CHAPTER-5

DATA ANALYSIS AND INTERPRETATION

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[5.0] INTRODUCTION:

This study is based on the measurement of financial health of selected FMCG Companies. The current research work is carried out to know the following thing:

- **Efficiency by…**
  - ✓ **Liquidity Ratio**
  - ✓ **Activity Ratio**
  - ✓ **Leverage Ratio**
  - ✓ **EVA- Economic Value Added to Net Operating Ratio**
  - ✓ **Profitability Ratio**

This research work is based on the secondary data. The secondary data for the study is collected from websites and published annual reports of selected FMCG Companies. i.e.

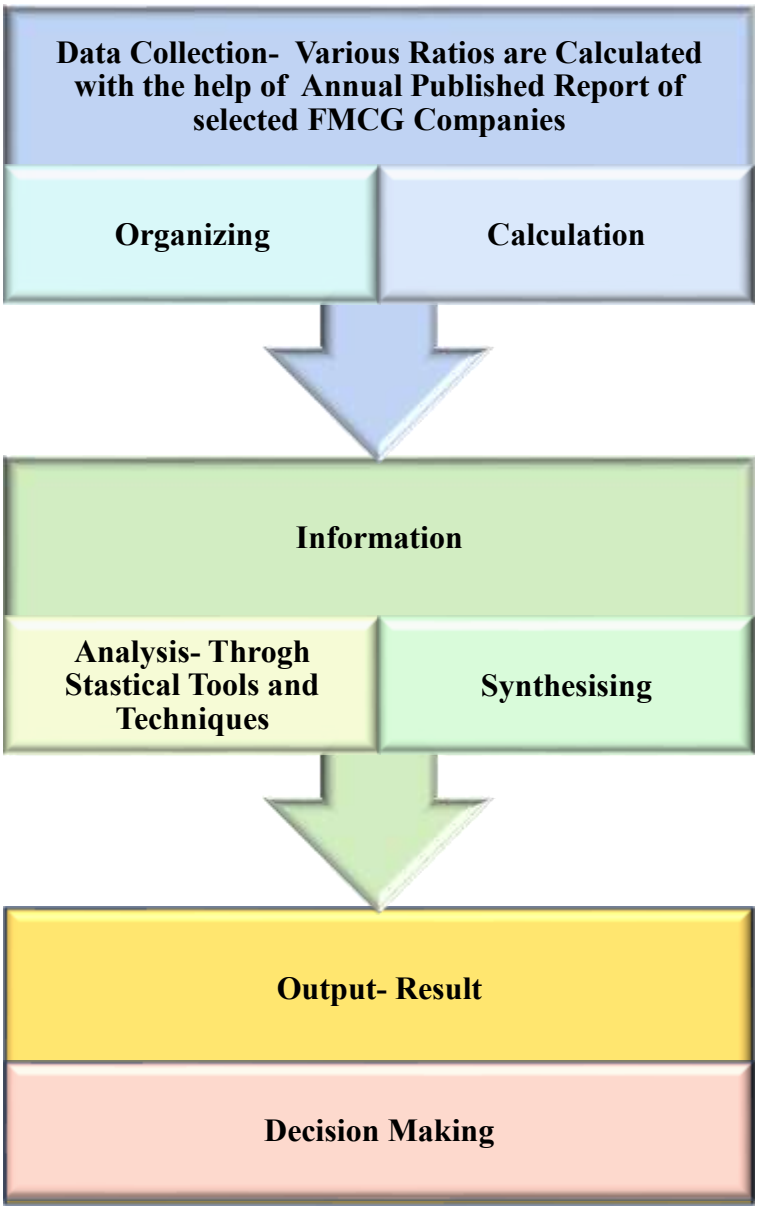
1. Published Annual Report of HUL
2. Published Annual Report of ITC LTD.
3. Published Annual Report of Nestle India Limited
4. Published Annual Report of Varun Beverages Limited
5. Published Annual Report of Britannia Industries Limited
6. Published Annual Report of Godrej Consumer Products
7. Published Annual Report of Dabur India Limited
8. Published Annual Report of Tata Consumer Product
9. Published Annual Report of United Spirits
10. Published Annual Report of Marico Limited

Data analysis and interpretation might occur after the data has been collected. Data analysis and interpretation involve both table and graphical presentations. The tools and procedures listed below are used for data analysis and interpretation

- .**Ratio Analysis**
- **ANOVA**
- **DEA- Data Envelopment Analysis Model**

The data analysis for this study follows the following procedure.

Figure: 5.0 Data Analysis and Interpretation



[Source: Self-Constructed**]**

Thus, from the data collection, data are organizing and summarizing. After that the arrangement has been done. And according to the classification, table has been organized. For the better sympathetic of tables, charts are prepared and written interpretation has been done. So, let's have a look to this chapter i.e.

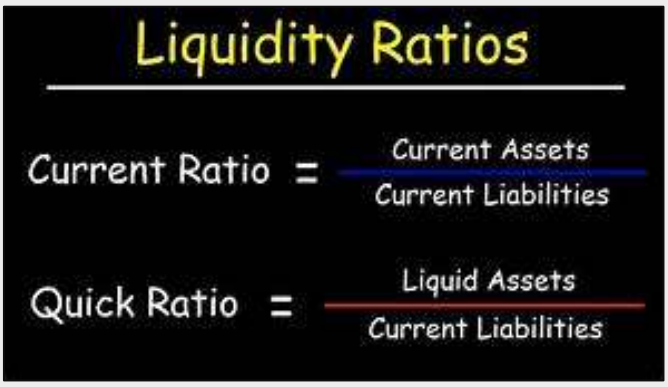
"Data Analysis and Interpretation"

5.1 PART-1

RATIO ANALYSIS

PART- 5.1(A)

LIQUIDITY RATIO



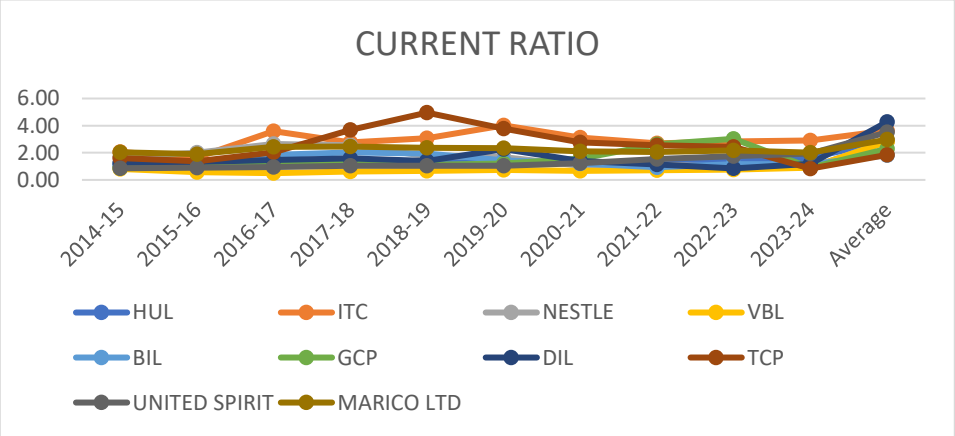
[5.1(Aa)] Current Ratio:

Table – 5.1: Table Showing Current Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	1.05	2.05	1.68	0.81	1.19	0.89	1.25	1.61	0.85	2.03
2015-16	1.43	1.65	2.01	0.57	1.06	1.35	1.32	1.37	0.89	1.90
2016-17	1.30	3.59	2.64	0.50	1.84	1.17	1.48	2.03	0.95	2.44
2017-18	1.29	2.77	2.55	0.63	2.03	1.26	1.59	3.69	1.04	2.45
2018-19	1.36	3.07	1.74	0.66	1.94	1.12	1.40	4.96	1.04	2.35
2019-20	1.31	4.02	1.68	0.74	1.45	1.20	2.26	3.77	1.04	2.34
2020-21	1.26	3.13	1.05	0.66	1.21	1.55	1.39	2.75	1.23	2.11
2021-22	1.34	2.70	1.13	0.72	0.93	2.62	1.14	2.56	1.53	2.06
2022-23	1.38	2.84	0.95	0.75	1.15	3.03	0.85	2.43	1.76	2.18
2023-24	1.64	2.91	0.88	0.89	1.17	0.90	1.19	0.83	1.93	2.01
AVG	1.34	2.87	1.63	0.69	1.40	1.51	1.39	2.60	1.23	2.19

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure – 5.1: Figure Showing Current Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.1 and Chart 5.1 represent the Current Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24. The average of current ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 1.34, 2.87, 1.63, 0.69, 1.40, 1.51, 1.39, 2.60, 1.23 1nd 2.19

Highest Average of current ratio is of ITC that is 2.87 and lowest average of current ratio is of Varun Beverages Limited that is 0.69.

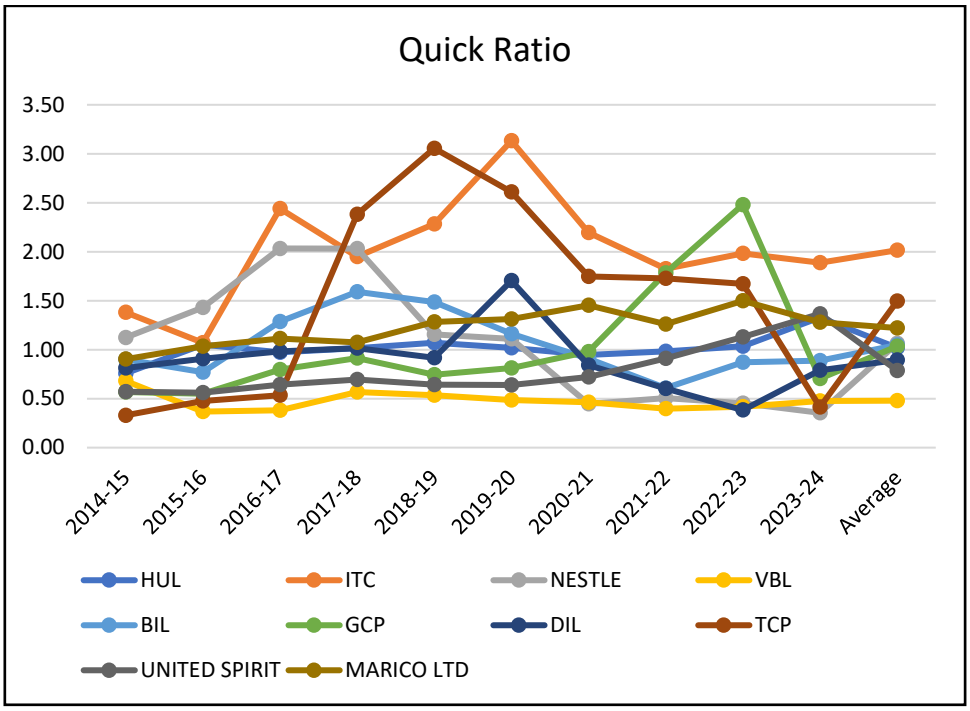
[5.1(Ab)] Quick Ratio:

Table – 5.2: Table Showing Quick Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	0.76	1.38	1.12	0.68	0.90	0.57	0.81	0.33	0.57	0.90
2015-16	1.05	1.07	1.43	0.37	0.77	0.55	0.91	0.48	0.56	1.03
2016-17	0.97	2.44	2.03	0.38	1.29	0.80	0.98	0.53	0.64	1.11
2017-18	1.02	1.95	2.03	0.57	1.59	0.91	1.02	2.38	0.70	1.07
2018-19	1.07	2.28	1.16	0.54	1.49	0.74	0.92	3.06	0.64	1.28
2019-20	1.02	3.13	1.11	0.49	1.16	0.81	1.70	2.61	0.64	1.31
2020-21	0.95	2.20	0.45	0.46	0.91	0.98	0.84	1.75	0.72	1.45
2021-22	0.98	1.82	0.51	0.40	0.61	1.78	0.60	1.73	0.91	1.26
2022-23	1.03	1.98	0.45	0.42	0.87	2.48	0.38	1.67	1.13	1.50
2023-24	1.33	1.89	0.36	0.48	0.89	0.70	0.79	0.41	1.37	1.28
AVG	1.02	2.01	1.06	0.48	1.05	1.03	0.90	1.49	0.79	1.22

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.2: Figure Showing Quick Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[Source: Calculated From Published Annual Reports of Selected Companies**]**

Table No 5.2 represent the Quick Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24. Fundamentally, Quick Ratio, greater than 1 is measured better since it indicates that company will be easily able to pay their short-term compulsions.

The average of quick ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 1.02, 2.01, 1.06, 0.48, 1.05, 1.03, 0.90, 1.49, 0.79 and 1.22 Highest Average of quick ratio is of Tata Consumer Product that is 1.49 and lowest average of quick ratio is of United Spirit Limited that is 0.79.

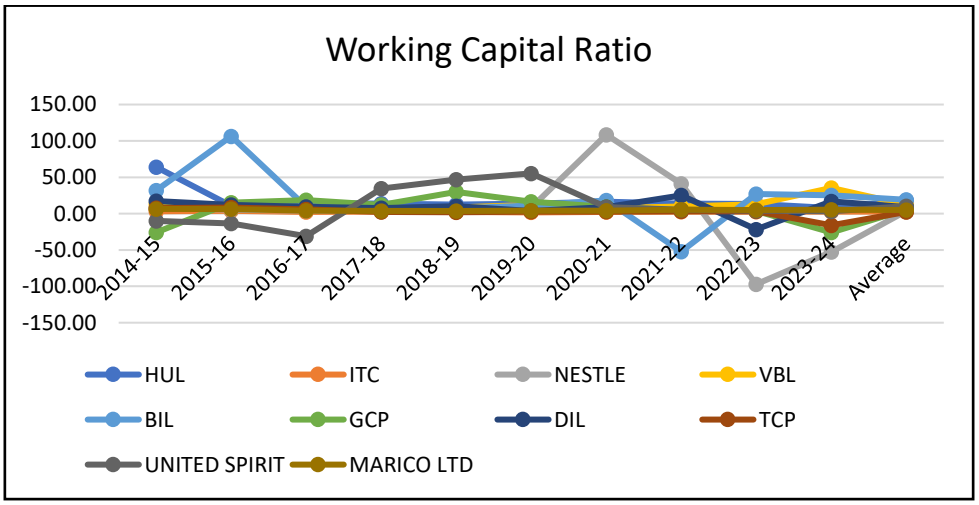
[5.1(Ac)] Working Capital Ratio:

Table – 5.3: Table Showing Working Capital Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	64.08	2.97	8.14	12.96	31.63	-25.89	17.34	7.42	-10.11	6.47
2015-16	10.79	3.86	5.60	6.96	106.41	15.24	12.01	8.34	-13.68	6.20
2016-17	14.74	2.26	4.09	5.03	9.19	18.46	9.18	5.83	-31.05	4.13
2017-18	13.79	2.60	3.92	6.98	6.64	12.18	7.72	2.10	34.33	3.74
2018-19	12.65	2.26	8.16	8.49	7.05	29.83	10.29	1.95	46.65	3.83
2019-20	13.83	1.66	7.89	11.99	11.10	16.24	3.46	2.59	55.30	3.86
2020-21	16.43	2.10	108.54	7.61	18.01	9.25	9.05	2.91	8.92	4.29
2021-22	13.82	2.89	41.17	9.71	-52.15	4.53	25.07	3.32	5.27	5.19
2022-23	13.37	2.90	-97.15	12.98	27.15	3.49	-21.70	3.23	3.86	4.82
2023-24	7.66	2.77	-52.88	35.31	25.03	-25.92	16.87	-16.05	3.15	5.42
AVG	18.12	2.63	3.75	11.80	19.01	5.74	8.93	2.16	10.26	4.79

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.3: Figure Showing Working Capital Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Computed from table]

Interpretation:

Table No 5.3 and Chart No. 5.3 represent the Working Capital Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24.

The average of working capital ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 18.12, 2.63, 3.75, 11.80, 19.01, 5.74, 8.93, 2.16, 10.26 and 4.79. Highest Average of quick ratio is of HUL that is 18.12 and lowest average of working capital ratio is of Tata Consumer Product that is 2.16.

PART- 5.1(B)

ACTIVITY RATIO

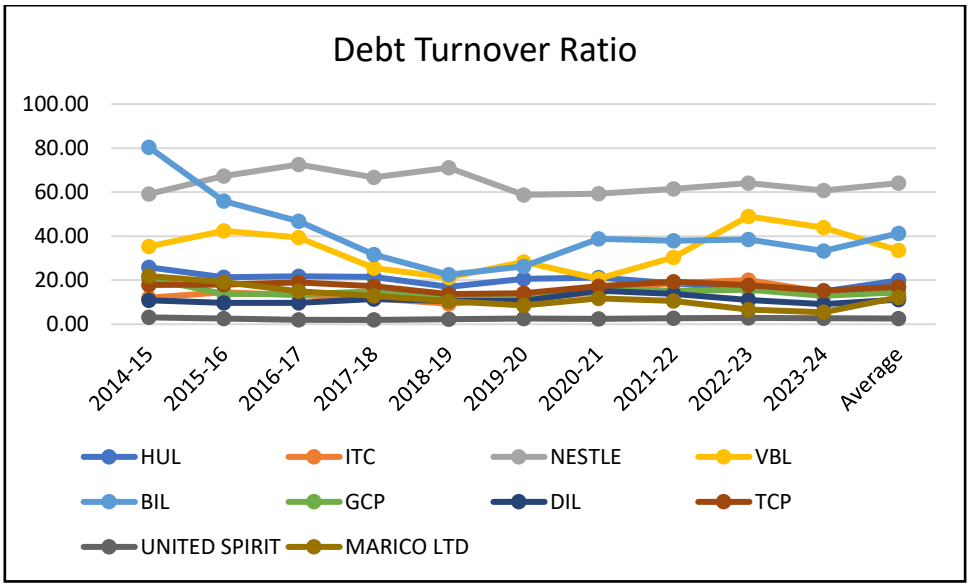
[5.1(Ba)] Debtor Turnover Ratio:

Table – 5.4: Table Showing Debtor Turnover Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	25.86	12.06	59.11	35.37	80.47	20.84	10.85	17.84	3.11	21.90
2015-16	21.34	14.46	67.26	42.48	55.90	13.81	9.74	18.05	2.59	19.22
2016-17	21.84	13.14	72.57	39.45	46.81	13.65	9.73	18.95	2.08	14.99
2017-18	21.43	11.74	66.79	25.55	31.70	14.89	11.46	17.25	1.95	12.86
2018-19	17.01	9.33	71.10	21.24	22.49	11.89	10.53	13.70	2.32	10.40
2019-20	20.60	11.65	58.79	28.40	26.30	11.36	10.60	14.05	2.57	8.61
2020-21	21.19	14.50	59.38	20.68	38.75	15.63	15.25	17.27	2.39	11.68
2021-22	18.58	18.80	61.55	30.35	37.88	15.09	13.74	19.33	2.77	10.56
2022-23	15.98	20.03	64.07	48.99	38.53	15.67	11.01	17.70	2.94	6.70
2023-24	14.90	14.63	60.72	43.85	33.29	12.91	9.14	15.20	2.70	5.43
AVG	19.87	14.03	64.13	33.64	41.21	14.57	11.21	16.93	2.54	12.24

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.4: Figure Showing Debtor Turnover Ratio of Selected FMCG Companies for 2014-15 to 2024-25



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.4 and Chart No. 5.4 represent the Debtors Turnover Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24. The average of Debtor Turnover Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 19.87, 14.03, 64.13, 33.64, 41.21, 14.57, 11.21, 16.93, 2.54 and 12.24.

Highest Average of debtor turnover ratio is of Nestle India Limited that is 64.13 and lowest average of debtor turnover ratio is of United Spirit Limited that is 2.54.

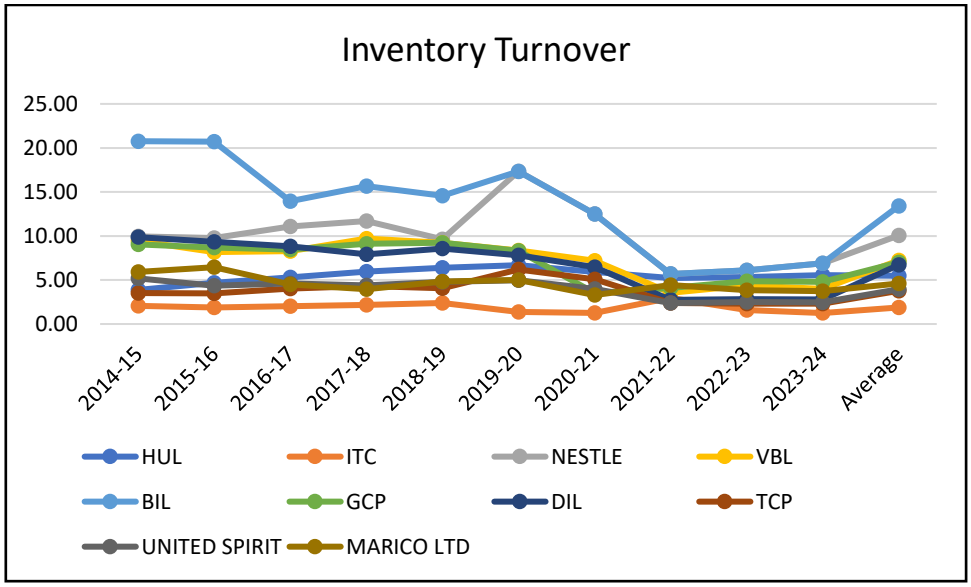
[5.1(Bb)] Inventory Turnover Ratio:

Table – 5.5: Table Showing Inventory Turnover Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	3.87	2.07	9.96	9.44	20.76	9.05	9.86	3.52	5.18	5.91
2015-16	4.66	1.86	9.78	8.16	20.70	8.66	9.34	3.46	4.34	6.45
2016-17	5.30	2.03	11.09	8.26	13.96	8.45	8.83	4.01	4.61	4.48
2017-18	5.93	2.17	11.70	9.70	15.65	9.13	7.93	4.32	4.37	3.94
2018-19	6.39	2.37	9.64	9.23	14.58	9.23	8.56	4.05	4.79	4.84
2019-20	6.68	1.36	17.34	8.34	17.34	8.32	7.80	6.19	4.95	5.02
2020-21	5.92	1.26	12.49	7.18	12.49	3.52	6.45	5.08	3.98	3.29
2021-22	5.24	2.96	5.68	3.54	5.68	4.10	2.74	2.38	2.37	4.44
2022-23	5.34	1.58	6.09	4.38	6.09	4.87	2.83	2.31	2.48	3.85
2023-24	5.56	1.24	6.88	3.99	6.88	4.79	2.78	2.31	2.45	3.75
AVG	5.49	1.89	10.07	7.22	13.41	7.01	6.71	3.76	3.95	4.60

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure-5.5: Figure Showing Inventory Turnover Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.5 and Chart No. 5.5. represent the Inventory Turnover Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24. The average of Inventory Turnover Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 5.49, 1.89, 10.07, 7.22, 13.41, 7.01, 6.71, 3.76, 3.95, 4.60.

Highest Average of Inventory Turnover Ratio is of Britannia India Limited that is 13.41 and lowest average of Inventory Turnover Ratio is of ITC that is 1.89.

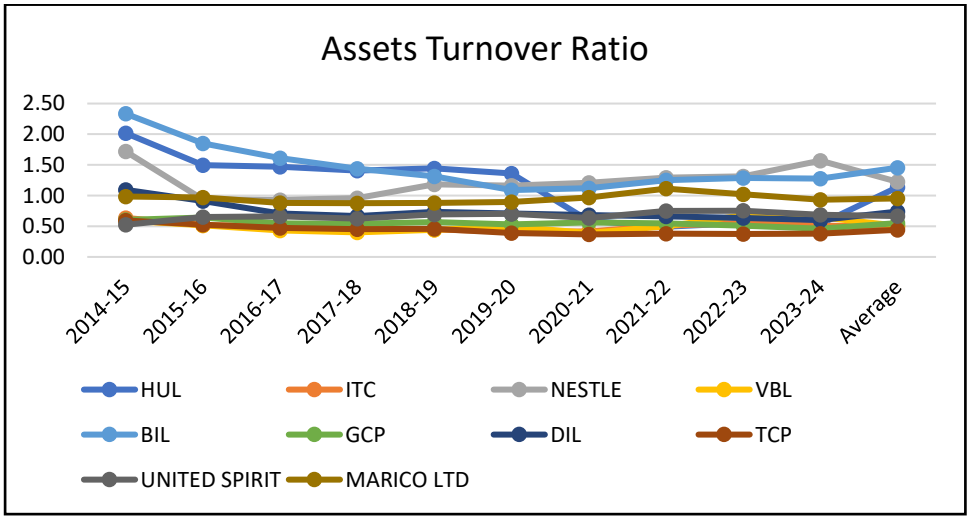
[5.1(Bc)] Assets Turnover Ratio:

Table – 5.6: Table Showing Assets Turnover Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	2.02	0.64	1.72	0.60	2.33	0.60	1.09	0.59	0.52	0.98
2015-16	1.50	0.51	0.94	0.51	1.85	0.64	0.91	0.52	0.65	0.97
2016-17	1.47	0.51	0.93	0.43	1.61	0.55	0.71	0.48	0.66	0.88
2017-18	1.41	0.45	0.96	0.40	1.44	0.54	0.66	0.45	0.63	0.88
2018-19	1.45	0.45	1.18	0.44	1.32	0.57	0.74	0.46	0.69	0.88
2019-20	1.36	0.41	1.16	0.49	1.09	0.53	0.71	0.39	0.71	0.90
2020-21	0.59	0.42	1.21	0.39	1.12	0.56	0.68	0.37	0.64	0.97
2021-22	0.49	0.51	1.29	0.50	1.25	0.55	0.66	0.38	0.75	1.11
2022-23	0.55	0.55	1.31	0.68	1.29	0.51	0.64	0.38	0.75	1.02
2023-24	0.54	0.51	1.57	0.65	1.28	0.46	0.60	0.38	0.69	0.93
AVG	1.14	0.50	1.23	0.51	1.46	0.55	0.74	0.44	0.67	0.95

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.6: Figure Showing Assets Turnover Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.6 and Chart No 5.6 represent the Assets Turnover Ratio of the selected FMCG Companies during the study period i.e. from 2013-14 to 2023-24. The average of Assets Turnover Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 1.14, 0.50, 1.23, 0.51, 1.46, 0.55, 0.74, 0.44, 0.67, 0.95. Highest Average of Assets Turnover Ratio is of Britannia India Limited that is 1.46 and lowest average of Inventory Turnover Ratio is of Tata Consumer Product that is 0.44.

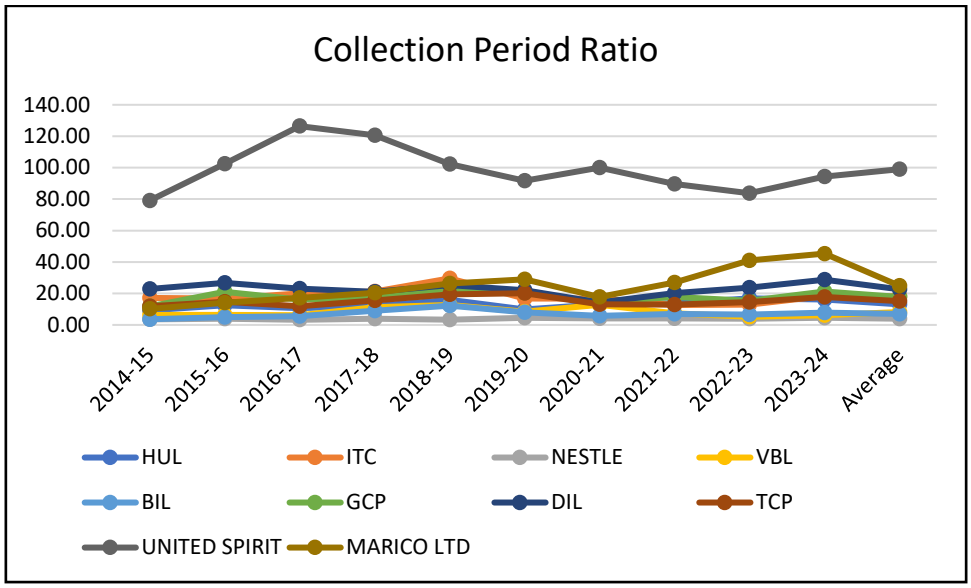
[5.1(Bd)] Collection Period Ratio:

Table – 5.7: Table Showing Collection Period Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	9.28	17.22	3.50	6.28	3.61	11.78	22.77	11.85	79.15	10.18
2015-16	12.50	16.71	3.88	6.38	4.90	21.01	26.70	14.69	102.40	14.17
2016-17	10.62	20.10	3.24	6.18	5.48	16.09	22.99	11.87	126.42	17.13
2017-18	12.13	21.18	4.03	11.29	9.04	17.25	20.97	15.50	120.61	20.34
2018-19	15.98	29.58	3.42	12.71	12.22	22.70	25.25	19.36	102.34	26.29
2019-20	9.84	16.74	4.51	8.48	8.05	20.37	21.96	20.15	91.68	29.00
2020-21	13.08	16.77	4.10	12.76	5.85	14.44	14.29	13.12	99.94	17.86
2021-22	13.77	12.65	4.15	7.31	6.93	17.69	20.28	12.97	89.56	27.01
2022-23	16.88	12.83	3.87	5.18	6.51	15.27	23.59	14.60	83.84	40.90
2023-24	16.24	18.47	4.50	6.15	7.83	21.32	28.74	17.77	94.32	45.35
AVG	13.03	18.22	3.92	8.27	7.04	17.79	22.75	15.19	99.03	24.82

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.7: Figure Showing Collection Period Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

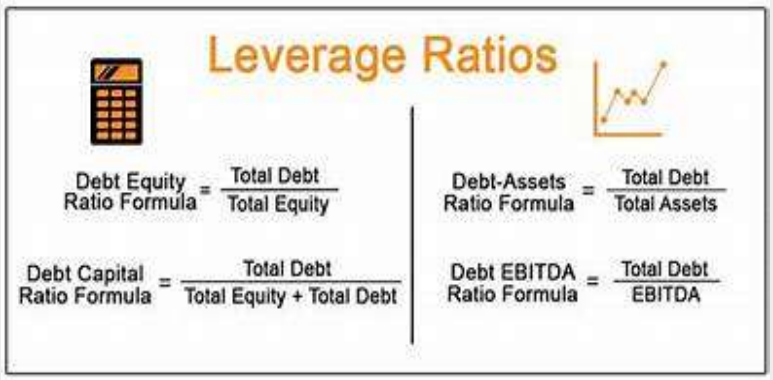
Table No 5.7 and Chart No 5.7 represent the Collection Period Ratio of the selected FMCG Companies during the study period i.e. from 2013-14 to 2023-24.

The average of Collection Period Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 13.03, 18.22, 3.92, 8.27, 7.04, 17.79, 22.75, 15.19, 99.03 and 24.82.

Highest Average of Collection Period Ratio is of United Spirit Limited that is 99.03 and lowest average of Collection Period Ratio is of Nestle India Limited that is 3.92.

PART- 5.1(C)

LEVERAGE RATIO



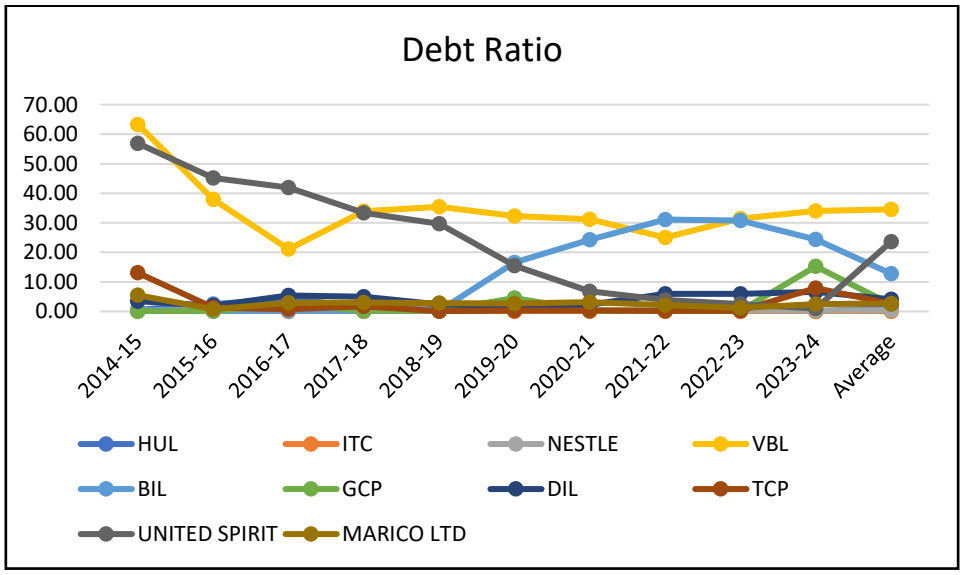
[5.1(Ca)] Debt Ratio:

Table – 5.8: Table Showing Debt Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	0.56	0.09	0.29	63.29	0.17	0.03	3.50	13.06	56.90	5.49
2015-16	2.50	0.06	0.49	37.94	0.11	0.05	1.94	1.29	45.16	0.74
2016-17	4.27	0.03	0.48	21.10	0.26	2.43	5.44	0.73	41.88	2.88
2017-18	1.51	0.02	0.43	33.95	0.20	0.19	4.93	1.72	33.40	3.04
2018-19	2.66	0.011	0.74	35.40	0.16	0.20	2.42	0.09	29.70	2.75
2019-20	1.15	0.007	0.44	32.28	16.57	4.57	1.87	0.29	15.47	2.66
2020-21	0.21	0.008	0.41	31.22	24.23	0.20	2.29	0.26	6.82	3.17
2021-22	0.19	0.007	0.33	25.07	31.10	0.24	5.95	0.23	3.86	2.11
2022-23	0.20	0.006	0.31	31.37	30.81	0.23	5.98	0.25	2.47	1.16
2023-24	0.03	0.004	0.30	33.98	24.34	15.24	6.63	7.86	0.98	2.48
AVG	1.33	0.02	0.42	34.56	12.80	2.34	4.09	2.58	23.66	2.65

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure-5.8 Figure Showing Average Debt Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.8 represent the Debt Ratio of the selected FMCG Companies during the study period i.e. from 2013-14 to 2023-24. The average of Collection Period Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 13.03, 18.22, 3.92, 8.27, 7.04, 17.79, 22.75, 15.19, 99.03 and 24.82. Highest Average of Collection Period Ratio is of United Spirit Limited that is 99.03 and lowest average of Collection Period Ratio is of Nestle India Limited that is 3.92.

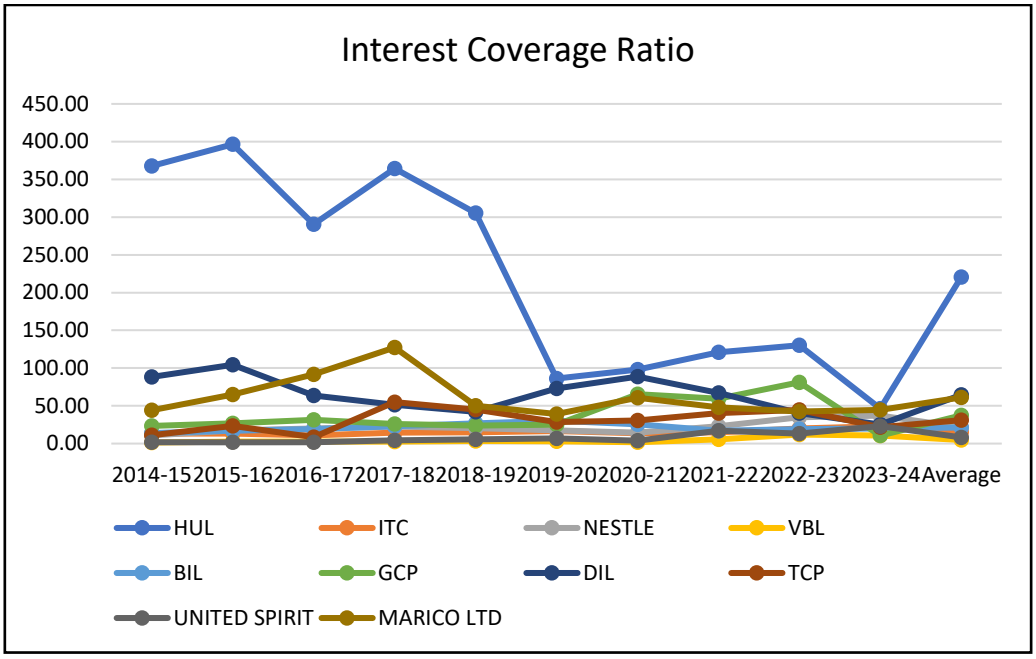
[5.1(Cb)]Interest Coverage Ratio:

Table – 5.9: Table Showing Interest Coverage Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	367.86	13.29	10.85	1.35	13.98	23.40	88.22	11.21	1.88	44.08
2015-16	396.40	13.06	17.30	2.56	16.88	26.76	104.37	23.32	1.67	64.89
2016-17	290.73	10.89	20.22	2.50	19.22	31.56	63.83	8.51	1.82	91.59
2017-18	364.25	14.32	22.43	2.59	22.90	25.80	51.45	54.92	4.25	127.26
2018-19	305.36	14.98	20.53	3.37	26.78	23.71	42.23	44.93	5.51	50.25
2019-20	86.29	16.53	17.57	3.24	30.28	25.13	73.09	28.54	6.81	39.18
2020-21	98.11	13.78	14.58	1.81	25.33	65.29	88.66	30.57	3.86	60.64
2021-22	121.10	14.83	22.80	5.43	17.07	59.63	67.06	40.41	16.97	48.17
2022-23	130.37	19.95	34.85	11.97	19.30	81.14	40.40	44.64	13.40	42.44
2023-24	46.37	22.99	37.06	10.81	19.85	10.58	25.21	21.67	23.16	44.81
AVG	220.68	15.46	21.82	4.56	21.16	37.30	64.45	30.87	7.93	61.33

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.9: Figure Showing Interest Coverage Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[Source: Calculated From Published Annual Reports of Selected Companies**]**

Interpretation:

Table No 5.9 and Chart 5.9 represent the Interest Coverage Ratio of the selected FMCG Companies during the study period i.e. from 2009-10 to 2023-24.

The average of Interest Coverage Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 220.68, 15.46, 21.82, 4.56, 21.16, 37.30, 64.45, 30.87, 7.93 and 61.33.

Highest Average of Collection Period Ratio is of HUL that is 220.68 and lowest average of Collection Period Ratio is of Varun Beverages Limited that is 4.56.

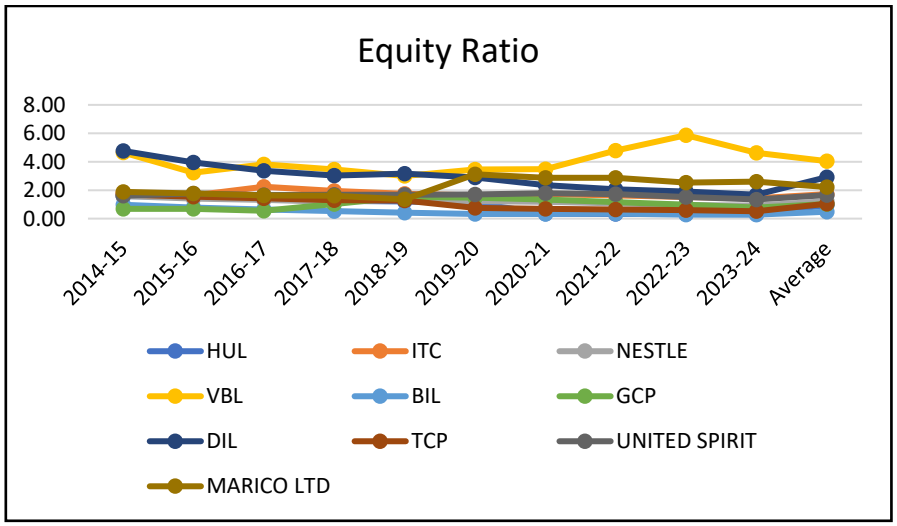
[5.1(Cc)]Equity Ratio:

Table – 5.10: Table Showing Equity Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	1.59	1.81	1.59	4.66	0.97	0.69	4.76	1.69	1.61	1.89
2015-16	1.55	1.63	1.42	3.23	0.78	0.68	3.95	1.55	1.77	1.76
2016-17	1.46	2.24	1.31	3.81	0.65	0.55	3.38	1.43	1.65	1.63
2017-18	1.26	1.96	1.19	3.45	0.52	1.03	3.03	1.29	1.68	1.60
2018-19	1.21	1.76	1.34	3.00	0.43	1.53	3.17	1.26	1.68	1.36
2019-20	1.10	1.63	1.22	3.45	0.33	1.47	2.90	0.76	1.70	3.12
2020-21	0.34	1.72	1.17	3.48	0.32	1.33	2.36	0.69	1.78	2.88
2021-22	0.34	1.64	1.07	4.78	0.34	1.15	2.06	0.65	1.73	2.87
2022-23	0.33	1.51	0.96	5.87	0.28	0.97	1.90	0.60	1.52	2.53
2023-24	0.30	1.43	0.92	4.64	0.29	0.79	1.68	0.52	1.35	2.60
AVG	0.95	1.73	1.22	4.04	0.49	1.02	2.92	1.04	1.65	2.22

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.10: Figure Showing Equity Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.9 and Chart 5.9 represent the Equity Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24.

The average of Equity Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 0.95, 1.73, 1.22, 4.04, 0.49, 1.02, 2.92, 1.04, 1.65 and 2.22.

Highest Average of Equity Ratio is of Varun Beverages Limited that is 4.04 and lowest average of Equity Ratio is of Britannia India Limited that is 0.49.

PART- 5.1(D)

ECONOMIC INDICATOR

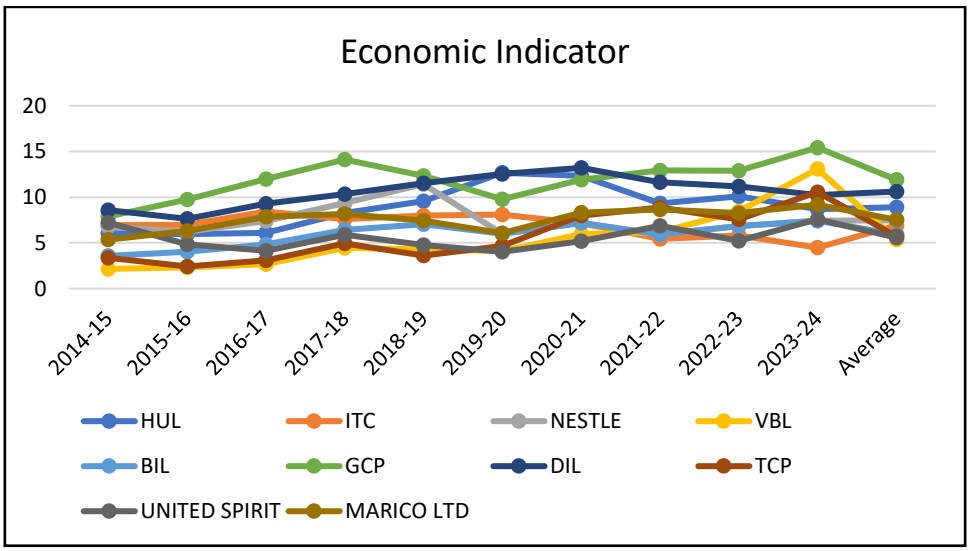
[5.1D)] Economic Indicator

Table – 5.11: Table Showing Economic Indicator (EV/Net Operating Income Ratio) of selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	6.05	6.94	6.81	2.15	3.58	7.89	8.59	3.35	7.22	5.35
2015-16	5.96	6.99	6.21	2.32	4.04	9.73	7.63	2.42	4.85	6.3
2016-17	6.11	8.43	7.41	2.67	4.82	11.99	9.28	3.1	4.12	7.84
2017-18	8.26	7.62	9.34	4.46	6.41	14.13	10.34	4.93	5.9	8.15
2018-19	9.55	8.00	11.43	4.28	7.06	12.35	11.52	3.6	4.75	7.42
2019-20	12.67	8.08	5.99	4.11	5.99	9.76	12.54	4.65	4.02	6.06
2020-21	12.33	7.16	7.2	5.94	7.2	11.9	13.21	8.00	5.19	8.29
2021-22	9.33	5.42	5.93	6.16	5.93	12.94	11.64	8.86	6.87	8.64
2022-23	10.09	5.83	6.83	8.43	6.83	12.91	11.18	7.58	5.22	8.26
2023-24	8.7	4.48	7.42	13.09	7.42	15.43	10.22	10.56	7.58	9.17
AVG	8.905	6.895	7.457	5.361	5.928	11.903	10.615	5.705	5.572	7.548

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.11: Figure Showing EV to Net Operating Income Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

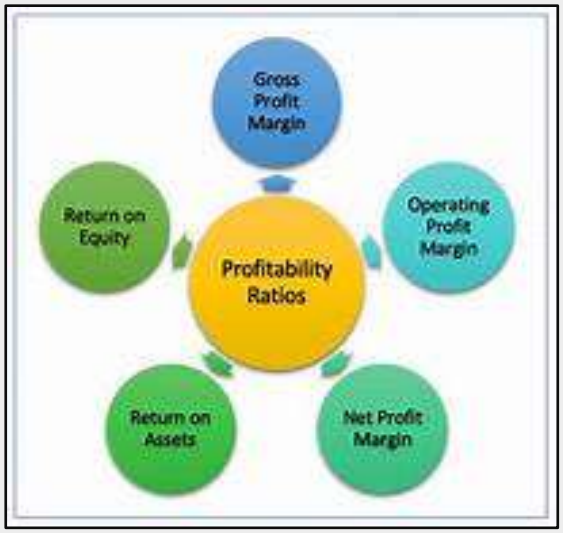
Table No 5.11 and Chart 5.11 represent the Economic Value Added to Net Operating Income Ratio of the selected FMCG Companies during the study period i.e. from 2009-10 to 2018-19.

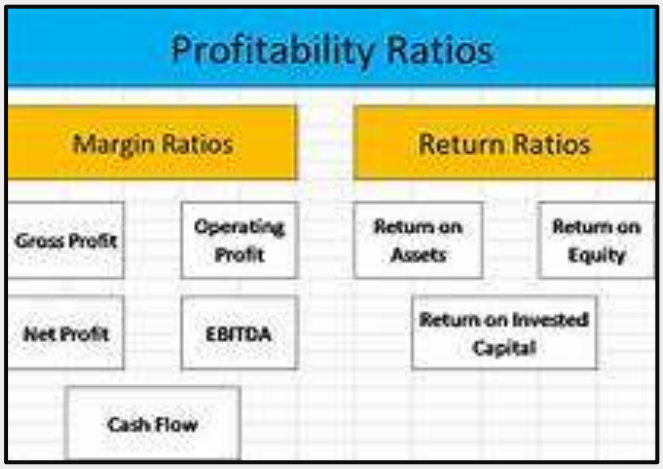
The average of Economic Value Added to Net Operating Income Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 8.905, 6.895, 7.457, 5.361, 5.928, 11.903, 10.615, 5.705, 5.572, 7.548

Highest Average of Economic Value Added to Net Operating Income Ratio is of Godrej Consumer Product that is 11.903 and lowest average of Economic Value Added to Net Operating Income Ratio is of Varun Beverages Limited that is 5.361.

PART- 5.1(E)

PROFITABILITY RATIO





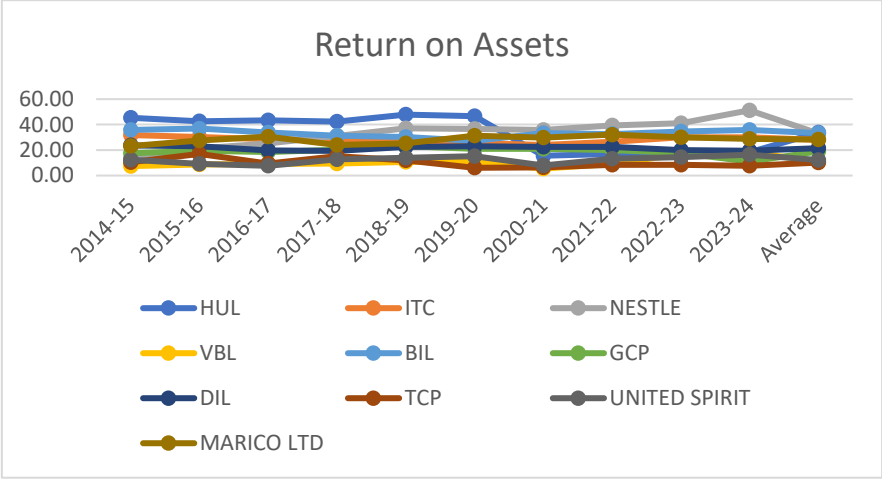
[5.1(Ea)] Return on Assets Ratio:

Table – 5.12: Table Showing Return on Assets Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	45.38	31.80	13.44	7.35	35.90	17.56	23.66	10.48	12.37	23.15
2015-16	42.72	30.31	21.23	8.59	36.93	19.45	23.03	16.99	9.10	27.46
2016-17	43.36	28.59	25.24	9.15	33.89	18.47	19.86	9.46	7.64	30.64
2017-18	42.48	27.24	31.04	9.37	31.26	20.21	19.38	15.32	12.80	23.90
2018-19	47.86	26.48	36.96	10.78	30.38	23.07	22.56	11.83	14.00	25.35
2019-20	46.66	25.40	36.51	10.85	27.21	20.99	23.09	6.09	15.17	31.26
2020-21	15.56	24.01	35.73	5.44	33.40	21.05	22.61	6.40	7.87	29.76
2021-22	17.02	26.49	39.25	9.29	32.54	19.94	22.38	8.46	13.09	32.14
2022-23	18.33	30.12	41.19	16.68	34.62	17.74	20.09	8.40	14.55	30.03
2023-24	18.17	30.17	51.23	18.61	35.90	10.92	19.42	7.63	16.38	28.88
AVG	33.75	28.06	33.18	10.61	33.20	18.94	21.61	10.11	12.30	28.26

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.12: Figure Showing Return on Assets Ratio of Selected FMCG Companies for 2014-15 to 2024-25



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.12 and Chart No 5.12 represent the Return on Assets Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24. The average of Return on Assets Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 33.75, 28.06, 33.18, 10.61, 33.20, 18.94, 21.61, 10.11, 12.30 and 28.26

Highest Average of Return on Assets Ratio is of HUL that is 33.75 and lowest average of Return on Assets Ratio is of Tata Consumer Product that is 10.11.

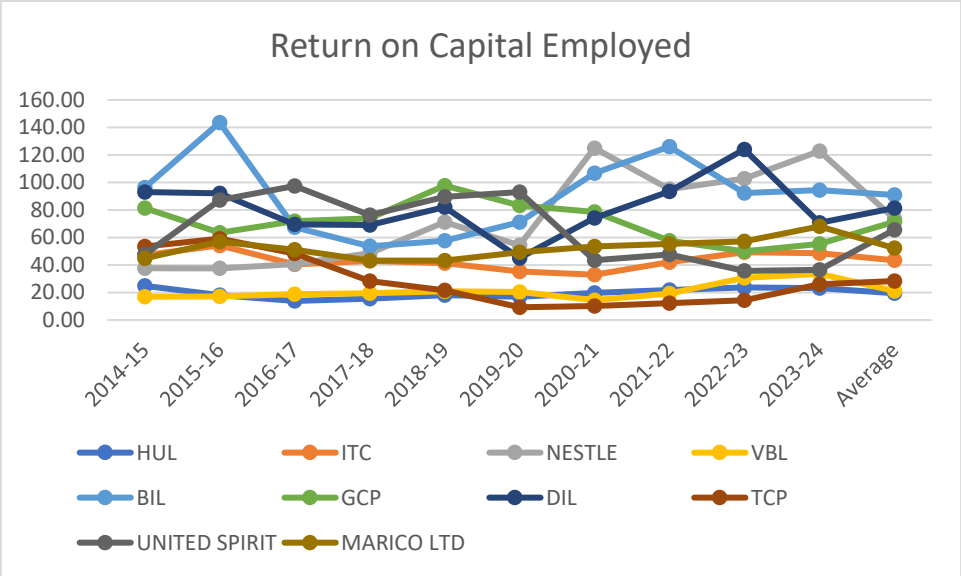
[5.1(Eb)] Return on Capital Employed:

Table – 5.13: Table Showing Return on Capital Employed Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	24.81	47.17	37.63	16.83	96.31	81.36	93.10	53.42	47.53	44.75
2015-16	18.13	54.24	37.50	17.11	143.53	63.46	92.01	59.11	87.06	56.90
2016-17	13.85	40.35	40.67	18.71	67.48	71.92	69.54	48.25	97.39	51.18
2017-18	15.62	42.89	48.58	19.37	53.57	73.97	68.97	28.30	76.34	43.17
2018-19	18.05	41.37	71.17	20.92	57.70	97.72	82.15	21.67	89.54	43.25
2019-20	16.98	35.30	54.47	20.30	71.13	83.25	45.07	9.27	93.10	49.27
2020-21	19.69	32.92	124.95	14.45	106.75	78.56	74.05	10.11	43.47	53.43
2021-22	21.68	41.93	95.18	19.12	126.13	57.54	93.53	12.35	47.63	55.28
2022-23	23.59	49.21	102.80	30.64	92.22	49.90	124.04	14.36	35.67	57.19
2023-24	23.23	48.49	122.77	33.61	94.33	55.22	70.63	26.01	36.55	68.02
AVG	19.56	43.39	73.57	21.11	90.91	71.29	81.31	28.29	65.43	52.24

[Source: Calculated From Published Annual Reports of Selected Companies**]**

Figure -5.13: Figure Showing Return on Capital Employed Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.13 and Chart No 5.13 represent the Return on Capital Employed Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24.

The average of Return on Capital Employed Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 19.56, 43.39, 73.57, 21.11, 90.91, 71.29, 81.31, 28.29, 65.43 and 52.24 Highest Average of Return on Capital Employed Ratio is of Britannia Limited that is 90.91 and lowest average of Return on Capital Employed Ratio is of HUL that is 19.56.

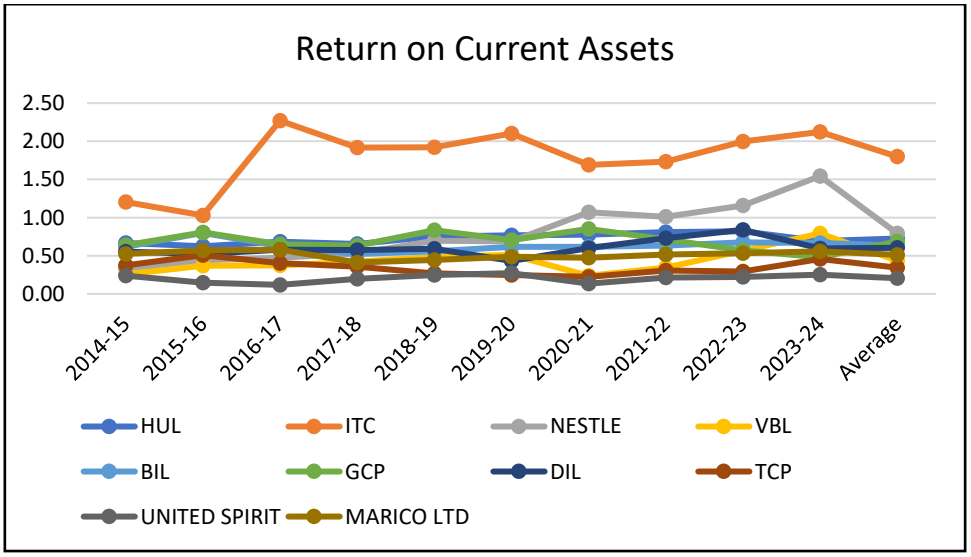
[5.1(Ec)] Return on Current Assets:

Table – 5.14: Table Showing Return on Current Assets Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	0.67	1.20	0.33	0.26	0.62	0.64	0.55	0.37	0.24	0.52
2015-16	0.62	1.03	0.44	0.37	0.80	0.80	0.53	0.51	0.15	0.57
2016-17	0.68	2.27	0.47	0.37	0.62	0.65	0.58	0.40	0.12	0.58
2017-18	0.65	1.92	0.53	0.42	0.52	0.63	0.57	0.36	0.20	0.41
2018-19	0.75	1.92	0.69	0.48	0.56	0.83	0.59	0.27	0.25	0.44
2019-20	0.77	2.10	0.69	0.51	0.62	0.71	0.43	0.25	0.27	0.49
2020-21	0.78	1.69	1.07	0.24	0.62	0.85	0.60	0.22	0.13	0.47
2021-22	0.81	1.73	1.01	0.34	0.63	0.71	0.73	0.31	0.21	0.52
2022-23	0.82	2.00	1.16	0.57	0.68	0.57	0.84	0.29	0.22	0.53
2023-24	0.69	2.12	1.54	0.79	0.66	0.48	0.60	0.46	0.25	0.56
AVG	0.72	1.80	0.79	0.44	0.63	0.69	0.60	0.34	0.20	0.51

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.14 Figure Showing Return on Current Assets Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.14 and Chart No 5.14 represent the Return on Current Assets Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24.

The average of Return on Current Assets Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 0.72, 1.80, 0.79, 0.44, 0.63, 0.69, 0.60, 0.34, 0.20 and 0.51.

Highest Average of Return on Current Assets Ratio is of ITC that is 1.80 and lowest average of Return on Capital Employed Ratio is of United Spirit Limited that is 0.20.

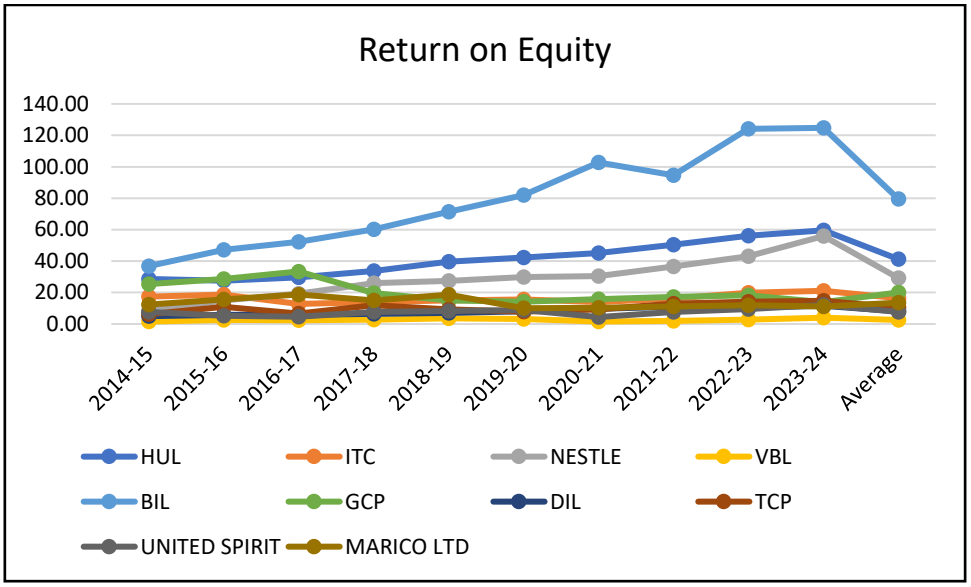
[5.1(Ed)] Return on Equity:

Table – 5.15: Table Showing Return on Equity Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	28.60	17.53	8.47	1.58	36.84	25.39	4.97	6.20	7.68	12.28
2015-16	27.53	18.65	14.99	2.66	47.20	28.72	5.83	10.94	5.13	15.61
2016-17	29.61	12.76	19.27	2.40	52.19	33.41	5.88	6.62	4.62	18.75
2017-18	33.73	13.92	26.04	2.72	60.25	19.65	6.39	11.88	7.64	14.90
2018-19	39.58	15.08	27.50	3.59	71.48	15.04	7.12	9.38	8.34	18.70
2019-20	42.35	15.55	29.92	3.15	82.06	14.25	7.97	7.97	8.93	10.02
2020-21	45.09	13.96	30.42	1.56	102.8	15.84	9.60	9.33	4.41	10.34
2021-22	50.50	16.14	36.55	1.95	94.59	17.32	10.87	13.06	7.58	11.20
2022-23	56.03	19.94	43.12	2.84	124.1	18.32	10.57	14.11	9.57	11.84
2023-24	59.59	21.10	55.92	4.01	124.7	13.88	11.55	14.73	12.14	11.12
AVG	41.26	16.46	29.22	2.65	79.63	20.18	8.08	10.42	7.60	13.48

[Source: Calculated From Published Annual Reports of Selected Companies**]**

Figure -5.15 Figure Showing Return on Equity Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.14 and Chart No 5.14 represent the Return on Equity Ratio of the selected FMCG Companies during the study period i.e. from 2014-15 to 2023-24.

The average of Return on Equity Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 41.26, 16.46, 29.22, 2.65, 79.63, 20.18, 8.08, 10.42, 7.60 and 13.48 Highest Average of Return on Equity Ratio is of Britannia Limited that is 79.63 and lowest average of Return on Equity Ratio is of Varun Beverages Limited that is 2.65.

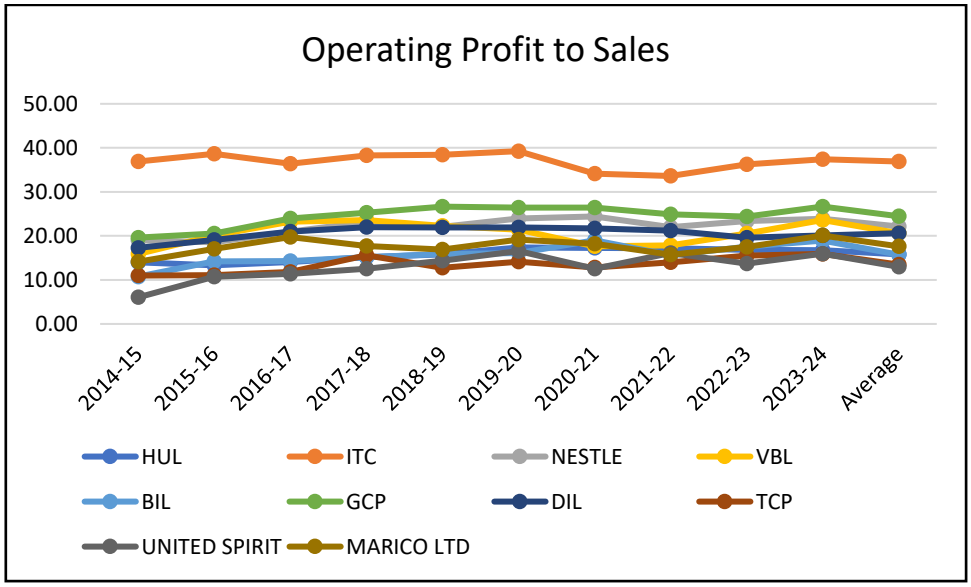
[5.1(Ee)] Operating Profit to Sales Ratio:

Table – 5.16: Table Showing Operating Profit to Sales Ratio of Selected FMCG Companies for 2014-15 to 2023-24

Yr./CO	HUL	ITC	NIL	VBL	BIL	GCP	DIL	TCP	USL	ML
2014-15	14.01	36.91	19.02	15.89	10.75	19.61	17.28	10.99	6.04	14.14
2015-16	13.32	38.65	18.55	20.08	14.24	20.55	19.11	11.10	10.75	17.02
2016-17	14.08	36.36	20.95	23.23	14.31	23.93	21.01	11.84	11.36	19.72
2017-18	15.17	38.25	23.18	23.58	15.16	25.29	21.97	15.58	12.50	17.70
2018-19	15.79	38.46	22.05	22.30	15.86	26.63	21.92	12.78	14.34	16.92
2019-20	17.37	39.25	23.98	21.44	16.12	26.44	21.88	14.13	16.57	19.14
2020-21	17.29	34.13	24.42	17.62	18.99	26.43	21.70	12.84	12.52	18.21
2021-22	17.23	33.61	21.97	17.88	15.62	24.87	21.20	14.00	16.10	15.77
2022-23	16.84	36.26	23.38	20.56	17.55	24.37	19.58	15.49	13.68	17.50
2023-24	16.73	37.41	23.86	23.60	18.97	26.66	20.13	15.91	15.97	20.08
AVG	15.78	36.93	22.14	20.62	15.76	24.48	20.58	13.47	12.98	17.62

[**Source:** Calculated From Published Annual Reports of Selected Companies]

Figure -5.16 Figure Showing Operating Profit to Sales Ratio of Selected FMCG Companies for 2014-15 to 2023-24



[**Source:** Calculated From Published Annual Reports of Selected Companies]

Interpretation:

Table No 5.16 and Chart No 5.16 represent the Operating Profit to Sales Ratio of the selected FMCG Companies during the study period i.e. from 2013-14 to 2024-25.

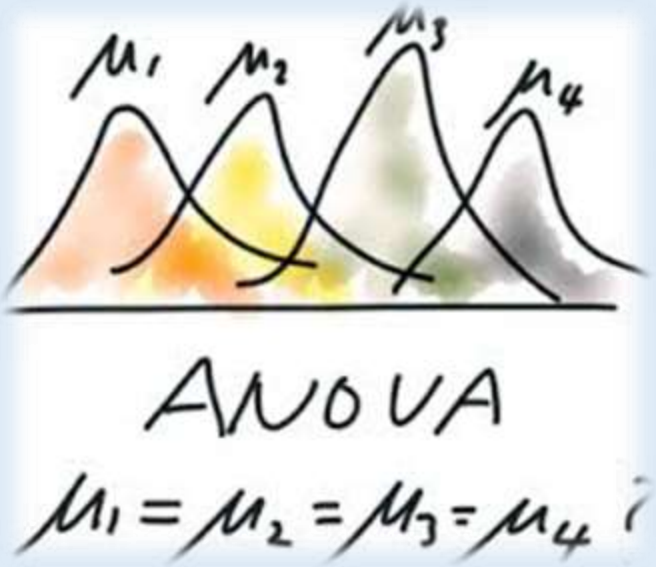
The average of Operating Profit to Sales Ratio of HUL, ITC, Nestle India Ltd., Varun Beverages Limited, Britannia Limited, Godrej Consumer Products, Dabur India Limited, Tata Consumer Products, United Spirit Limited, Marico Limited is respectively 15.78, 36.93, 22.14, 20.62, 15.76, 24.48, 20.58, 13.47, 12.98 and 17.62

Highest Average of Operating Profit to Sales Ratio is of ITC that is 36.93 and lowest average of Return on Equity Ratio is of United Spirit Limited that is 12.98.

PART- 5.2

ANOVA-

APPLICATION



Hypotheses Testing:

[5.2A]Current Ratio:

- **H_0** = There is no significant difference between **Current Ratio** of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between **Current Ratio** of Selected FMCG Companies during the study period

Table 5.17: ANOVA on Current Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	40.1899	9	4.4655	12.86	1.99
Within Groups	31.2465	90	0.3472		
Total	71.4364	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 12.86 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Current Ratio of selected FMCG Companies during the study period.

[5.2B] Quick Ratio:

- **H_0** = There is no significant difference between **Quick Ratio** of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between **Quick Ratio** of Selected FMCG Companies during the study period

Table 5.18: ANOVA on Quick Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	15.4895	9	1.7211	6.97	1.99
Within Groups	22.2081	90	0.2468		
Total	37.6976	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 6.97 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Quick Ratio of selected FMCG Companies during the study period.

[5.2C] Working Capital Ratio:

- **H_0** = There is no significant difference between **Working Capital Ratio** of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between **Working Capital Ratio** of Selected FMCG Companies during the study period

Table 5.19: ANOVA on Working Capital Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	9882.4	9	1098.0	3.08	1.99
Within Groups	32050.0	90	356.1		
Total	41932.4	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 3.08 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Working Capital Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

- **H_0** = There is no significant difference between Account Receivable Turnover Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Account Receivable Turnover Ratio of Selected FMCG Companies during the study period

Table 5.20: ANOVA on Account Receivable Turnover Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	30080.45	9	3342.272	71.25	1.99
Within Groups	4221.87	90	46.90966		
Total	34302.32	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 71.25 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Account Receivable Turnover Ratio of selected FMCG Companies during the study period.

[5.2E] Inventory Turnover Ratio:

- **H_0** = There is no significant difference between Inventory Turnover Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Inventory Turnover Ratio of Selected FMCG Companies during the study period

Table 5.21: ANOVA on Inventory Turnover Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	1011.338	9	112.3709	16.54	1.99
Within Groups	611.3301	90	6.792557		
Total	1622.668	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 16.54 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Inventory Turnover Ratio of selected FMCG Companies during the study period.

[5.2F] Assets Turnover Ratio:

- **H_0** = There is no significant difference between Assets Turnover Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Assets Turnover Ratio of Selected FMCG Companies during the study period

Table 5.22: ANOVA on Assets Turnover Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	11.35849	9	1.262054	22.34	1.99
Within Groups	5.083861	90	0.056487		
Total	16.4423	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 22.34 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Assets Turnover Ratio of selected FMCG Companies during the study period

[5.2G]Collection Period Ratio:

- **H_0** = There is no significant difference between Collection Period Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Collection Period Ratio of Selected FMCG Companies during the study period

Table 5.23: ANOVA on Collection Period Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	68295.77	9	7588.419	173.90	1.99
Within Groups	3927.196	90	43.63551		
Total	72222.97	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 173.90 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Collection Period Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2H]Debt Ratio:

- **H_0** = There is no significant difference between Debt Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Debt Ratio of Selected FMCG Companies during the study period

Table 5.24: ANOVA on Debt Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	12426.33	9	1380.703	17.63	1.99
Within Groups	7047.288	90	78.3032		
Total	19473.619	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 17.63 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Debt Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2I] Interest Coverage Ratio:

- **H_0** = There is no significant difference between Interest Coverage Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Interest Coverage Ratio of Selected FMCG Companies during the study period

Table 5.25: ANOVA on Interest Coverage Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	366293.4	9	40699.27	19.51	1.99
Within Groups	187760.2	90	2086.225		
Total	554053.64	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 19.51 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Interest Coverage Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2J] Equity Ratio:

- **H_0** = There is no significant difference between Equity Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Equity Ratio of Selected FMCG Companies during the study period

Table 5.26 ANOVA on Equity Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	103.57	9	11.50777	38.87	1.99
Within Groups	26.64758	90	0.296084		
Total	130.2175	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 38.87 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Equity Ratio of selected FMCG Companies during the study period.

[5.2K]Economic Value Added:

- **H_0** = There is no significant difference between EV to Net Operating Income of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between EV to Net Operating Income of Selected FMCG Companies during the study period

Table 5.27: ANOVA on Economic Value Added of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	453.4052	9	50.37835	11.82	1.99
Within Groups	383.7528	90	4.26392		
Total	837.157979	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 11.82 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Economic Value to Net Operating Income Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2L]Return on Assets:

- **H_0** = There is no significant difference between Return on Assets Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Return on Assets Ratio of Selected FMCG Companies during the study period

Table 5.28: ANOVA on Return on Assets Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	8293.471	9	921.4968	23.03	1.99
Within Groups	3601.84	90	40.02045		
Total	11895.311	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 23.03 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Assets Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2M] Return on Capital Employed:

- **H_0** = There is no significant difference between Return on Capital Employed Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Return on Capital Employed Ratio of Selected FMCG Companies during the study period

Table 5.29: ANOVA on Return on Capital Employed Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	59608.3	9	6623.144	16.98	1.99
Within Groups	35103.64	90	390.0405		
Total	94711.9421	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 16.98 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Return on Capital Employed Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2N] Return on Current Assets:

- **H_0** = There is no significant difference between Return on Current Assets Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Return on Current Assets Ratio of Selected FMCG Companies during the study period

Table 5.30: ANOVA on Return on Current Assets Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	17.01967	9	1.891074	48.59	1.99
Within Groups	3.502563	90	0.038917		
Total	20.5222	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 48.59 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Return on Current Ratio of selected FMCG Companies during the study period.

[5.2O] Return on Equity Ratio:

- **H_0** = There is no significant difference between Return on Equity Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Return on Equity Ratio of Selected FMCG Companies during the study period

Table 5.31: ANOVA on Return on Equity Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	47529.75	9	5281.083	37.92	1.99
Within Groups	12535.45	90	139.2827		
Total	60065.2	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 37.92 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Return on Equity Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

[5.2P] Operating Profit to Sales Ratio:

- **H_0** = There is no significant difference between Operating Profit to Sales Ratio of Selected FMCG Companies during the study period
- **H_1** = There is significant difference between Operating Profit to Sales Ratio of Selected FMCG Companies during the study period

Table 5.32: ANOVA on Operating Profit to Sales Ratio of Selected FMCG Companies

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	F Calculated	F Tabulated
Between Groups	4452.45	9	494.7167	100.72	1.99
Within Groups	442.0837	90	4.912041		
Total	4894.53365	99			

[Source: Computed from Data]

Interpretation:

The calculated value of 'F' is 100.72 whereas the table value of 'F' is 1.99. It shows that the calculated value of 'F' is more than tabulated value of 'F' at 5% level of significance. So, as a result the null hypothesis (H_0) is rejected and alternate hypothesis (H_1) is accepted that means there is significant difference in Operating Profit to Sales Ratio of selected FMCG Companies during the study period. Hence the result is not as per expectations.

PART-5.3

DEA- Data Envelopment Analysis Model

Table Showing Data-Envelopment Analysis Model

Ratio		Weight	Input/ Output
Liquidity Ratio	Current Ratio	0.50	**Input-1**
	Quick Ratio	0.30	
	Working Capital Turnover Ratio	0.20	
	Total	**1**	
Activity Ratio	Account Receivable Turnover Ratio	0.20	**Input-2**
	Inventory Turnover Ratio	0.25	
	Assets Turnover Ratio	0.35	
	Collection Period Ratio	0.20	
	Total	**1**	
Leverage Ratio	Debt Equity Ratio	0.50	**Input-3**
	Interest Coverage Ratio	0.30	
	Equity Ratio	0.20	
	Total	**1**	
Economic Indicator	**EVA**	**1**	**Input-4**
Profitability Ratio	Return on Assets (ROA)	0.35	**Output**
	Return on Capital Employed (ROCE)	0.22	
	Return on Current Assets	0.10	
	Return on Equity	0.18	
	Operating Profit to Sales	0.15	
	Total	**1**	

[**Source:** Reza Tehrani, M. R. (2012). A Model for Evaluating Financial Performance of Companies by Data Envelopment Analysis. *International Business Research Vol.5*, 8-16.]

Table 5.33: DEA Application of Hindustan Uniliver Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.53	0.72	0.65	0.64	0.68	0.65	0.63	0.67	0.69	0.82
	Quick Ratio	**0.3**	0.23	0.32	0.29	0.31	0.32	0.31	0.28	0.29	0.31	0.40
	WCR	**0.2**	12.82	2.16	2.95	2.76	2.53	2.77	3.29	2.76	2.67	1.53
	Total	**1.00**	**13.57**	**3.19**	**3.89**	**3.71**	**3.53**	**3.73**	**4.20**	**3.73**	**3.68**	**2.75**
Activity Ratio	ARTR	**0.2**	5.17	4.27	4.37	4.29	3.40	4.12	4.24	3.72	3.20	2.98
	ITR	**0.25**	0.97	1.17	1.32	1.48	1.60	1.67	1.48	1.31	1.34	1.39
	ATR	**0.35**	0.71	0.52	0.51	0.49	0.51	0.48	0.21	0.17	0.19	0.19
	CPR	**0.20**	1.86	2.50	2.12	2.43	3.20	1.97	2.62	2.75	3.38	3.25
	Total	**1**	**8.70**	**8.46**	**8.33**	**8.69**	**8.70**	**8.24**	**8.54**	**7.95**	**8.10**	**7.81**
Leverage Ratio	Debt Ratio	**0.5**	0.28	1.25	2.13	0.76	1.33	0.57	0.10	0.09	0.10	0.01
	Int.CR	**0.3**	110.36	118.92	87.22	109.28	91.61	25.89	29.43	36.33	39.11	13.91
	Equity Ratio	**0.2**	0.32	0.31	0.29	0.25	0.24	0.22	0.07	0.07	0.07	0.06
	Total	**1**	**110.96**	**120.48**	**89.65**	**110.28**	**93.18**	**26.68**	**29.61**	**36.49**	**39.27**	**13.98**
Economic Indicator	EVA	**1**	**6.05**	**5.96**	**6.11**	**8.26**	**9.55**	**12.67**	**12.33**	**9.33**	**10.09**	**8.70**
Profitability Ratio	ROA	**0.35**	15.88	14.95	15.18	14.87	16.75	16.33	5.44	5.96	6.42	6.36
	ROCE	**0.22**	3.81	2.78	2.14	2.47	2.80	2.75	3.25	3.54	3.93	3.69
	RCA	**0.1**	0.07	0.06	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.07
	ROE	**0.18**	5.15	4.96	5.33	6.07	7.13	7.62	8.12	9.09	10.09	10.73
	Op. Profit to Sales	**0.15**	2.10	2.00	2.11	2.28	2.37	2.61	2.59	2.58	2.53	2.51
	Total	**1**	**27.01**	**24.74**	**24.82**	**25.75**	**29.12**	**29.39**	**19.48**	**21.26**	**23.04**	**23.36**

[Source: Calculated from data]

Table 5.34: Input, Output and Efficiency of HUL

Year	Input	Output	Efficiency
2014-15	139.28	27.01	0.19390
2015-16	138.09	24.74	0.17917
2016-17	107.98	24.82	0.22991
2017-18	130.94	25.75	0.19665
2018-19	114.96	29.12	0.25333
2019-20	51.31	29.39	0.57276
2020-21	54.68	19.48	0.35634
2021-22	57.50	21.26	0.36964
2022-23	61.14	23.04	0.37677
2023-24	33.24	23.36	0.70261

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 27.01/139.28

= 0.19390

So, efficiency score of HUL for the year 2014-15 is 0.19390

Interpretation:

Table-5.34 shows input, output and efficiency score of HUL during study period. An efficiency score of HUL is 0.19390, 0.17917, 0.22991, 0.19665, 0.25333, 0.57276, 0.35634, 0.36964, 0.37677 and 0.70261 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2023-24 i.e. 0.70261 and lowest in the year 2015-16 i.e. 0.17917

Table 5.35: DEA Application of ITC Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	1.03	0.83	1.80	1.38	1.54	2.01	1.56	1.35	1.42	1.45
	Quick Ratio	**0.3**	0.41	0.32	0.73	0.58	0.69	0.94	0.66	0.55	0.59	0.57
	WCR	**0.2**	0.59	0.77	0.45	0.52	0.45	0.33	0.42	0.58	0.58	0.55
	Total	**1.00**	**2.03**	**1.92**	**2.98**	**2.49**	**2.67**	**3.28**	**2.64**	**2.47**	**2.59**	**2.57**
Activity Ratio	ARTR	**0.2**	2.41	2.89	2.63	2.35	1.87	2.33	2.90	3.76	4.01	2.93
	ITR	**0.25**	0.52	0.46	0.51	0.54	0.59	0.34	0.31	0.74	0.40	0.31
	ATR	**0.35**	0.22	0.18	0.18	0.16	0.16	0.14	0.15	0.18	0.19	0.18
	CPR	**0.20**	3.44	3.34	4.02	4.24	5.92	3.35	3.35	2.53	2.57	3.69
	Total	**1**	**6.60**	**6.88**	**7.33**	**7.28**	**8.53**	**6.16**	**6.71**	**7.21**	**7.16**	**7.11**
Leverage Ratio	Debt Ratio	**0.5**	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00
	Int.CR	**0.3**	3.99	3.92	3.27	4.30	4.49	4.96	4.13	4.45	5.99	6.90
	Equity Ratio	**0.2**	0.36	0.33	0.45	0.39	0.35	0.33	0.34	0.33	0.30	0.29
	Total	**1**	**4.39**	**4.27**	**3.73**	**4.70**	**4.85**	**5.29**	**4.48**	**4.78**	**6.29**	**7.19**
Economic Indicator	EVA	**1**	**6.94**	**6.99**	**8.43**	**7.62**	**8.00**	**8.08**	**7.16**	**5.42**	**5.83**	**4.48**
Profitability Ratio	ROA	**0.35**	11.13	10.61	10.01	9.53	9.27	8.89	8.40	9.27	10.54	10.56
	ROCE	**0.22**	10.38	11.93	8.88	9.43	9.10	7.77	7.24	9.23	10.83	10.67
	RCA	**0.1**	0.12	0.10	0.23	0.19	0.19	0.21	0.17	0.17	0.20	0.21
	ROE	**0.18**	3.16	3.36	2.30	2.51	2.71	2.80	2.51	2.91	3.59	3.80
	OP to Sales	**0.15**	5.54	5.80	5.45	5.74	5.77	5.89	5.12	5.04	5.44	5.61
	Total	**1**	**30.32**	**31.80**	**26.86**	**27.40**	**27.04**	**25.55**	**23.45**	**26.62**	**30.59**	**30.85**

[Source: Calculated from data]

Table 5.36: Input, Output and Efficiency of ITC Ltd.

Year	Input	Output	Efficiency
2014-15	19.97	30.32	1.51862
2015-16	20.06	31.80	1.58497
2016-17	22.48	26.86	1.19517
2017-18	22.09	27.40	1.24704
2018-19	24.05	27.04	1.12441
2019-20	22.81	25.55	1.12003
2020-21	21.00	23.45	1.11662
2021-22	19.88	26.62	1.33897
2022-23	21.87	30.59	1.39874
2023-24	21.35	30.85	1.44494

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 30.32/19.97

= 1.51862

So, efficiency score of ITC Ltd. for the year 2014-15 is 1.51862

Interpretation:

Table-5.36 shows input, output and efficiency score of ITC Ltd. during study period. An efficiency score of ITC Ltd. is 1.51862, 1.58497, 1.19517, 1.24704, 1.12441, 1.12003, 1.11662, 1.33897, 1.39874 and 1.44494 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2015-16 i.e. 1.58497 and lowest in the year 2020-21 i.e. 1.11662

Table 5.37: DEA Application of Nestle India Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.84	1.00	1.32	1.28	0.87	0.84	0.53	0.57	0.47	0.44
	Quick Ratio	**0.3**	0.34	0.43	0.61	0.61	0.35	0.33	0.13	0.15	0.14	0.11
	WCR	**0.2**	1.63	1.12	0.82	0.78	1.63	1.58	21.71	8.23	-19.43	-10.58
	Total	**1.00**	**2.81**	**2.55**	**2.75**	**2.67**	**2.85**	**2.75**	**22.37**	**8.95**	**-18.82**	**-10.03**
Activity Ratio	ARTR	**0.2**	11.82	13.45	14.51	13.36	14.22	11.76	11.88	12.31	12.81	12.14
	ITR	**0.25**	2.49	2.45	2.77	2.93	2.41	4.34	3.12	1.42	1.52	1.72
	ATR	**0.35**	0.60	0.33	0.33	0.34	0.41	0.41	0.42	0.45	0.46	0.55
	CPR	**0.20**	0.70	0.78	0.65	0.81	0.68	0.90	0.82	0.83	0.77	0.90
	Total	**1**	**15.61**	**17.00**	**18.26**	**17.42**	**17.73**	**17.40**	**16.24**	**15.01**	**15.57**	**15.31**
Leverage Ratio	Debt Ratio	**0.5**	0.15	0.24	0.24	0.22	0.37	0.22	0.21	0.17	0.15	0.15
	Int.CR	**0.3**	3.26	5.19	6.07	6.73	6.16	5.27	4.37	6.84	10.46	11.12
	Equity Ratio	**0.2**	0.32	0.28	0.26	0.24	0.27	0.24	0.23	0.21	0.19	0.18
	Total	**1**	**3.72**	**5.72**	**6.57**	**7.18**	**6.80**	**5.74**	**4.82**	**7.22**	**10.80**	**11.45**
Economic Indicator	EVA	**1**	**50.78**	**46.31**	**55.26**	**69.65**	**85.23**	**44.67**	**53.69**	**44.22**	**50.93**	**55.33**
Profitability Ratio	ROA	**0.35**	4.70	7.43	8.83	10.86	12.94	12.78	12.51	13.74	14.42	17.93
	ROCE	**0.22**	8.28	8.25	8.95	10.69	15.66	11.98	27.49	20.94	22.62	27.01
	RCA	**0.1**	0.03	0.04	0.05	0.05	0.07	0.07	0.11	0.10	0.12	0.15
	ROE	**0.18**	1.53	2.70	3.47	4.69	4.95	5.38	5.48	6.58	7.76	10.06
	OP to Sales	**0.15**	2.85	2.78	3.14	3.48	3.31	3.60	3.66	3.30	3.51	3.58
	Total	**1**	**17.39**	**21.21**	**24.44**	**29.77**	**36.92**	**33.81**	**49.24**	**44.65**	**48.42**	**58.74**

[Source: Calculated from data]

Table 5.38: Input, Output and Efficiency of Nestle India Limited

Year	Input	Output	Efficiency
2014-15	72.92	17.39	0.23850
2015-16	71.58	21.21	0.29626
2016-17	82.83	24.44	0.29506
2017-18	96.93	29.77	0.30715
2018-19	112.61	36.92	0.32785
2019-20	70.55	33.81	0.47926
2020-21	97.12	49.24	0.50704
2021-22	75.41	44.65	0.59218
2022-23	58.48	48.42	0.82790
2023-24	72.06	58.74	0.81509

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 17.39/72.92

= 0.23850

So, efficiency score of Nestle India Limited for the year 2014-15 is 0.23850

Interpretation:

Table-5.38 shows input, output and efficiency score of Nestle India Limited during study period. An efficiency score of Nestle India Limited 0.23850, 0.29626, 0.29506, 0.30715, 0.32785, 0.47926, 0.50704, 0.59218, 0.82790 and 0.81509 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2022-23 i.e. 0.82790 and lowest in the year 2014-15 i.e. 0.23850

Table 5.39: DEA Application of Varun Beverages Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.41	0.29	0.25	0.31	0.33	0.37	0.33	0.36	0.38	0.45
	Quick Ratio	**0.3**	0.20	0.11	0.11	0.17	0.16	0.15	0.14	0.12	0.13	0.14
	WCR	**0.2**	2.59	1.39	1.01	1.40	1.70	2.40	1.52	1.94	2.60	7.06
	Total	**1.00**	**3.20**	**1.79**	**1.37**	**1.88**	**2.19**	**2.91**	**1.99**	**2.42**	**3.10**	**7.65**
Activity Ratio	ARTR	**0.2**	7.07	8.50	7.89	5.11	4.25	5.68	4.14	6.07	9.80	8.77
	ITR	**0.25**	2.36	2.04	2.07	2.43	2.31	2.09	1.80	0.89	1.10	1.00
	ATR	**0.35**	0.21	0.18	0.15	0.14	0.15	0.17	0.14	0.17	0.24	0.23
	CPR	**0.20**	1.26	1.28	1.24	2.26	2.54	1.70	2.55	1.46	1.04	1.23
	Total	**1**	**10.90**	**11.99**	**11.34**	**9.93**	**9.25**	**9.63**	**8.62**	**8.59**	**12.17**	**11.23**
Leverage Ratio	Debt Ratio	**0.5**	31.65	18.97	10.55	16.97	17.70	16.14	15.61	12.54	15.68	16.99
	Int.CR	**0.3**	0.41	0.77	0.75	0.78	1.01	0.97	0.54	1.63	3.59	3.24
	Equity Ratio	**0.2**	0.93	0.65	0.76	0.69	0.60	0.69	0.70	0.96	1.17	0.93
	Total	**1**	**32.98**	**20.38**	**12.06**	**18.44**	**19.31**	**17.80**	**16.85**	**15.12**	**20.45**	**21.16**
Economic Indicator	EVA	**1**	**2.15**	**2.32**	**2.67**	**4.46**	**4.28**	**4.11**	**5.94**	**6.16**	**8.43**	**13.09**
Profitability Ratio	ROA	**0.35**	2.57	3.01	3.20	3.28	3.77	3.80	1.91	3.25	5.84	6.51
	ROCE	**0.22**	3.70	3.77	4.12	4.26	4.60	4.47	3.18	4.21	6.74	7.39
	RCA	**0.1**	0.03	0.04	0.04	0.04	0.05	0.05	0.02	0.03	0.06	0.08
	ROE	**0.18**	0.28	0.48	0.43	0.49	0.65	0.57	0.28	0.35	0.51	0.72
	OP to Sales	**0.15**	2.38	3.01	3.48	3.54	3.34	3.22	2.64	2.68	3.08	3.54
	Total	**1**	**8.97**	**10.30**	**11.28**	**11.61**	**12.41**	**12.10**	**8.03**	**10.52**	**16.23**	**18.25**

[Source: Calculated from data]

Table 5.40: Input, Output and Efficiency of Varun Beverages Limited

Year	Input	Output	Efficiency
2014-15	49.23	8.97	0.18215
2015-16	36.48	10.30	0.28228
2016-17	27.44	11.28	0.41085
2017-18	34.71	11.61	0.33446
2018-19	35.04	12.41	0.35433
2019-20	34.45	12.10	0.35108
2020-21	33.40	8.03	0.24050
2021-22	32.29	10.52	0.32587
2022-23	44.14	16.23	0.36775
2023-24	53.13	18.25	0.34350

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 8.97/49.23

= 0.18215

So, efficiency score of Varun Beverages Limited for the year 2014-15 is 0.18215

Interpretation:

Table-5.40 shows input, output and efficiency score of Varun Beverages Limited during study period. An efficiency score of Varun Beverages Limited 0.18215, 0.28228, 0.41085, 0.33446, 0.35433, 0.35108, 0.24050, 0.32587, 0.36775 and 0.34350 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2016-17 i.e. 0.41085 and lowest in the year 2014-15 i.e. 0.18215.

Table 5.41: DEA Application of Britannia Industries Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.59	0.53	0.92	1.01	0.97	0.72	0.60	0.47	0.57	0.58
	Quick Ratio	**0.3**	0.27	0.23	0.39	0.48	0.45	0.35	0.27	0.18	0.26	0.27
	WCR	**0.2**	6.33	21.28	1.84	1.33	1.41	2.22	3.60	-10.43	5.43	5.01
	Total	**1.00**	**7.19**	**22.04**	**3.14**	**2.82**	**2.82**	**3.29**	**4.48**	**-9.78**	**6.27**	**5.86**
Activity Ratio	ARTR	**0.2**	16.09	11.18	9.36	6.34	4.50	5.26	7.75	7.58	7.71	6.66
	ITR	**0.25**	5.19	5.18	3.49	3.91	3.65	4.34	3.12	1.42	1.52	1.72
	ATR	**0.35**	0.82	0.65	0.56	0.50	0.46	0.38	0.39	0.44	0.45	0.45
	CPR	**0.20**	0.72	0.98	1.10	1.81	2.44	1.61	1.17	1.39	1.30	1.57
	Total	**1**	**22.82**	**17.98**	**14.51**	**12.56**	**11.05**	**11.59**	**12.43**	**10.82**	**10.98**	**10.39**
Leverage Ratio	Debt Ratio	**0.5**	0.09	0.05	0.13	0.10	0.08	8.29	12.12	15.55	15.41	12.17
	Int.CR	**0.3**	4.20	5.06	5.76	6.87	8.03	9.08	7.60	5.12	5.79	5.96
	Equity Ratio	**0.2**	0.19	0.16	0.13	0.10	0.09	0.07	0.06	0.07	0.06	0.06
	Total	**1**	**4.48**	**5.27**	**6.02**	**7.07**	**8.20**	**17.44**	**19.78**	**20.74**	**21.25**	**18.18**
Economic Indicator	EVA	**1**	**3.58**	**4.04**	**4.82**	**6.41**	**7.06**	**5.99**	**7.20**	**5.93**	**6.83**	**7.42**
Profitability Ratio	ROA	**0.35**	12.56	12.93	11.86	10.94	10.63	9.52	11.69	11.39	12.12	12.57
	ROCE	**0.22**	21.19	31.58	14.84	11.79	12.69	15.65	23.48	27.75	20.29	20.75
	RCA	**0.1**	0.06	0.08	0.06	0.05	0.06	0.06	0.06	0.06	0.07	0.07
	ROE	**0.18**	6.63	8.50	9.39	10.85	12.87	14.77	18.51	17.03	22.35	22.46
	OP to Sales	**0.15**	1.61	2.14	2.15	2.27	2.38	2.42	2.85	2.34	2.63	2.85
	Total	**1**	**42.06**	**55.21**	**38.31**	**35.90**	**38.63**	**42.42**	**56.60**	**58.57**	**57.45**	**58.69**

[Source: Calculated from data]

Table 5.42: Input, Output and Efficiency of Britannia Industries Limited

Year	Input	Output	Efficiency
2014-15	38.07	42.06	1.10477
2015-16	49.34	55.21	1.11913
2016-17	28.50	38.31	1.34421
2017-18	28.86	35.90	1.24370
2018-19	29.13	38.63	1.32605
2019-20	38.30	42.42	1.10741
2020-21	43.89	56.60	1.28942
2021-22	27.71	58.57	2.11371
2022-23	45.33	57.45	1.26744
2023-24	41.85	58.69	1.40247

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 42.06/38.07

= 1.10477

So, efficiency score of Britannia Industries Limited for the year 2014-15 is 1.10477

Interpretation:

Table-5.42 shows input, output and efficiency score of Britannia Industries Limited during study period. An efficiency score of Britannia Industries Limited is 1.10477, 1.11913, 1.34421, 1.24370, 1.32605, 1.10741, 1.28942, 2.11371, 1.26744 and 1.40247 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2021-22 i.e. 2.11371 and lowest in the year 2014-15 i.e. 1.10477

Table 5.43: DEA Application of Godrej Consumer Products

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.44	0.68	0.59	0.63	0.56	0.60	0.78	1.31	1.51	0.45
	Quick Ratio	**0.3**	0.17	0.16	0.24	0.27	0.22	0.24	0.29	0.54	0.74	0.21
	WCR	**0.2**	-5.18	3.05	3.69	2.44	5.97	3.25	1.85	0.91	0.70	-5.18
	Total	**1.00**	**-4.56**	**3.89**	**4.52**	**3.34**	**6.75**	**4.09**	**2.92**	**2.75**	**2.96**	**-4.52**
Activity Ratio	ARTR	**0.2**	4.17	2.76	2.73	2.98	2.38	2.27	3.13	3.02	3.13	2.58
	ITR	**0.25**	2.26	2.17	2.11	2.28	2.31	2.08	0.88	1.03	1.22	1.20
	ATR	**0.35**	0.21	0.22	0.19	0.19	0.20	0.19	0.20	0.19	0.18	0.16
	CPR	**0.20**	2.36	4.20	3.22	3.45	4.54	4.07	2.89	3.54	3.05	4.26
	Total	**1**	**9.00**	**9.35**	**8.25**	**8.90**	**9.43**	**8.61**	**7.09**	**7.77**	**7.58**	**8.20**
Leverage Ratio	Debt Ratio	**0.5**	0.01	0.03	1.22	0.10	0.10	2.29	0.10	0.12	0.11	7.62
	Int.CR	**0.3**	7.02	8.03	9.47	7.74	7.11	7.54	19.59	17.89	24.34	3.17
	Equity Ratio	**0.2**	0.14	0.14	0.11	0.21	0.31	0.29	0.27	0.23	0.19	0.16
	Total	**1**	**7.17**	**8.19**	**10.80**	**8.04**	**7.52**	**10.12**	**19.95**	**18.24**	**24.65**	**10.95**
Economic Indicator	EVA	**1**	**7.89**	**9.73**	**11.99**	**14.13**	**12.35**	**9.76**	**11.90**	**12.94**	**12.91**	**15.43**
Profitability Ratio	ROA	**0.35**	6.14	6.81	6.46	7.07	8.08	7.35	7.37	6.98	6.21	3.82
	ROCE	**0.22**	17.90	13.96	15.82	16.27	21.50	18.31	17.28	12.66	10.98	12.15
	RCA	**0.1**	0.06	0.08	0.06	0.06	0.08	0.07	0.09	0.07	0.06	0.05
	ROE	**0.18**	4.57	5.17	6.01	3.54	2.71	2.56	2.85	3.12	3.30	2.50
	OP to Sales	**0.15**	2.94	3.08	3.59	3.79	3.99	3.97	3.96	3.73	3.66	4.00
	Total	**1**	**31.62**	**29.10**	**31.95**	**30.74**	**36.36**	**32.26**	**31.55**	**26.56**	**24.20**	**22.52**

[Source: Calculated from data]

Table 5.44: Input, Output and Efficiency of Godrej Consumer Products

Year	Input	Output	Efficiency
2014-15	19.50	31.62	1.62163
2015-16	31.16	29.10	0.93385
2016-17	35.55	31.95	0.89873
2017-18	34.41	30.74	0.89334
2018-19	36.04	36.36	1.00887
2019-20	32.58	32.26	0.99022
2020-21	41.86	31.55	0.75372
2021-22	41.71	26.56	0.63674
2022-23	48.10	24.20	0.50308
2023-24	30.07	22.52	0.74889

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 31.62/19.50

= 1.62163

So, efficiency score of Godrej Consumer Products for the year 2014-15 is 0.19390

Interpretation:

Table-5.44 shows input, output and efficiency score of Godrej Consumer Products during study period. An efficiency score of Godrej Consumer Products is 1.62163, 0.93385, 0.89873, 0.89334, 1.00887, 0.99022, 0.75372, 0.63674, 0.50308 and 0.74889 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2014-15 i.e. 1.62163 and lowest in the year 2022-23 i.e. 0.50308.

Table 5.45: DEA Application of Dabur India Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.62	0.66	0.74	0.79	0.70	1.13	0.69	0.57	0.42	0.59
	Quick Ratio	**0.3**	0.24	0.27	0.29	0.30	0.27	0.51	0.25	0.18	0.11	0.24
	WCR	**0.2**	3.47	2.40	1.84	1.54	2.06	0.69	1.81	5.01	-4.34	3.37
	Total	**1.00**	**4.34**	**3.34**	**2.87**	**2.64**	**3.03**	**2.34**	**2.76**	**5.77**	**-3.80**	**4.21**
Activity Ratio	ARTR	**0.2**	2.17	1.95	1.95	2.29	2.11	2.12	3.05	2.75	2.20	1.83
	ITR	**0.25**	2.47	2.34	2.21	1.98	2.14	1.95	1.61	0.69	0.71	0.70
	ATR	**0.35**	0.38	0.32	0.25	0.23	0.26	0.25	0.24	0.23	0.22	0.21
	CPR	**0.20**	4.55	5.34	4.60	4.19	5.05	4.39	2.86	4.06	4.72	5.75
	Total	**1**	**9.57**	**9.94**	**9.00**	**8.70**	**9.55**	**8.71**	**7.76**	**7.72**	**7.85**	**8.48**
Leverage Ratio	Debt Ratio	**0.5**	1.75	0.97	2.72	2.46	1.21	0.93	1.14	2.97	2.99	3.31
	Int.CR	**0.3**	26.47	31.31	19.15	15.44	12.67	21.93	26.60	20.12	12.12	7.56
	Equity Ratio	**0.2**	0.95	0.79	0.68	0.61	0.63	0.58	0.47	0.41	0.38	0.34
	Total	**1**	**29.17**	**33.07**	**22.54**	**18.51**	**14.51**	**23.44**	**28.21**	**23.50**	**15.49**	**11.21**
Economic Indicator	EVA	**1**	**8.59**	**7.63**	**9.28**	**10.34**	**11.52**	**12.54**	**13.21**	**11.64**	**11.18**	**10.22**
Profitability Ratio	ROA	**0.35**	8.28	8.06	6.95	6.78	7.89	8.08	7.91	7.83	7.03	6.80
	ROCE	**0.22**	20.48	20.24	15.30	15.17	18.07	9.92	16.29	20.58	27.29	15.54
	RCA	**0.1**	0.06	0.05	0.06	0.06	0.06	0.04	0.06	0.07	0.08	0.06
	ROE	**0.18**	0.89	1.05	1.06	1.15	1.28	1.43	1.73	1.96	1.90	2.08
	OP to Sales	**0.15**	2.59	2.87	3.15	3.30	3.29	3.28	3.26	3.18	2.94	3.02
	Total	**1**	**32.30**	**32.27**	**26.52**	**26.46**	**30.60**	**22.76**	**29.25**	**33.62**	**39.25**	**27.49**

[Source: Calculated from data]

Table 5.46: Input, Output and Efficiency of Dabur India Limited

Year	Input	Output	Efficiency
2014-15	51.67	32.30	0.62523
2015-16	53.98	32.27	0.59779
2016-17	43.69	26.52	0.60689
2017-18	40.19	26.46	0.65836
2018-19	38.62	30.60	0.79234
2019-20	47.03	22.76	0.48393
2020-21	51.94	29.25	0.56313
2021-22	48.63	33.62	0.69129
2022-23	30.72	39.25	1.27760
2023-24	34.12	27.49	0.80584

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 32.30/51.67

= 0.62523

So, efficiency score of Dabur India Limited for the year 2014-15 is 0.19390

Interpretation:

Table-5.46 shows input, output and efficiency score of Dabur India Limited during study period. An efficiency score of Dabur India Limited is 0.62523, 0.59779, 0.60689, 0.65836, 0.79234, 0.48393, 0.56313, 0.69129, 1.27760 and 0.80584 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2022-23 i.e. 1.27760 and lowest in the year 2020-21 i.e. 0.56313

Table 5.47: DEA Application of Tata Consumer Product

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.80	0.69	1.01	1.85	2.48	1.89	1.38	1.28	1.21	0.42
	Quick Ratio	**0.3**	0.10	0.14	0.16	0.71	0.92	0.78	0.52	0.52	0.50	0.12
	WCR	**0.2**	1.48	1.67	1.17	0.42	0.39	0.52	0.58	0.66	0.65	-3.21
	Total	**1.00**	**2.39**	**2.50**	**2.34**	**2.98**	**3.78**	**3.19**	**2.48**	**2.46**	**2.36**	**-2.67**
Activity Ratio	ARTR	**0.2**	3.57	3.61	3.79	3.45	2.74	2.81	3.45	3.87	3.54	3.04
	ITR	**0.25**	0.88	0.87	1.00	1.08	1.01	1.55	1.27	0.60	0.58	0.58
	ATR	**0.35**	0.21	0.18	0.17	0.16	0.16	0.14	0.13	0.13	0.13	0.13
	CPR	**0.20**	2.37	2.94	2.37	3.10	3.87	4.03	2.62	2.59	2.92	3.55
	Total	**1**	**7.03**	**7.59**	**7.33**	**7.79**	**7.79**	**8.52**	**7.48**	**7.19**	**7.17**	**7.31**
Leverage Ratio	Debt Ratio	**0.5**	6.53	0.65	0.37	0.86	0.05	0.15	0.13	0.12	0.13	3.93
	Int.CR	**0.3**	3.36	7.00	2.55	16.48	13.48	8.56	9.17	12.12	13.39	6.50
	Equity Ratio	**0.2**	0.34	0.31	0.29	0.26	0.25	0.15	0.14	0.13	0.12	0.10
	Total	**1**	**10.23**	**7.95**	**3.20**	**17.60**	**13.78**	**8.86**	**9.44**	**12.37**	**13.64**	**10.53**
Economic Indicator	EVA	**1**	**3.35**	**2.42**	**3.10**	**4.93**	**3.60**	**4.65**	**8.00**	**8.86**	**7.58**	**10.56**
Profitability Ratio	ROA	**0.35**	3.67	5.95	3.31	5.36	4.14	2.13	2.24	2.96	2.94	2.67
	ROCE	**0.22**	11.75	13.00	10.61	6.23	4.77	2.04	2.22	2.72	3.16	5.72
	RCA	**0.1**	0.04	0.05	0.04	0.04	0.03	0.02	0.02	0.03	0.03	0.05
	ROE	**0.18**	1.12	1.97	1.19	2.14	1.69	1.43	1.68	2.35	2.54	2.65
	OP to Sales	**0.15**	1.65	1.66	1.78	2.34	1.92	2.12	1.93	2.10	2.32	2.39
	Total	**1**	**18.22**	**22.64**	**16.93**	**16.10**	**12.54**	**7.75**	**8.09**	**10.16**	**10.99**	**13.48**

[Source: Calculated from data]

Table 5.48: Input, Output and Efficiency of Tata Consumer Product

Year	Input	Output	Efficiency
2014-15	22.99	18.22	0.79255
2015-16	20.47	22.64	1.10597
2016-17	15.98	16.93	1.05986
2017-18	33.30	16.10	0.48360
2018-19	28.95	12.54	0.43326
2019-20	25.22	7.75	0.30728
2020-21	27.40	8.09	0.29534
2021-22	30.88	10.16	0.32904
2022-23	30.75	10.99	0.35751
2023-24	25.73	13.48	0.52384

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 18.22/22.99

= 0.79255

So, efficiency score of Tata Consumer Product for the year 2014-15 is 0.79255

Interpretation:

Table-5.48 shows input, output and efficiency score of Tata Consumer Product during study period. An efficiency score of Tata Consumer Product 0.79255, 1.10597, 1.05986, 0.48360, 0.43326, 0.30728, 0.29534, 0.32904, 0.35751 and 0.52384 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2015-16 i.e. 1.10597 and lowest in the year 2020-21 i.e. 0.29534.

Table 5.49: DEA Application of United Spirits

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	0.43	0.45	0.48	0.52	0.52	0.52	0.61	0.76	0.88	0.97
	Quick Ratio	**0.3**	0.17	0.17	0.19	0.21	0.19	0.19	0.22	0.27	0.34	0.41
	WCR	**0.2**	-2.02	-2.74	-6.21	6.87	9.33	11.06	1.78	1.05	0.77	0.63
	Total	**1.00**	**-1.42**	**-2.12**	**-5.54**	**7.60**	**10.04**	**11.77**	**2.61**	**2.09**	**1.99**	**2.01**
Activity Ratio	ARTR	**0.2**	0.62	0.52	0.42	0.39	0.46	0.51	0.48	0.55	0.59	0.54
	ITR	**0.25**	1.30	1.09	1.15	1.09	1.20	1.24	1.00	0.59	0.62	0.61
	ATR	**0.35**	0.18	0.23	0.23	0.22	0.24	0.25	0.22	0.26	0.26	0.24
	CPR	**0.20**	15.83	20.48	25.28	24.12	20.47	18.34	19.99	17.91	16.77	18.86
	Total	**1**	**17.93**	**22.31**	**27.08**	**25.82**	**22.37**	**20.33**	**21.68**	**19.32**	**18.24**	**20.26**
Leverage Ratio	Debt Ratio	**0.5**	28.45	22.58	20.94	16.70	14.85	7.73	3.41	1.93	1.23	0.49
	Int.CR	**0.3**	0.56	0.50	0.55	1.28	1.65	2.04	1.16	5.09	4.02	6.95
	Equity Ratio	**0.2**	0.32	0.35	0.33	0.34	0.34	0.34	0.36	0.35	0.30	0.27
	Total	**1**	**29.33**	**23.44**	**21.82**	**18.31**	**16.84**	**10.11**	**4.93**	**7.37**	**5.56**	**7.71**
Economic Indicator	EVA	**1**	**7.22**	**4.85**	**4.12**	**5.90**	**4.75**	**4.02**	**5.19**	**6.87**	**5.22**	**7.58**
Profitability Ratio	ROA	**0.35**	4.33	3.19	2.67	4.48	4.90	5.31	2.75	4.58	5.09	5.73
	ROCE	**0.22**	10.46	19.15	21.43	16.79	19.70	20.48	9.56	10.48	7.85	8.04
	RCA	**0.1**	0.02	0.01	0.01	0.02	0.02	0.03	0.01	0.02	0.02	0.03
	ROE	**0.18**	1.38	0.92	0.83	1.37	1.50	1.61	0.79	1.36	1.72	2.18
	OP to Sales	**0.15**	0.91	1.61	1.70	1.88	2.15	2.49	1.88	2.42	2.05	2.40
	Total	**1**	**17.10**	**24.89**	**26.65**	**24.54**	**28.27**	**29.91**	**15.00**	**18.86**	**16.74**	**18.38**

[Source: Calculated from data]

Table 5.50: Input, Output and Efficiency of United Spirits

Year	Input	Output	Efficiency
2014-15	53.06	17.10	0.32225
2015-16	48.48	24.89	0.51349
2016-17	47.48	26.65	0.56121
2017-18	57.63	24.54	0.42587
2018-19	54.01	28.27	0.52354
2019-20	46.24	29.91	0.64692
2020-21	34.41	15.00	0.43593
2021-22	35.65	18.86	0.52903
2022-23	31.01	16.74	0.53976
2023-24	37.55	18.38	0.48950

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 17.10/53.06

= 0.32225

So, efficiency score of United Spirit for the year 2014-15 is 0.32225

Interpretation:

Table-5.50 shows input, output and efficiency score of United Spirit during study period. An efficiency score of United Spirit is 0.32225, 0.51349, 0.56121, 0.42587, 0.52354, 0.64692, 0.43593, 0.52903, 0.53976 and 0.48950 respectively during 2014-15 to 2023-24. An efficiency score is highest in the year 2019-20 i.e. 0.64692 and lowest in the year 2014-15 i.e. 0.32225

Table 5.51: DEA Application of Marico Limited

Ratio		Weight	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Liquidity Ratio	Current Ratio	**0.5**	1.01	0.95	1.22	1.23	1.18	1.17	1.05	1.03	1.09	1.01
	Quick Ratio	**0.3**	0.27	0.31	0.33	0.32	0.39	0.39	0.44	0.38	0.45	0.38
	WCR	**0.2**	1.29	1.24	0.83	0.75	0.77	0.77	0.86	1.04	0.96	1.08
	Total	**1.00**	**2.58**	**2.50**	**2.38**	**2.30**	**2.33**	**2.34**	**2.35**	**2.45**	**2.50**	**2.47**
Activity Ratio	ARTR	**0.2**	4.38	3.84	3.00	2.57	2.08	1.72	2.34	2.11	1.34	1.09
	ITR	**0.25**	1.48	1.61	1.12	0.99	1.21	1.26	0.82	1.11	0.96	0.94
	ATR	**0.35**	0.34	0.34	0.31	0.31	0.31	0.31	0.34	0.39	0.36	0.33
	CPR	**0.20**	2.04	2.83	3.43	4.07	5.26	5.80	3.57	5.40	8.18	9.07
	Total	**1**	**8.24**	**8.63**	**7.85**	**7.93**	**8.86**	**9.09**	**7.07**	**9.01**	**10.84**	**11.42**
Leverage Ratio	Debt Ratio	**0.5**	2.74	0.37	1.44	1.52	1.38	1.33	1.58	1.06	0.58	1.24
	Int.CR	**0.3**	13.22	19.47	27.48	38.18	15.08	11.75	18.19	14.45	12.73	13.44
	Equity Ratio	**0.2**	0.38	0.35	0.33	0.32	0.27	0.62	0.58	0.57	0.51	0.52
	Total	**1**	**16.35**	**20.19**	**29.24**	**40.02**	**16.72**	**13.71**	**20.35**	**16.08**	**13.82**	**15.20**
Economic Indicator	EVA	**1**	**5.35**	**6.30**	**7.84**	**8.15**	**7.42**	**6.06**	**8.29**	**8.64**	**8.26**	**9.17**
Profitability Ratio	ROA	**0.35**	8.10	9.61	10.73	8.37	8.87	10.94	10.42	11.25	10.51	10.11
	ROCE	**0.22**	9.85	12.52	11.26	9.50	9.52	10.84	11.75	12.16	12.58	14.96
	RCA	**0.1**	0.05	0.06	0.06	0.04	0.04	0.05	0.05	0.05	0.05	0.06
	ROE	**0.18**	2.21	2.81	3.38	2.68	3.37	1.80	1.86	2.02	2.13	2.00
	OP to Sales	**0.15**	2.12	2.55	2.96	2.65	2.54	2.87	2.73	2.37	2.63	3.01
	Total	**1**	**22.33**	**27.55**	**28.38**	**23.24**	**24.34**	**26.51**	**26.81**	**27.84**	**27.90**	**30.14**

[Source: Calculated from data]

Table 5.52: Input, Output and Efficiency of Marico Limited

Year	Input	Output	Efficiency
2014-15	32.51	22.33	0.68687
2015-16	37.62	27.55	0.73226
2016-17	47.31	28.38	0.59976
2017-18	58.40	23.24	0.39796
2018-19	35.33	24.34	0.68888
2019-20	31.19	26.51	0.84969
2020-21	38.06	26.81	0.70449
2021-22	36.18	27.84	0.76956
2022-23	35.42	27.90	0.78770
2023-24	38.27	30.14	0.78771

[**Source:** Computed from Data]

Calculation:

- **For 2014-15**

Efficiency Score = Output/Input

= 22.33/32.51

= 0.68687

So, efficiency score of Marico Limited for the year 2014-15 is 0.68687

Interpretation:

Table-5.52 shows input, output and efficiency score of Marico Limited during study period. An efficiency score of Marico Limited 0.68687, 0.73226, 0.59976, 0.39796, 0.68888, 0.84969, 0.70449, 0.76956, 0.78770 and 0.78771 respectively during 2024-15 to 2023-24. An efficiency score is highest in the year 2019-20 i.e. 0.84969 and lowest in the year 2017-18 i.e. 0.39796.

Table 5.53: Efficiency Score of Selected FMCG Companies

Company/Year	Efficiency Score										
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	AVG
HUL	0.19390	0.17917	0.22991	0.19665	0.25333	0.57276	0.35634	0.36964	0.37677	0.70261	0.343108
ITC Limited	1.51862	1.58497	1.19517	1.24074	1.12441	1.12003	1.11662	1.33897	1.39874	1.44494	1.308321
Nestle India Limited	0.23850	0.29626	0.29506	0.30715	0.32785	0.47926	0.50704	0.59218	0.82790	0.81509	0.468629
VBL	0.18215	0.28228	0.41085	0.33446	0.35433	0.35108	0.24050	0.32587	0.36775	0.34350	0.319277
BIL	1.10477	1.11913	1.34421	1.24370	1.32605	1.10741	1.28942	2.11371	1.26744	1.40247	1.331831
GCP	1.62163	0.93385	0.89873	0.89334	1.00887	0.99022	0.75372	0.63674	0.50308	0.74889	0.898907
Dabur India Limited	0.62523	0.59779	0.60689	0.65836	0.79234	0.48393	0.56313	0.69129	1.27760	0.80584	0.71024
TCP	0.79255	1.10597	1.05986	0.48360	0.43326	0.30728	0.29534	0.32904	0.35751	0.52384	0.568825
United Spirits	0.32225	0.51349	0.56121	0.42587	0.52354	0.64692	0.43593	0.52903	0.53976	0.48950	0.49875
Marico Limited	0.68687	0.73226	0.59976	0.39796	0.68888	0.84969	0.70449	0.76956	0.78770	0.78771	0.700488

[Source: Computed from Data]

Interpretation:

Table-5.53 represent efficiency score of selected FMCG companies during 2014-15 to 2024-25. It signifies that average of efficiency score during study period i.e. from 2014-15 to 2023-24 is highest in Britannia India Limited.

Table 5.54: Overall Rank as per DEA Model to the Selected FMCG Companies

Company/Year	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Avg. rank	Overall rank
	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank		
HUL	9	10	10	10	10	6	8	8	8	7	8.6	9
ITC Limited	2	1	2	2	2	1	2	2	1	1	1.7	2
Nestle India Limited	8	8	9	9	9	8	6	6	4	3	7.0	8
VBL	10	9	8	8	8	9	10	10	9	10	9.1	10
BIL	3	2	1	1	1	2	1	1	2	2	1.5	1
GCP	1	4	4	3	3	3	3	5	7	6	3.9	3
Dabur India Limited	6	6	5	4	4	7	5	4	3	4	4.8	4
Tata Consumer Product	4	3	3	5	7	10	9	9	10	8	6.8	7
United Spirits	7	7	7	6	6	5	7	7	6	9	6.7	6
Marico Limited	5	5	6	7	5	4	4	3	5	5	4.9	5

[Source: Computed from Data]

Interpretation:

Table-5.54 shows overall rank of selected FMCG Companies during 2014-15 to 2024-25. It is resolved that an Average rank of HUL, ITC Limited, Nestle India Limited, VBL, BIL, GCP, Dabur India Limited, Tata Consumer Product and United Spirits and Marico Limited is 8.6, 1.7, 7.0, 9.1, 1.5, 3.9, 4.8, 6.8, 6.7 and 4.9 respectively. An Average of Overall Rank of Britannia is lowest i.e. 1.5. So, it stood at 1st position and an Average of Overall Rank of Varun Beverages Limited is highest that is 9.1. so, it stood at 10th position.

References:

Annual Report:

1. Annual Report of HUL from 2014-15 to 2023-24
2. Annual Report of ITC from 2014-15 to 2023-24
3. Annual Report of Nestle India Limited from 2014-15 to 2023-24
4. Annual Report of Varun Beverages Limited from 2014-15 to 2023-24
5. Annual Report of Britannia Limited from 2014-15 to 2023-24
6. Annual Report of Godrej Consumer Product from 2014-15 to 2023-24
7. Annual Report of Dabur India Limited from 2014-15 to 2023-24
8. Annual Report of Tata Consumer Product from 2014-15 to 2023-24
9. Annual Report of United Spirits Limited from 2014-15 to 2023-24
10. Annual Report of Marico Limited from 2014-15 to 2023-24