UNIT-5 RATIO ANALYSIS

. MEANING OF RATIO.

A ratio is only a comparison of the numerator with the denominator. The term ratio refers to the numerical or quantitative relationship between two figures. A ratio is the relationship between two figures and obtained by dividing the former by the latter. Ratios are designed to show how one number is related to another. It is worked out by dividing one number by another.

RATIO ANALYSIS?

Ratio analysis is an important and age old technique of financial analysis. Ratio analysis involves comparison of relevant figures or useful interpretation of the financial statements. Ratios are relative form of financial data and very useful technique to check upon the efficiency of a firm. Some ratios indicate the trend or progress or downfall of the firm.

.DEFINE RATIOS:

Relationship expressed in quantitative terms between figures which have cause and effect relationships or which are connected with each other in some manner or the other.

Ratio may be defined as "the relationship between two accounting figures, expressed mathematically".

NATURE OF RATIO ANAYSIS.

Ration analysis is a technique of analysis and interpretation of financial statements. It is the process of establishing and interpreting various ratios for helping in making certain decisions. However, ratio analysis is not an end in itself. It is only a means of better understanding of financial strengths and weakness of a firm.

Calculation of mere ratios does not serve any purpose, unless several appropriate ratios are analyzed and interpreted .there are a number of ratios which can be calculated from the information given in the financial statements, but the analyst has to select the appropriate data and calculate only a few appropriate ratios from the same keeping in mind the objective of analysis.

The ratios may be used as a symptom like blood pressure, the pulse rate or the body temperature and their interpretation depends upon the caliber and competence of analyst.

MODES OF EXPRESSING 'RATIOS'?

Ratios may be expressed in any one or more of the following ways:

- *RATE*, which is the ratio between the two numerical facts over a period of time, for example, stock turnover is three times a year.
- **PURE RATIO OR PROPORTION** which is arrived at by the simple division of one number by another, for example, current asset to current liability ratio is 3:1.
- *PERCENTAGE* which is a special type of rate expressing the relationship in hundreds. It is arrived at by multiplying the quotient by 100, for example, gross profit is 30% of sales.

Ratios can be expressed as (a) Proportion, (b)Rate or times, (c) Percentage. Each way of expression may have a distinct advantage over the others. The analyst will choose a particular mode or a combination suitable for a specific purpose.

.WHAT ARE THE STEPS INVOLVED IN 'RATIO ANALYSIS'?

(i)Selection of relevant information:

The first task of the financial analyst is to select the information relevant to the decision under consideration from the statements and calculates appropriate ratios.

(ii)Comparison of calculated ratios:

The second step is to compare the calculated ratios with the ratios of the same firm relating to past on with the industry ratios. This step facilitates in assessing success or failure of the firm.

(iii)Interpretation and Reporting:

The third step involves interpretation, drawing of inferences and report writing conclusions are drawn after comparison in the shape of report or recommended course of action.

SIGNIFICANCE OF RATIO ANALYSIS.

Ratio analysis is a powerful tool of financial analysis. It is used as a device to analysis and interprets the financial health of a firm. Analysis of financial statements with the aid of ratio helps the management in decision making and control.

The use of ratio analysis is not confined to financial manager only. Different parties are interested in knowing the financial position of a firm for different purposes. Ratio analysis is used by creditors, banks, financial institutions, investors and shareholders. It helps them in making decisions regarding the granting of credit and making investments in the firm. Thus, ratio analysis is of immense use and has wide application.

USES /IMPORTANCE/ADVANTAGES OF RATIO ANALYSIS.

The inter relationship that exists among the different items appeared in the financial statements are revealed by accounting ratios. Ratio analysis of a firm's financial statements is of interest to a number of parties, mainly shareholders, creditors, financial executives etc.

A) MANAGERIAL USES OF RATIO ANALYSIS:

1. Helps in decision making:

The information provided in financial statements is not an end in itself and no meaningful conclusion can be drawn from these statements alone. Ratio analysis helps in making decisions from the information provided in these financial statements.

2. Helps in financing forecasting and planning:

Planning is looking ahead and the ratios calculated for a number of years work as a guide for the future. Meaningful conclusions can be drawn for future from these ratios. Thus ratio analysis helps in forecasting and planning.

3. Helps in communicating:

The information contained in the financial statements is conveyed in a meaningful manner to the one for whom it is meant. Thus, ratio analysis helps in communication and enhance the value of the financial statements.

4. Helps in co-ordination:

Ratios even help in coordination which is of utmost importance in effective business management. Better communication of efficiency and weakness of an enterprise results in better coordination in the enterprise.

5. Helps in control:

Standard ratios can be based upon proforma financial statements and variances or deviations, if any, can be found by comparing the actuals with the standards, so as to take a corrective action at the right time. The weakness or otherwise, if any, come to the knowledge of the management which helps in the effective control of the business.

6. Aid to measure general efficiency:

Ratios enable the mass of accounting data to be summarized and simplified. They act as an index of the efficiency of the enterprise.

7. Helps to measure financial solvency:

Ratios helps to evaluate the firm's performance over a period of time by comparing the present ratio with the past ones. They point out firm's liquidity position to meet its short term obligations and long term solvency.

8. Aid in corrective action:

Ratio analysis provides inter firm comparison. They highlight the factors associated with successful and unsuccessful firms. If comparison shows an unfavourable variance, corrective actions can be initiated.

9. Aid in intra firm comparison:

Ratio is an instrument of diagnosis of financial health of an enterprise. It facilitates the management to know whether the firm's financial position is improving or deteriorating by setting a trend with the help of ratios.

10. Evaluation of efficiency:

Ratio analysis is an effective instrument which when properly used is useful to assess important characteristics of business liquidity, solvency, profitability etc. A study of these aspects may enable conclusions to be drawn relating to capabilities of business.

11. Other uses:

There are so many other uses of the ratio analysis. It is an essential part of the budgetary control and standard costing. Ratios are of immense importance in the analysis and interpretation of financial statements as they bring the strength or weakness of a firm.

(B)UTILITY TO SHAREHOLDERS/INVESTORS:

An investor in the company will like to assess the financial position of the concern where he is going to invest. His first interest will be the security of his investment and then a return on the form of dividend or interest. Long term solvency ratios will help him in assessing financial position of the concern. Profitability ratios, on the other hand will be useful to determine profitability position. Ratio analysis will be useful to the investor in making up his mind whether present financial position of the concern warrants further investment or not.

(C) UTILITY TO CREDITORS:

The creditors are interested to know whether financial position of the concern warrants their payments at a specified time or not. The concern pays short term creditors out of its current assets. It the current assets are quite sufficient to meet current liabilities, then the creditors will not hesitate in extending credit facilities. Current and acid test ratios will give an idea about the current financial position of the concern.

(D) UTILITY TO EMPLOYEES:

The employees make use of information available in financial statements published by industrial units are used to calculate ratios for determining short term, long term and overall financial position of the concern government may base its future policies on the basis of industrial information available from various units. The ratios may be used as indicators of overall financial strength of public as well as private sector. In the absence of the reliable economic information, government plans and policies may not prove successful.

O.EXPLAIN THE LIMITATIONS OF RATIO ANALYSIS.

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations.

1. Limitations use of a single ratio:

A single ratio, usually does not convey much of a sense. To make a better interpretation a number of ratios have to be calculated which is likely to confuse the analyst than help him in making any meaningful conclusions.

2. Lack of adequate standards:

There are no well accepted standards or rules or thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.

3. Inherent limitations of accounting:

Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indications of the future.

4. Change of accounting procedure:

Change in accounting procedure by a firm often makes ratio analysis misleading, e.g., a change in the valuation of methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative and an unfavourable gross profit ratio.

5. Window dressing:

Financial statements can easily be window dressed to present a better picture of its financial and profitability position to outsiders. Hence one has to be very careful in making a decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by a firm.

6. Personal bias:

Ratios are only means of financial analysis and not an end in itself. Ratios have to be interpreted and different people may interpret the same ratio in different ways.

7. Uncomparable:

Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures etc. It makes comparison of ratios difficult and misleading. Moreover,

comparisons are made difficult due to differences in definitions of various financial terms used in the ratio analysis.

8. Absolute figure distortive:

Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis.

9. Price level changes:

While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.

10. Ratios no substitute:

Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statement from which they are computed.

11. Background is overlooked:

When inter firm comparison is made, they differ substantially in age, size, nature of product etc. When an inter firm comparison is made, these factors are not considered. Therefore, ratio analyst cannot give satisfactory results.

12. Qualitative factors are ignored:

Ratios are tools of quantitative analysis only and normally qualitative factors which may generally influence the conclusions derived, are ignored while computing ratios. For instance, a high current ratio may not necessarily mean sound liquid position when current assets include a large inventory consisting of mostly obsolete items. Therefore, it is very difficult to generalize whether a particular ratio is good or bad.

13. Limited use:

Ratio analysis is only a beginning and gives just a fraction of information needed for decision making. Ratio analysis is not a substitute for sound judgment. Conclusions drawn from the ratio analysts are not sure indications of bad or good management. They merely convey certain observations which need further investigations, otherwise wrong conclusions may be drawn. Computation of ratios is not useful unless they are interpreted.

Q.DISCUSS THE DIFFERENT WAYS OF CLASSIFYING RATIOS.

a) Classification by statements:

The traditional classification is based on those statements from which information is obtained for calculating the ratios. The statements which provide information are balance sheet and P&L account.

b) Classification by user:

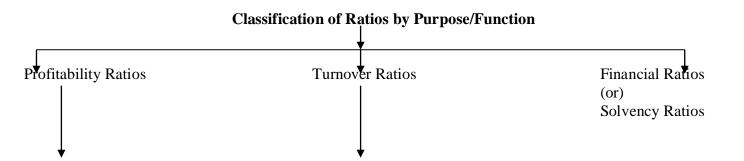
This classification is based on the parties who are interested in making the use of ratios.

c) Classification according to importance:

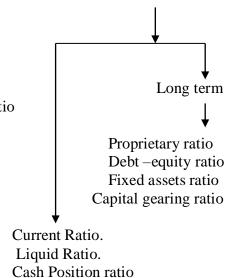
This basis of classification of ratios has been recommended by the British institute of management. Based on the importance, there are two types of ratios, viz., primary ratios & secondary ratios.

d) Classification of ratios by purpose/functions-

The basis for classification under this head is the purpose for which the ratios are calculated. Generally ratios are used for the purpose of assessing profitability, activity or operating efficiency & financial position of a concern. Based on the purpose the ratios are classified as profitability ratios, turnover ratios & financial ratios or solvency ratios.



Return on investment Net profit ratios Gross profit ratios Expenses ratios Operating profit ratios Stock turnover ratio
Debtors turnover ratio
Creditors turnover ratio
Working capital turnover ratio
Fixed assets turnover ratio



PROFITABILITY RATIOS

Profitability ratios measure the profitability of a firm' business operations. There rations may be related to sales or investment.

Return on capital employed

Return on capital employed establishes the relationship between profits and the capital employed. It is most widely used to measure the overall profitability and efficiency of the business.

Return on capital employed $= \frac{\text{Net profit} + \text{Interest} + \text{Taxes } \times 100}{\text{Average capital employed}}$

 $Capital\ employed = fixed\ assets + Current\ assets - current\ liabilities$

(or)

Capital employed = Shareholders fund + long term Liabilities.

To determine the profitability from the shareholder's point of view

Return on shareholders funds = Net profit after interest and tax x100 Shareholders funds

To determine return on equity shareholders fund

Return on equity = Net profit after interest and tax and preference dividend x100 Equity Shareholders funds

To measure the productivity of total assets

Return on total assets = Net profit after tax x 100

Total assets

GROSS PROFIT RATIO

Gross Profit ratio explains the relationship between GP x net sales.

Gross Profit ratio = Gross profit x 100
Net sales

A higher ratio is preferable indicating higher profitability. The GP ratio is expected to be adequate to cover operating expenses, fixed interest charges, dividends x transfer to reserve.

NET PROFIT RATIO

This ratio measures the relationship between net profit and net sales.

Higher the ratio better is the operational efficiency of the business concern. Net profit includes non-operating incomes and profits. Similarly net profit is the profit after reducing non-operating expenses.

OPERATING RATIO

Operating ratio matches cost of goods sold and other operating expenses with sales.

Operating ratio =
$$\frac{\text{Cost of goods sold} + \text{Operating expenses}}{\text{Sales}} \times 100$$

This ratio indicates the percentage of sales absorbed by the cost of goods sold and operating expenses. A lower ratio is more favorable as it would leave a higher may in for operating profit.

Operating expenses includes selling and distribution expenses and administration expenses.

EXPENSES RATIO

This ratio explains the efficiency with which business works/ functions. Each aspect of cost of sales and / or operating expenses should be analyzed in detail just to find out or low far the concern is able to save or is making over expenditure in respected different items of expenses. Thus three ratios reveal the relation of diff expenses to net sale.

Administrative exp ratio $= \frac{\text{Administrative expenses}}{\text{Net sales}} \times 100$ Selling and distribution expenses ratio $= \frac{\text{Selling and distribution expense}}{\text{Net Sales}} \times 100$ Financial expenses ratio $= \frac{\text{Financial expenses}}{\text{Net sales}} \times 100$ Net sales

OPERATING PROFIT RATIO

This ratio explains relationship of profit made firm operating sources to the sales, usually expressed as a percentage. It indicates the operational efficiency of the firm & it is a sign of the management's efficiency in running the routine operations of the firm.

Operating Profit ratio = Operating profit x 100
Sales

Operating Profit = Net Profit +Non-operating expenses - Non-operating incomes
(or)

Operating Profit = Gross Profit - Operating expenses.

Operating exp includes administration, Selling & Distribution expenses. Finance expenses are generally excluded.

EARNINGS PER SHARE (EPS)

This helps in determing the market price of equity share of the co., & in estimating the company's capacity to pay dividend to its equity shareholders.

Earnings Per Share = Net Profit after tax & preference dividend No. of equity shares This ratio indicates the market value of every rupee earning in the firm & is compared with industry average. High ratio indicates the share is overvalued & low ratio shows that share is under valued.

Price earning ratio = Market price per equity share
Earnings Per Share

INTEREST COVER OR FIXED CHANGES COVER

This ratio measures the ability of the concern to service the debt. This ratio is very important from lender's point of view & indicates whether the business would earn sufficient Profit to pay periodically the interest charges.

Fixed interest cover = Net Profit before interest & tax
Interest charges

PAY OUT RATIO

This ratio also indicating that light on the financial policy of the management in plugging back.

Pay out ratio = Equity dividend x 100

Net Profit after tax & preference dividend

(or)

Pay out ratio = $\underline{\text{Dividend per equity shares}}$ x 100

Earnings per equity share

RETAINED EARNINGS RATIO

This ratio shows the proportion of profits retained in the business out of Current year profits. The total of the pay out ratio & retained earnings should be equal to 100.

Retained Earnings ratio=

Retained Earnings x 100

Net Profit after Tax & Preference

(or)

Retained Earnings ratio= Retained Earnings Per Equity Share x 100 Earnings per Share

DIVIDEND YIELD RATIO

In this ratio the dividend is related to the market value of shares. The result is known or dividend yield.

Dividend yield = Dividend Per share x 100
Market price per share

This ratio is important for those invertors who are interested in the dividend income.

TURNOVER RATIOS / ACTIVITY RATIOS

Turnover ratio explains the relationship between sales & various assets of the firm. Activity sales highlight the operational efficiency of the business concern. The efficiency in the use of assets would be reflected by the speed with which they are converted into sales.

Stock or (inventory) Turnover Ratio-

This ratio establishes relationship between cost of goods sold during a given period & the average amount of inventory held during that period. This ratio reveals the No.of times finished stock is turned over during a given accounting period.

Stock turnover ratio = Cost of goods sold .

Average stock held during the period / Average inventory

Cost of good sold = (Opening stock + Purchases + Direct expenses)-closing Stock

A high inventory ratio indicated efficient inventory management & efficiency of business operator.

STOCK TURNOVER PERIOD-INVENTORY TURNOVER PERIOD/STOCK VELOCITY.

Inventory turnover ratio/stock turnover ratio can be related to 'time'. The ratio can be expressed in terms of days / months.

Inventory turnover period = <u>Day/Month in a year</u> Inventory turnover ratio

DEBTORS TURNOVER RATIO OR RECEIVABLES TURNOVER OR DEBTORS VELOCITY.

This ratio shows on an average number of times debtors are turned over during a year. A high ratio indicates efficiency in asset management & vice versa.

Debtors turnover ratio = Net credit sales
Average receivables

Average receivables = Opening receivable + Closing Receivable
2

AVERAGE COLLECTION PERIOD

This ratio indicates the speed with which debtors/accounts receivable are collected. It shows the number of days taken to collect money from debtors.

Average collection period = Debtors + Bills receivables x No. of Working days in a year

Credit sales

(or)

Average collection period = Days/Months in the year

Debtors turnover ratio

A lower ratio implies quick recovery of money from debtors. When information regarding credit sales is not available total sales are taken for calculation of the ratio.

CREDITORS TURNOVER RATIO

The ratio shows, on an average the number of times creditors are turned over during a year. A higher ratio indicates quick settlement of dues & a lower ratios reflects liberal credit terms granted by supplies.

Creditors turnover ratio = Net credit purchases

Average accounts payables

Average accounts payables = Opening payables + Closing payables

2

Net credit purchases = Credit purchases - Purchase returns

Average payment period

It refers to the No. of days taken by the firm to pay its creditors

Average payment period

Creditors + Bills Payable x No. of working days in a year

Credit Purchases

(or)

Average payment period

Days/Months in the year

Creditors turnover ratio

WORKING CAPITAL TURNOVER RATIO

This ratio shows the relationship between cost of sales & Working Capital. Working Capital ratio measures the effective utilization of Working Capital.

```
Working Capital turnover ratio = Sales / Cost of Sales
Net Working Capital.
Net Working Capital. = Current assets – Current liabilities
```

A higher ratio is the indication of lower investment of working capital& more profit.

Fixed Assets Turnover Ratio

Fixed assets turnover ratio explains the relationship between sale & fixed assets.

Fixed assets turnover ratio
$$=$$
 Sales . Net fixed assets

Their ratio indicates the sales generated by every rupee invested in fixed assets. A higher ratio is an indicator of greater efficiency in the utilization of f fixed assets .

SHORT TERM SOLVENCY OR LIQUIDITY RATIOS-

Liquidity is the ability of the firm to meet its current liabilities as they fall due. The short term obligations are met by realizing amount from current assets. Since liquidity is the basis for continuous operations of the firm it is necessary to determine the degree of liquidity of the firm. The financial manager analyzes the following important ratios for this purpose.

CURRENT RATIO-(WORKING CAPITAL RATIOS)

Current ratio may be defined as the relationship between current assets & current liabilities.it is the most common ratio for measuring liquidity.it is calculated by dividing current assets by current liabilities.current assets are those, the amount of which can be realized within a period of one year.current liabilities are those amounts which are payable within a period of one year.

Significance-

In a sound business a current ratio of 2:1 is considered as ideal one.it provides a margin of safety to the creditors. A high ratio indicates sound solvency position & low ratio indicates inadequate working capital.

LIQUID RATIO-

The term 'liquidity'refers to the ability of a firm to pay its short term obligations as and when they become due the term quick assets or liquid assets refers current assets, which can be converted into cash immediately it comprises all current assets except stock & prepaid expenses it is determined by dividing quick assets bu quick liabilites.

Liquid Ratio = <u>Liquid / Quick assets</u> Liquid/ Quick liabilities

Liquid assets = Current assets - Stock & Prepaid expenses

Liquid liabilities = Current liabilities - Bank overdraft

CASH POSITION RATIO-

This ratio is also called 'Absolute liquidity ratio' or 'super quick ratio. This is a variation of quick ratio. This ratio measures liquidity in terms of cash and near cash items and short-term current liabilities.

An ideal cash position ratio is 0.75:1. This ratio is a major rigorous measure of a firm's liquidity position. It is not a widely used ratio.

LONG-TERM SOLVENCY RATIOS:

FIXED ASSETS RATIO

This ratio establishes the relationship between fixed assets & long-term funds. This ratio helps in ascertaining the proportion of long-term funds invested in fixed assets.

An ideal fixed assets ratio is 0.67 fixed assets ratio of more than '1' implies that fixed assets are purchased with SG-term funds, which is not a prudent policy. Fixed assets Ratio if less than one it indicates that a portion of working capital has been financed by long-term funds.

DEBT EQUITY RATIO

Debt equity ratio is also called 'external-internal equity ratio' It established relationship between share holders fund and outsiders fund. It indicates the proportion of shareholders fund and long term debt in the capital structure. The standard debt-equity ratio is 2:1

Debt-equity Ratio	= Outsides fund	or	Long-term debt
	Shareholders fund		Shareholders fund

CAPITAL GEARING RATIO

Capital gearing Ratio is also known as capitalization Ratio or leverage Ratio which is mainly used to analyze the capital structure of a company.

The term capital gearing or leverage normally refers to the proportion between the fixed interest or dividend bearing funds and non-fixed interest on dividend bearing funds.

The Capital gearing ratio shows the mix of finance employed in the business. It indicates the proportion between owners fund and non-owners fund. This proportion is by definition known as leverage.

If the ratio is high the capital gearing is said to be high and if the ratio is low, the gearing is said to be low. High gearing means more speed or low gearing means less speed with which the enterprise is accelerating towards the corporate goal further high gearing means trading on this equity x low gearing is known as trading on thick equity.

PROPRIETARY RATIO

Proprietary ratio is the relationship between proprietor's fund and total tangible assets.

Proprietary ratio	=	Shareholders fund
		Total tangible assets

Proprietary ratio indicates the proportion of shareholders funds in the total assets. A high proprietary ratio indicates less danger and risk to creditors in the event of winding up.

Q.WRITE SHORT NOTES ON

- a) Working Capital
- b) Current Assets
- c) Current Liabilities
- d) Non- Current Assets
- e) Non -Current Liabilities.

a) Working Capital

Funds flow statement is based on the working capital concept of funds. 'Gross working capital' is the total of current assets. However working capital is also a controversial term. 'Circulating capital' is the amount revolving in the cycle of 'Cash-Inventories - Receivable and Cash'.

WORKING CAPITAL = CURRENT ASSETS-CURRENT LIABILITIES

Example: Current assets-Rs.300,000; Current liabilities-Rs.100,000

Working Capital = Current Assets - Current Liabilities = Rs.300,000 - Rs.100,000 = Rs.2.00,000.

GROSS WORKING CAPITAL = TOTAL OF CURRENT ASSETS

NET WORKING CAPITAL = CURRENT ASSETS -CURRENT LIABILITIES / EXCESS OF CURRENT ASSETS OVER CURRENT LIABILITIES

b) Current Assets

The term 'Current Assets' includes assets which are acquired with the intention of converting them into cash during the normal business operation of the company. Example- Cash and near cash items, accounts receivable, inventories, advances recoverable prepaid expenses.

c) Current Liabilities

All these liabilities which are payable in cash in the normal course of business within a period of one year or within the operating cycle are called 'Current Liabilities'.

Ex-Account Payable, Borrowings on short term basis, Outstanding Expenses, Income Received in Advance, Tax Payable and Dividend Payable.

Provisions against current assets

Provisions against current assets such as Provision for doubtful debts. Provision for loss of stock, Provision for discount on debtors etc., are treated as Current Liabilities. Since they reduce the amount of Current Assets.

d) Non-current Assets

All assets other than the current assets can be termed as Non-Current assets. They include the following:

- a. Fixed Assets like land, building, machinery, furniture, loose tools etc.,
- b. Intangible Assets like goodwill, patents copyrights etc.,
- c. Long-term investments in shares of other companies, Govt. Bonds etc.,

e) Non-current Liabilities

All liabilities other than current liabilities come within the category of non-current liabilities. They includes share capital, long-term loans, debentures, share premium, credit balance in the profit and loss account, revenue and capital reserves (e.g., general reserve, dividend equalization funds, debentures, sinking funds, capital redemption reserve) etc.,