units that produce single product

(12045622) two product (23307784.8) and three or more than three products (51598766.4). Units that produce both products have total cost of fixed asset high and vegetable products producing units have low total cost of fixed asset (7584762). The average value of total fixed asset of sample units show difference in sector, number of products produced and category of products.

Table 12
Scheffe multiple comparison of market value of total fixed assets based on selected variables

		Pair	F	Sig.
Sector	Large scale sector (A)	A & B	62.9**	0.00
	Home scale sector (B)	A & C	52.26**	0.00
	Small scale sector (C)	A & D	60.72**	0.00
	Cottage sector (D)	B & C	0.49	0.69
		B & D	0.18	0.91
		C & D	0.11	0.96
No of products produced	1 (A)	A & B	0.3	0.745
	2 (B)	A & C	3.6*	0.030
	>= 3 (C)	B & C	1.3	0.291
Category	Vegetable (A)	A & B	1.5	0.237
	Fruit (B)	A & C	3	0.053
	Both (C)	B & C	0.4	0.654

Source : Primary Data

** : - Significant at 0.01 level

* : - Significant at 0.05 level

Table 12 show the Scheffe multiple comparison of total cost of fixed asset. Large scale sector with home scale sector (F=62.9), large scale sector with small scale sector (F=52.26) and large scale sector with cottage sector (F= 60.72) show significant variation at 0.01 level. The average total fixed assets of the large scale sector have the total fixed asset higher than other sectors. Sample units that produce single product with three or more than three product producing units have variation at 0.05.level (F=3.6) .

Fixed Asset Turnover Ratio

Table 13
Comparison of fixed assets turnover ratio based on selected variables

		Mean	SD	N	F	P
Sector	Large scale sector	59.0	26.8	9	0.87	0.462
	Home scale sector	52.0	23.3	28		
	Small scale sector	57.2	28.9	23		
	Cottage sector	62.8	26.7	33		
District of the unit	Alappuzha	57.6	27.0	15	1.08	0.345
	Ernakulam	54.5	25.8	49		
	Kozhikode	63.5	26.5	29		
No of products produced	1	55.4	25.6	55	0.66	0.518
	2	59.3	25.5	19		
	>=3	63.2	29.1	19		
Category	Vegetable	59.7	24.7	44	0.81	0.447
	Fruit	52.8	29.1	30		
	Both	61.1	25.0	19		

Source : Primary Data

As per the table 13, it is clear that cottage sector (62.8) have high average fixed asset Turnover ratio followed by large scale sector (59.0), small scale sector (57.2) and home scale sector (52.0) . Sample units in Kozhikode district exhibit high average fixed asset turnover ratio (63.5) and low in Ernakulam district (54.5).Sample units that are producing single product have low fixed Asset turnover ratio (55.4) followed by two products (59.3) and high in three or more than three products producing units. As per the statistics, units producing both fruit and vegetable products have high fixed asset turn over ratio (61.1) than utilizing single raw material for making products.

CONCLUSION

In Kerala fruit and vegetable processing industry is mainly classified as large scale sector, small scale sector, home scale sector and cottage sector. There are 402 fruit and vegetable processing industry in Kerala. Units that are situated in Alappuzha,

Ernakulam, Kozhikode districts were selected for study. The other variables used for the study were number of products produced and category wise classification. Sample units that produce both products have the market value of building high (2444736.8). Units that produce bulk quantity of products require more electrical fittings. Fixed asset turnover ratio showed best in cottage sector, units producing more than three products, both fruit and vegetable products producing units.

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