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The Impact of Capital Expenditure on the Financial Performance of a Telecommunications Company Case Study: Ooredoo Algeria

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ABSTRACT

This study investigates the impact of capital expenditure (CAPEX) on the financial performance of Ooredoo Algeria. The research focuses on the short-term effects of CAPEX, using net profit margin (NPM) as the key financial performance indicator. Adopting a quantitative method, the research relies on secondary data drawn from quarterly financial statements between 2017 and 2023. Two econometric models were estimated using the Ordinary Least Squares (OLS) regression method. The empirical findings reveal that CAPEX had a significant positive effect on financial performance, confirming the study's main hypothesis and its subsidiary hypotheses. These results provide valuable insights for financial managers and strategic decision-makers in the telecommunications sector, underscoring the critical role of efficient CAPEX allocation in achieving short-term profitability.

Keywords: Capital expenditure, financial performance, telecommunications, Ooredoo Algeria.

RÉSUMÉ

Cette étude examine l'impact des dépenses d'investissement (CAPEX) sur la performance financière d'Ooredoo Algérie. Elle se concentre sur les effets à court terme du CAPEX, en utilisant la marge nette (NPM) comme principal indicateur de performance financière. En adoptant une méthode quantitative, la recherche repose sur des données secondaires issues des états financiers trimestriels couvrant la période entre 2017 et 2023. Deux modèles économétriques ont été estimés à l'aide de la méthode de régression des moindres carrés ordinaires (OLS). Les résultats empiriques révèlent que le CAPEX a eu un effet positif significatif sur la performance financière, confirmant l'hypothèse principale de l'étude ainsi que ses hypothèses secondaires. Ces résultats offrent des perspectives précieuses aux responsables financiers et aux décideurs stratégiques du secteur des télécommunications, en soulignant le rôle crucial d'une allocation efficace du CAPEX pour atteindre la rentabilité à court terme.

Mots-clés: Dépenses d'investissement, performance financière, télécommunications, Ooredoo Algérie.

ملخص

تهدف هذه الدراسة إلى تحليل أثر نفقات الاستثمار على الأداء المالي لشركة أوريدو الجزائر. تركز الدراسة على التأثيرات قصيرة الأجل لنفقات الاستثمار، مع اعتماد هامش الربح الصافي كمؤشر رئيسي للأداء المالي. بالاعتماد على منهج كمي، استندت الدراسة على بيانات ثانوية مأخوذة من القوائم المالية الفصلية خلال الفترة من 2017 إلى 2023. تم تقدير نموذجين اقتصاديين قياسين باستخدام طريقة الانحدار العادي للمربعات الصغرى. أظهرت النتائج التجريبية أن نفقات الاستثمار لها تأثير إيجابي ذو دلالة إحصائية على الأداء المالي، مما يؤكد صحة الفرضية الرئيسية للدراسة وفرضياتها الفرعية. تقدم هذه النتائج رؤى قيّمة للمديرين الماليين وصنّاع القرار الاستراتيجيين في قطاع الاتصالات، وتبرز الدور الحاسم للتخصيص الفعال لنفقات الاستثمار في تحقيق الربحية على المدى القصير.

الكلمات المفتاحية: نفقات الاستثمار، الأداء المالي، الاتصالات، أوريدو الجزائر.

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LIST OF ABBREVIATIONS AND ACRONYMS

CAPEX: Capital expenditure

EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization

EPS: Earnings Per Share

FCFE: Free Cash Flow to Equity

IFRS: International Financial Reporting Standards

KPIs: Key Performance Indicators

MENA: Middle East and North Africa

NPM: Net Profit Margin

OLS: Ordinary Least Squares

OPEX: Operating Expenditure

REVEX: Revenue Expenditure

ROA: Return on Assets

ROE: Return on Equity

ROI: Return on Investment

INTRODUCTION

1. Research context

In an increasingly competitive and capital-intensive global environment, companies operating in the telecommunications sector must make strategic decisions that balance innovation, infrastructure expansion, and profitability. Among the most critical of these decisions are capital investments, particularly those related to capital expenditure (CAPEX). CAPEX refers to funds spent by a company to acquire, upgrade, or maintain fixed assets such as buildings, technology infrastructure, or equipment. These investments are essential for long-term growth, but their effects on short-term financial performance remain a topic of ongoing debate, especially in dynamic sectors like telecommunications.

The Algerian telecommunications market has undergone significant transformation over the last two decades. Ooredoo Algeria, as a key player in this sector, has continuously invested in digital infrastructure, particularly in its transition from 3G to 4G. These strategic investments aim to maintain competitiveness, enhance customer experience, and ensure long-term profitability. However, these fixed assets investments must also be evaluated in terms of their effectiveness in generating immediate financial returns. It is in this context that our research was developed.

This study investigates the effect of CAPEX on the financial performance of Ooredoo Algeria, a key player in the telecommunications sector. More specifically, we focus on the immediate effects of CAPEX on financial performance, measured by net profit margin (NPM). This question is especially relevant given the recurring debate in the literature over whether CAPEX contributes more significantly to long-term rather than short-term financial outcomes. The lack of empirical consensus on this issue underscores the need for company-specific, data-driven studies that take into account sector context, investment type, and operational dynamics.

2. Research problem

In order to achieve the research objectives, the research question is formulated as follows:

“Does capital expenditure have a positive impact on the financial performance of Ooredoo Algeria?”

To address this main research problem, we formulated two subsidiary questions:

Q1: Does capital expenditure have a significant positive impact on the financial performance of Ooredoo Algeria?

Q2: Does capital expenditure have a significant immediate impact on the financial performance of Ooredoo Algeria?

3. Research hypotheses

In order to provide answers to the research questions and support the development of the research, the following hypotheses are formulated:

Main hypothesis (H_1)**:** Capital expenditure has a positive impact on the financial performance of Ooredoo Algeria.

To support this main hypothesis, two subsidiary hypotheses are stated:

H_1a: Capital expenditure has a significant positive impact on the financial performance of Ooredoo Algeria.

H_1b: Capital expenditure has a significant immediate impact on the financial performance of Ooredoo Algeria.

4. Research objectives

The objectives of this research are to empirically evaluate the effect of CAPEX on the financial performance of Ooredoo Algeria, with particular attention to both the strength and timing of its impact. These objectives are both theoretical and practical.

On a theoretical level, the research aims to contribute to the academic literature on CAPEX and corporate financial performance in emerging markets, particularly in the telecommunications sector. It also seeks to highlight how CAPEX efficiency can serve as a key driver of financial success in infrastructure-intensive sectors.

On a practical level, the study provides managers and decision-makers at Ooredoo Algeria with empirical insights that can support more effective investment decisions. More specifically, the study aims to:

- Evaluate the efficiency of CAPEX using relevant financial ratios.
- Analyze the short-term relationship between CAPEX and financial performance.
- Provide practical recommendations for improving capital allocation decisions related to fixed assets investments within the Algerian telecommunications context.

5. Research methodology

This research is conducted within a post-positivist epistemological paradigm, which supports an objective, structured, and data-driven approach while recognizing the limitations of empirical findings. To answer the research questions and test the hypotheses, we adopted a quantitative method based on the hypothetico-deductive approach. The study relies entirely on secondary data collected from Ooredoo Algeria's internal financial statements, with the analyses carried out using econometric modeling.

6. Structure of the thesis

The structure of this thesis is organized as follows:

The introduction presents the context the research topic. It defines the research problem, states the main and subsidiary questions, formulates the hypotheses, outlines the research objectives, and describes the methodology adopted in the study.

The first chapter presents the theoretical framework of the research. It includes a comprehensive literature review of prior studies on CAPEX and financial performance, particularly in the telecommunications sector. This is followed by a conceptual framework that defines key concepts used in the research.

The second chapter describes the host organization, Ooredoo Algeria, and outlines the methodological framework. It discusses the research methodological approach, data sources and collection method, variables, model design, and statistical methods used to analyze the impact of CAPEX on financial performance.

The third chapter presents the empirical findings. It discusses the findings of the econometric analyses, tests the hypotheses of the study, and compares the findings with those from the existing literature.

Finally, the study concludes with a general conclusion that includes a recapitulation of the key findings, discusses their practical implications, formulates a set of recommendations, identifies the limitations of the study, and proposes perspectives for future studies.

CHAPTER 1: THEORETICAL FRAMEWORK

In this chapter, we begin by reviewing previous studies related to our research topic, then define the key concepts that support the development of our study.

Section 1: Literature Review

To situate our research within a scientific framework, it is crucial to review the existing literature on capital expenditure and its effect on financial performance. Numerous researchers have explored this topic from diverse perspectives, providing valuable studies that support our research.

1.1. Capital expenditure and its impact on financial performance in other sectors

Taipi & Ballkoci (2017) examined the relationship between CAPEX and firm performance in the Albanian construction sector. The primary objective of their study was to determine whether investments in fixed assets affect financial performance (as measured by return on assets (ROA)), while also assessing the impact of additional variables such as leverage and firm size. Using a linear regression model, they analyzed secondary financial data drawn from 30 construction firms over the period 2008 to 2015.

Their analysis revealed that CAPEX and the leverage ratio are statistically significant and positively correlated with firm performance, with their model explaining 63% of the variation in ROA. In contrast, firm size (as proxied by the logarithm of total assets) was found to be negatively correlated with performance and statistically insignificant. The authors concluded that, within the Albanian construction sector, effective CAPEX and optimal leverage are key drivers of improved financial performance, while the impact of firm size appears to be negligible. This study contributes to the empirical evidence on investment decisions and firm performance in emerging markets.

Ani (2021) studied the effect of CAPEX on the earnings capacity of firms in Nigeria's production sector. The study's primary objective was to determine whether CAPEX significantly influences key profitability measures, namely, return on investment (ROI), return on equity (ROE), and earnings per share (EPS) in production companies. Employing an ex post facto, descriptive research design, the study used secondary data extracted from audited annual reports of five randomly selected production companies listed on the Nigeria Stock Exchange, covering the period from 2011 to 2020. Data were analyzed using descriptive statistics, correlation, and linear regression techniques with SPSS.

The findings indicate that CAPEX has a statistically significant effect on ROI (p-value = 0,028) and EPS (p-value = 0,000), while its effect on ROE was positive but not significant

(p-value = 0,104). Based on these results, the study concludes that CAPEX is a key determinant of earnings capacity in Nigerian production companies, underscoring the need for managers to monitor and strategically manage their fixed assets investments for optimal performance.

Satt et al. (2023) analyzed the relationship between CAPEX and firm value in the MENA region, focusing on how market competition and information asymmetry moderate this relationship. The study's objective is to determine whether increased CAPEX enhances firm value, and if so, under which market conditions this relationship varies. To achieve this, the authors applied a panel data analysis using the Generalized Method of Moments (GMM) on a non-balanced sample of 3,930 observations covering the period from 2010 to 2019, drawn from publicly listed companies across several industries (excluding financial and energy sectors).

Their empirical results indicate that, overall, CAPEX positively influences firm value (as measured by Tobin's Q); however, in markets with high product competition, the effect turns negative, while in environments characterized by high information asymmetry, the positive effect is strengthened. Additionally, these moderating effects are found to be more pronounced among small-sized and Shariah-non-compliant firms. The study concludes that the impact of CAPEX on firm value is contingent on both external market conditions and firm-specific characteristics, suggesting that managers should carefully consider these boundary conditions when making investment decisions.

1.2. Capital expenditure and its impact on financial performance in the telecommunications sector

In their 2021 study, Faisel et al. (2021) examined the impact of CAPEX efficiency, operating expense efficiency, and exchange rate differences on the financial performance of PT. Telkomsel, using net profit margin (NPM) as the key indicator of profitability. The research aimed to determine whether these factors significantly influence the company's financial outcomes. Employing a quantitative research design, the authors conducted a time series analysis of secondary data extracted from quarterly financial statements spanning from 2012 to 2018.

Their findings indicated that CAPEX efficiency has a significant positive effect on profitability, while OPEX efficiency, despite showing a positive relationship, does not significantly impact profitability. Additionally, the study revealed that differences in exchange rates exert a significant negative influence on financial performance. These results

highlight the importance of managing fixed assets investments effectively and suggest that external financial risks, such as exchange rate fluctuations, need to be addressed strategically to optimize a firm's overall financial health.

Firli et al. (2015) explored the impact of increasing capital expenditure (CAPEX) on customer numbers, profit, and return on investment (ROI) in Indonesia's telecommunications industry. The study aimed to determine whether heightened CAPEX investments influence these key performance indicators despite traditionally low ROI figures in the sector. Employing a quantitative research design, the authors analyzed secondary data from annual and quarterly financial statements of the industry's big three operators over a five-year period using regression analysis with SPSS.

Their results revealed that increased CAPEX exerts a significant and positive effect on customer numbers, profit, and ROI, with holding companies outperforming single companies in terms of profit and ROI. The study concludes that even though the ROI from CAPEX remains generally small, strategic fixed assets investments are critical for driving improvements in financial and operational performance. They further suggest that future research should explore the comparative impacts of CAPEX and OPEX between large and small operators.

Haryanto & Retnaningrum (2020) investigated the effect of CAPEX on profitability, examining how the size of a company moderates this relationship. The study's objective was to analyze whether CAPEX influences a firm's profitability (as measured by NPM) and to determine if this impact is reinforced by firm size, which is proxied by the natural logarithm of total assets (Ln Total Assets). Employing a quantitative research design, the authors utilized multiple regression analysis (MRA) on secondary financial data retrieved from telecommunications service companies listed on the Indonesia Stock Exchange (IDX) over the period 2009-2016.

The results indicate that CAPEX alone explains 59,70% of the variation in profitability, and when the moderating effect of firm size is included, the explanatory power increases to 74,80%. In addition, individual parameter tests (t-tests) confirmed that both CAPEX and firm size exert a significant, positive influence on profitability. The study concludes that increased CAPEX not only positively affects profitability, but its effect is even more pronounced in larger firms; however, the authors note that other factors may also play a role and recommend further research to explore additional moderating variables.

Rosandy & Mita (2018) examined how CAPEX and market share influence profits at the regional level in an Indonesian mobile telecommunications company. The study's objective was to examine whether investments measured as CAPEX and the company's market share have a significant effect on profitability, while also considering asset size as a control variable. To achieve this, the authors employed a panel data regression analysis using a fixed effects model, drawing on secondary data from 10 regions over an eight-year period (2009-2016), which resulted in 80 observations.

Their results revealed that while CAPEX in the short-term period (t-1) did not significantly affect profit levels, CAPEX measured three years' prior (t-3) exhibited a positive and significant effect on profitability. In addition, market share consistently demonstrated a positive influence on profit, underscoring its importance for economies of scale, market power, and quality management. The study concludes that fixed assets investments and a robust market share are critical drivers of regional profitability in the telecommunications industry, suggesting that investment decisions should take into account longer-term performance horizons.

1.3. Literature review synthesis

The literature consistently emphasizes that CAPEX decisions play a crucial role in determining long-term firm value and financial performance. In other sectors, such as construction and manufacturing, similar patterns emerge. Taipi & Ballkoci (2017) reported that both CAPEX and optimal leverage are significant drivers of ROA in the Albanian construction sector, though firm size appears less influential. Ani (2021) showed that in Nigeria's production companies, CAPEX decisions significantly enhance earnings capacity by positively affecting ROI and EPS.

Further evidence from the MENA region Satt et al. (2023) indicated that while CAPEX generally increases firm value, its effectiveness is moderated by market factors; high product competition can reduce CAPEX's positive impact, whereas high information asymmetry strengthens it, particularly for smaller and non-Shariah-compliant firms.

In the telecommunications sector, studies by Faisel et al. (2021) and Firli et al. (2015) revealed that efficient CAPEX significantly improves profitability and customer growth, even though external factors like exchange rate fluctuations may dampen financial outcomes. Haryanto & Retnaningrum (2020) further demonstrated that CAPEX's positive effects on profitability are amplified by firm size, while Rosandy & Mita (2018) find that

long-term CAPEX, especially when combined with strong market share, substantially boosts regional profitability.

Overall, the literature confirms that strategic CAPEX allocation is essential for sustainable financial performance. However, its impact varies based on sector-specific dynamics, firm size, market competition, and external economic conditions. Firms must carefully asses these moderating factors to optimize their investment strategies and ensure financial stability.

Section 2: Conceptual Framework

This section presents the key concepts that support the structure of our study. It defines CAPEX and financial performance, outlines their characteristics, and highlights how they are reflected in financial statements.

2.1. Capital expenditure

Capital expenditure refers to investments made by organizations to acquire or upgrade fixed assets, such as property, equipment, or infrastructure, aimed at supporting sustainable growth and operational efficiency.

2.1.1. Capital expenditure definition

Expenditure refers to the allocation of funds by a business enterprise for acquiring assets, availing services, or covering day-to-day operational costs. An expenditure is classified as CAPEX when it fulfils certain criteria, such as the purchase of permanent or fixed assets intended for use within the business rather than immediate resale. Additionally, CAPEX is characterized by its enduring benefits, often involving improvements to existing assets or extensions aimed at enhancing the earning capacity of the business (Rajasekaran & Lalitha, 2011).

CAPEX refers to an expense incurred by a company that delivers benefits over an extended period, spanning multiple accounting cycles, rather than being consumed within a shorter duration, such as a single accounting cycle. This type of expenditure is typically non-recurring in nature and leads to the acquisition or enhancement of durable assets, which contribute to operational efficiency and growth of the business (De Brouwer, 2021).

A capital expenditure provides benefits over an extended period or leads to the acquisition of assets with a long useful life. These expenditures are typically significant in cost and, unlike current or operating expenses, do not occur annually. Instead, capital expenditures tend to recur irregularly, with long intervals between periodic replacements (Shah, 2007).

CAPEX refers to an expense that provides benefits extending beyond one year and is typically non-recurring in nature. Such expenditures are infrequent and often involve significant investments, such as the purchase of buildings or land. CAPEX is incurred for purposes that include acquiring tangible or intangible assets, enhancing the profit-earning capacity of the business, securing long-term advantages, obtaining the rights necessary to

operate the business, and initiating the operations of profit-generating assets or machinery (S. K. Singh, Agarwal, et al., 2023).

CAPEX refers to the spending of funds for acquiring, upgrading, or maintaining physical assets that are anticipated to provide benefits across multiple accounting periods. Its primary purpose is to enhance the productive capacity or operational efficiency of a business. Such expenditures typically involve substantial amounts and are recorded as assets on the balance sheet, reflecting their long-term value to the organization (Srinivasan & Vijayalakshmi, 2024).

CAPEX refers to the financial outlay incurred to acquire or create an asset, secure an enduring advantage or benefit, or enhance the productivity and earning capacity of a business. This type of expenditure is focused on fostering long-term value and sustaining operational growth (CA & Dr. P C Tulsian, 2023).

Overall, we observe that CAPEX consists of non-recurring investments in fixed assets, aiming to enhance operational efficiency and financial capacity. It is distinct from operational expenses due to its extended benefits, reinforcing its strategic role in sustaining business growth.

2.1.2. Characteristics and types of capital expenditure

CAPEX encompasses investments in fixed assets essential for business operations. Their characteristics and types provide insight into how organizations allocate resources for sustained growth and efficiency.

A. Characteristics of capital expenditure

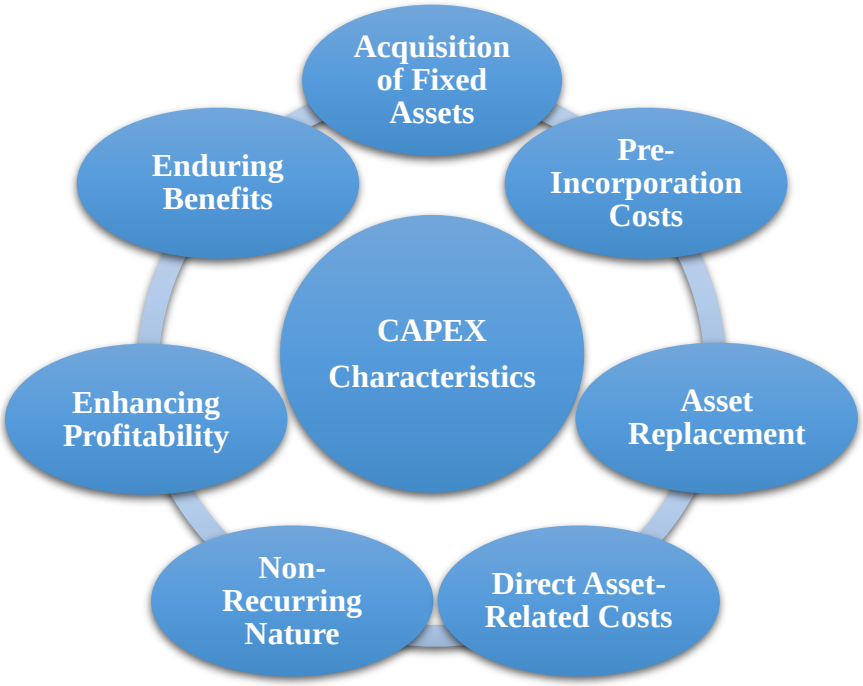
CAPEX is characterized by distinct attributes that underscore its strategic and financial significance to an enterprise. These features highlight its role in asset acquisition, enhancement, and replacement, emphasizing the importance of providing long-term benefits, optimizing operational efficiency, and fostering sustainable growth across multiple accounting periods. These are the fundamental characteristics of CAPEX (S. K. Singh, Kumar, et al., 2023):

- **Acquisition of fixed assets:** Expenditure incurred for the acquisition of fixed assets or for improving and extending existing assets.
- **Enduring benefits**: The benefits derived from such expenditure must be long-term, spread across multiple accounting years.

- **Enhancing profitability:** Expenditure aimed at increasing the earning capacity or reducing operating expenses of the business.
- **Non-recurring nature:** CAPEX is typically non-recurring and does not happen frequently.
- **Direct asset-related costs:** Includes costs directly associated with the purchase, installation, or erection of assets.
- **Asset replacement:** Expenditure incurred for substituting a new asset in place of an existing one.
- **Pre-incorporation costs:** Includes expenses incurred prior to the incorporation of a company.

The characteristics of capital expenditure can be clarified through the following figure:

Figure 1: Characteristics of capital expenditure



Source: Prepared by the student.

B. Types of capital expenditure

Within a CAPEX program, projects are classified to group similar types of investments according to spending priorities. This classification system enables companies to establish ROI objectives for each category, facilitating the efficient allocation of resources to maximize overall ROI, both within individual classifications and for the company as a whole.

At different stages of a company's economic life, emphasis on CAPEX priorities may vary. For instance, there may be periods focused on reducing costs, while at other times, the priority might shift to modernization, compliance with environmental standards, technological upgrades, capacity expansion, product development, or even contraction. Resources are allocated among these classifications to ensure alignment with the company's broader investment goals and the ultimate maximization of ROI.

The following are common classifications of CAPEX, although individual companies may tailor these categories based on their specific industry requirements (Rachlin, 1997):

- **Maintenance and replacement projects:** These projects ensure the continuity of existing machinery and equipment. They typically include repairs and general maintenance activities.
- **Profit improvement projects:** Projects in this category aim to enhance existing earnings by generating additional profits. They include clear projections of expected returns and timeframes, playing a critical role in maintaining healthy profit margins and consistent cash flows.
- **Quality improvement projects:** These focus on enhancing the quality of a company's products, ensuring alignment with established quality standards.
- **Cost savings projects:** These projects are designed to generate sufficient economic value over and above existing costs. Such savings may be achieved through improvements in labor efficiency, enhanced productivity, or reduced material costs.
- **Expansion projects:** These projects are primarily focused on increasing production capacity, boosting sales in existing markets, and capturing sales opportunities in new markets.
- **New product introduction projects:** These projects aim to establish the necessary facilities and capabilities for launching new products; specifically, products that are not currently manufactured or marketed by the company.
- **Other projects:** This category includes projects that do not fall under any of the previous classifications. Examples include contaminant control, developmental initiatives, meeting legal requirements, enhancing public image, improving employee morale, noise abatement, and upgrading cafeteria facilities.

Where projects provide multiple benefits, it is essential to determine which benefit is primary. This can be accomplished by reviewing the end results of the project and identifying the major phase responsible for generating the benefit.

Projects may also be classified as either major or minor. This classification is typically based on the dollar amount required and the strategic importance of the benefit. For instance, a project that requires a small sum to replace a part may be considered minor, whereas a project demanding substantial funds for a major expansion would be classified as major.

It is important to recognize that companies in different industries often use different classification systems. For example, the pharmaceutical industry may include categories labeled “community responsibility”; the food and beverage industry might use “risk hedging” classifications; the soap and cosmetic industry may classify projects as those required by law or for community relations; the petroleum refining industry may refer to projects as venture projects; the office machine industry often categorizes projects as strategic investments; and industries dealing with stone, concrete, clay, and glass may classify projects as defensive.

Although there is no universally standardized classification system, most companies tend to use project classifications that address profit improvement or cost savings, expansion, replacement and maintenance, new product introduction, and non-income-producing projects.

2.1.3. Formula and calculation of capital expenditure

The calculation of CAPEX and free cash flow to equity (FCFE) is essential for understanding a company’s investment activities and the cash available to equity shareholders. CAPEX represents the funds spent on acquiring or improving fixed assets, while FCFE provides insights into the cash flow remaining for equity shareholders after accounting for operational and CAPEX. These metrics play a crucial role in financial analysis, enabling businesses and investors to evaluate financial stability, operational efficiency, and investment potential. The formula for CAPEX is (Jason, 2024):

$$\textbf{CAPEX} = \Delta \text{ PP\&E} + \text{Current Depreciation}$$

where:

CAPEX = Capital expenditure.

ΔPP&E = Change in property, plant, and equipment.

CAPEX plays a crucial role in determining free cash flow to equity (FCFE), which represents the cash available to equity shareholders. The calculation of FCFE involves specific formulas that incorporate CAPEX, along with other financial metrics, to provide insights into a company's equity-related cash flow. The formula for FCFE is:

$$\mathbf{FCFE}=EP-(CE-D)\times(1-DR)-\Delta C\times(1-DR)$$

where:

FCFE = Free cash flow to equity.

EP = Earnings per share.

CE = CAPEX.

D = Depreciation.

DR = Debt ratio.

ΔC = Δ Net capital, change in net working capital.

As an alternative, it can be calculated as:

$$\mathbf{FCFE}=NI-NCE-\Delta C+ND-DR$$

where:

NI = Net income.

NCE = Net CAPEX.

ND = New debt.

DR = Debt repayment.

2.1.4. Distinction between capital and revenue expenditure

Capital expenditure (CAPEX) and revenue expenditure (REVEX) represent two distinct categories of organizational spending. While CAPEX involves fixed assets investments, REVEX focuses on day-to-day operational expenses. Understanding their definitions, characteristics, and distinctions is essential for effective financial management and reporting.

A. Revenue expenditure definition

REVEX refers to the allocation of funds towards day-to-day operating expenses essential for maintaining business operations and generating revenue within the current accounting period. Its nature is primarily recurring, as it is incurred to sustain the existing level of operations. REVEX is recorded as an expense on the income statement, reflecting its short-term impact on the financial performance of the company (Suresh et al., 2024).

B. Characteristics of revenue expenditure

REVEX is defined by distinct characteristics that reflect its role in sustaining the day-to-day operations of a business. These attributes emphasize its recurring nature and its contribution to maintaining the business's revenue-generating capabilities. The key characteristics of REVEX include the following (S. K. Singh, Agarwal, et al., 2023):

- **Recurring nature:** REVEX typically involves ongoing costs incurred regularly as part of maintaining business operations.
- **Maintenance activity:** Expenditures aimed at supporting revenue-maintaining activities are generally classified as revenue expenditure.
- **Short-term benefit:** REVEX is associated with costs whose benefits are confined to a single accounting period.
- **Nature of business:** The classification of REVEX depends on the industry context; for instance, the acquisition of a car by a car dealer or machinery by a machinery dealer is considered REVEX.

C. Revenue expenditure: To be treated as capital expenditure

Certain REVEX may be reclassified as CAPEX based on the nature of the transactions involved. The following are examples (Rajasekaran & Lalitha, 2011):

- **Wages:** While wages are generally considered REVEX, exceptions arise in specific scenarios. For instance, wages paid for the erection of a new machine are added to the machine's cost and treated as CAPEX. Similarly, wages paid to workers engaged in construction activities, such as building factories or bridges, are also capitalized as part of the respective asset's value.
- **Transport**: Transportation costs associated with delivering machinery (whether new or second-hand) to the business premises are regarded as CAPEX.

- **Raw materials and stores:** Raw materials and stores consumed in the manufacturing of fixed assets in construction-related businesses are classified as CAPEX.
- **Legal expenses:** Legal costs incurred in connection with capital transactions are considered CAPEX.
- **Repairs:** While repairs are typically treated as REVEX, there are exceptions. For example, repairs undertaken to render second-hand machinery operational for the first time are classified as CAPEX.
- **Development expenses:** Significant initial expenditures in certain operations, such as the preparation of plantation units (coffee, tea, rubber) or mining sites for productivity, are treated as CAPEX.
- **Interest on capital:** Interest on capital invested in the acquisition or creation of long-term assets is categorized as CAPEX.

D. Difference between capital expenditure and revenue expenditure

CAPEX differs from REVEX in the following aspects (S. K. Singh, Kumar, et al., 2023):

Table 1: The difference between capital expenditure and revenue expenditure

Basis of Distinction	Capital Expenditure	Revenue Expenditure
(1) Benefit	Its benefit extends to more than one year.	Its benefit extends to only one year.
(2) Purpose	It is incurred for acquisition of fixed assets or improving the fixed assets.	It is incurred for the normal conduct of the business.
(3) Recurrence	It is normally non-recurring outlay.	It is usually a recurring item.
(4) Impact	It increases earning capacity of business concern.	It maintains earning capacity of a business concern.
(5) Accounting Treatment	It is shown in the asset side of the Balance Sheet.	It is shown in the debit side of Trading and Profit and Loss Account.

Source: (S. K. Singh, Kumar, et al., 2023)

2.1.5. Planning, control and decision for capital expenditure

CAPEX planning ensures strategic resource allocation and supports long-term growth by evaluating investments, minimizing risks, and optimizing decision-making processes.

A. Concept of capital budgeting

Capital budgeting refers to the process of long-term planning for proposed CAPEX and their financing. It serves as a critical decision-making tool for evaluating the acquisition of major fixed assets whose benefits extend across multiple time periods. In essence, capital budgeting involves current investments with anticipated benefits that typically surpass one year; however, the one-year benchmark is largely arbitrary. The primary objective of capital budgeting is to assess whether an investment proposal offers a reasonable return for the business. The process encompasses the generation of investment proposals, the estimation of associated costs and benefits (cash flows), the evaluation of net benefits, and the selection of projects based on established acceptance criteria (Murugan, 2006).

B. Importance of capital budgeting

The importance of capital budgeting lies in its ability to guide organizations in making informed and strategic financial decisions regarding fixed assets investments. By ensuring the effective allocation of significant financial resources, capital budgeting minimizes risks, enhances operational efficiency, and supports sustainable growth. It addresses critical aspects such as optimal asset timing, quality improvement, accurate cash flow forecasting, and the selection of appropriate financing sources. Through these measures, capital budgeting plays a pivotal role in shaping the financial stability and flexibility of an organization. These four key aspects define its significance (Murugan, 2006):

- **Commitment of significant financial resources:** Capital investments typically involve substantial financial commitments, which have far-reaching implications for business activities. These investments can significantly impact the financial stability and flexibility of the organization, underscoring the importance of effective capital budgeting.
- **Risk of incorrect decision-making:** Poor decisions can lead to over-investment or under-investment in financial resources. For instance, inaccurate sales forecasts may result in excess production capacity or insufficient capacity, adversely affecting operational efficiency. Capital budgeting also aids in completing accurate cash flow forecasts.

- **Optimal asset timing and quality improvement:** Capital budgeting enables the consideration of alternative assets as replacements for those that are aging or at risk of obsolescence. This process facilitates better timing in asset purchases, enhances the quality of acquired assets, and ensures an efficient match between the need for capital goods and their availability. Additionally, it supports the development of a robust depreciation and asset replacement policy.
- **Selection of appropriate financing sources:** CAPEX decisions often require substantial funds, which may not be readily or automatically available. A well-structured capital budgeting system allows management to proactively identify and secure appropriate financing sources, ensuring their availability at the right time.

C. Capital budgeting process

The responsibilities of accounting and reporting are well-known to most controllers; however, greater involvement in the budgeting process should be encouraged. Due to the relative inflexibility that arises once capital commitments are made, it is essential for the CEO and other key executives to have a structured framework for selecting essential and economically justified projects from various proposals, even if their intuitive judgment plays a significant role. Once a project commences, expenditures must remain within authorized limits. For larger projects, management should periodically receive updates comparing the actual financial outcomes with the anticipated earnings or savings once the asset becomes operational.

A well-designed capital budgeting process follows sequential steps, which are primarily executed by line executives rather than controllers. The process includes the following (Bragg, 2004):

- **Establishing budget limits:** During the short-term planning period (typically one to two years), define permissible capital commitments for the company and its major divisions or functions to guide executives on spending limits. This iterative procedure serves as a practical starting point.
- **Encouraging proposals:** Facilitate the submission of valuable capital investment projects through organizational channels. Major projects should align with corporate objectives and expansion plans and include target rates of return and other relevant guidelines.

- **Preliminary screening:** Evaluate proposals to eliminate those misaligned with the strategic plan or lacking economic or political feasibility.
- **Classification and benefit analysis:** Post-screening, classify projects based on urgency and calculate economic benefits. Provide clear guidance on determining rates of return and data collection methods.
- **Review and validation:** Financial staff must assess submitted projects for the adequacy of non-technical data, rate-of-return accuracy, and compatibility with financial resources, budget constraints, and capital budget criteria.
- **Securing approvals:** Present analyzed and approved proposals to the board of directors for principal approval.
- **Authorization of major projects:** Prior to project initiation, review specific authorizations and confirm no fundamental changes in the underlying data.
- **Monitoring expenditures:** Utilize control mechanisms such as periodic reports to track incurred costs, estimated completion expenses, and other critical metrics once a project starts.
- **Post-audit review:** Conduct post-audit evaluations for major projects within a stipulated timeframe, comparing actual versus estimated cash flows.

The controller and financial staff's role in capital budgeting spans financial planning, procedure development and oversight, economic analysis, and reporting during and after project completion. The capital budgeting process can be clarified through the following figure:

Figure 2: Capital budgeting process

Source: Prepared by the student.

D. Concept of capital expenditure decision

The concept of CAPEX decision refers to investments made by businesses with the intention of generating benefits over future periods, typically involving fixed assets and development projects. Planning for CAPEX is an integral part of management policy-making and budgetary control, as these decisions have long-term implications on business operations, such as purchasing land, buildings, or machinery. Due to the significance and impact of these investments on business activities over an extended period, close monitoring of CAPEX is essential.

Mechanization and automation have introduced increasingly frequent and complex challenges for management in making CAPEX decisions. While various techniques have been developed to facilitate effective decision-making, the ultimate success depends on the availability of reliable information, which can be generated by a well-designed CAPEX budgeting system. Commonly, CAPEX decisions are also referred to as “Capital

Budgeting", "Capital Investment Decision", or simply "Investment Decision"(Murugan, 2006).

2.2. Financial performance

Financial performance reflects how effectively a company utilizes its resources to generate revenue and maintain financial health over a specific period. It is a key metric for assessing organizational success and comparing industry peers.

2.2.1. Financial performance definition

Financial performance refers to a firm's ability to effectively utilize its assets to generate revenues from its core business activities. It also serves as an overarching indicator of a firm's financial health over a specific period. Analysts and investors often use financial performance metrics to compare firms within the same industry or to evaluate performance across industries and sectors on a broader scale (Will, 2024).

Financial performance can be defined as the survival of a company or its ability to achieve its objectives. Closely linked to costs, this performance is assessed through quantitative indicators such as ROI, sales profitability, productivity, asset performance, efficiency, and similar metrics (Calori et al., 1989).

Overall, we observe that financial performance is a broad measure of a firm's ability to generate value and sustain operations over time. It is assessed using key financial metrics, including profitability, efficiency, and asset utilization, which provide insights into both short-term and long-term success.

2.2.2. Primary financial statements

A thorough and comprehensive analysis of a company's economic and financial situation requires a significant amount of information, both financial and non-financial. However, financial statements serve as the most essential source of information for evaluating a company's performance. Their primary purpose is to provide a complete picture of the organization's historical financial results.

The three primary financial statements include (Welc, 2022):

- **Income statement**: This statement details the company's revenues, expenses, and profits (or losses) over a specific period, such as a year or a quarter.

- **Balance sheet:** It presents the company's assets, liabilities, and shareholders' equity at a specific date, such as the end of a fiscal year or quarter.
- **Cash Flow statement:** This statement highlights the main sources of cash inflows and the primary directions of cash outflows during a defined time period.

A. Income statement

An income statement, also referred to as the statement of profit or loss or the statement of operations, provides a detailed account of a company's financial performance over a specific period, such as a year, quarter, or month. It highlights the company's revenues, expenses, and earnings (or losses) within that timeframe.

Table 2 presents an example of consolidated income statement of Volkswagen Group, for fiscal years 2007 and 2008.

From an analytical perspective, the main components of an income statement include (Welc, 2022):

- **Basic operating results:** This comprises net sales, cost of goods sold, general and administrative expenses, gross profit on sales, and profit on sales.
- **Other operating income and expenses:** This covers additional operational activities, including extraordinary and one-off items.
- **Financial income and expenses:** These detail incomes earned from financial activities and associated costs.
- **Pre-tax earnings and net earnings:** This includes income taxes (both current and deferred) and results in net earnings.

For groups of companies, which consist of a parent company and its subsidiaries, consolidated net earnings are further classified as follows:

- **Net earnings attributable to shareholders of the parent company:** Reflecting the portion of earnings allocated to the parent company's shareholders.
- **Net earnings attributable to non-controlling interests:** Representing the share of earnings attributable to minority stakeholders.

This structure ensures a comprehensive presentation of a company's financial results, enabling stakeholders to assess performance effectively.

Table 2: Consolidated income statement of Volkswagen Group for fiscal years 2007 and 2008

In EUR million	**Note**	**2007**	**2008**
Sales revenue	**1**	**108,897**	**113,808**
Cost of sales	2	92,603	96,612
Gross profit		**16,294**	**17,196**
Distribution expenses	3	9,274	10,552
Administrative expenses	4	2,453	2,742
Other operating income	5	5,994	8,770
Other operating expenses	6	4,410	6,339
Operating profit		**6,151**	**6,333**
Share of profits and losses of equity-accounted investments	7	734	910
Finance costs	8	1,647	1,815
Other financial result	9	1,305	1,180
Financial result		**392**	**275**
Profit before tax		**6,543**	**6,608**
Income tax income/expense	10	2,421	1,920
Current		2,744	2,338
Deferred		−323	−418
Profit after tax		4,122	4,688
Minority interests		2	−65
Profit attributable to shareholders of Volkswagen AG		4,120	4,753

Source: Annual report of Volkswagen Group for fiscal year 2008.

B. Balance sheet

A balance sheet, also known as the statement of financial position, provides a snapshot of a company's financial standing at a specific point in time, such as the end of a fiscal year or quarter. Unlike an income statement, which reflects earnings over a period, the balance sheet is often described as a "photograph" capturing the company's financial wealth at a given moment.

The balance sheet reveals the book values of a company's assets, liabilities, and shareholders' equity and examines its financial position from two complementary perspectives (Welc, 2022):

- **An assets side:** This side identifies the types of assets owned by the company and their respective book values.
- **A financing side:** This side discloses the sources of funds used to finance the company's assets.

Corporate assets are generally funded through two broad classes:

- **Shareholders' equity:** Representing funds provided by the company's owners, serving as the residual claim to assets after settling liabilities.
- **Liabilities and provisions:** External funds provided by creditors and other non-shareholders, which are expected to be repaid in the future.

By definition, both sides of the balance sheet must have equal total amounts, as all corporate assets require a corresponding source of funding. This principle is depicted in table 3.
On the right-hand side of the balance sheet, companies typically list shareholders' equity at the top, followed by various classes of provisions and liabilities. From an economic standpoint, shareholders' equity represents a hypothetical residual claim on corporate assets by the company's owners, remaining after all creditors' claims (i.e., liabilities) have been settled.

Table 3: Model balance sheet of a company

Long-term (non-current) and short-term (current) assets (i.e. assets that a company holds)		Equity and liabilities (i.e. sources of assets' funding)
Total assets	**=**	**Total liabilities and shareholders' equity**

Source: (Welc, 2022)

C. Cash flow statement

The cash flow statement is one of the three primary financial statements, providing critical information about the total change in a company's cash and cash equivalents over a given period. It also categorizes the major sources of corporate cash inflows and outflows. Its importance lies in addressing the limitations of accrual-based financial reporting found in income statements and balance sheets.

The accrual basis of accounting records transactions and economic events when they occur, rather than when related cash inflows or outflows happen. This can result in discrepancies between reported earnings and actual cash flows. For example (Welc, 2022):

- Sales revenues are recognized upon the delivery of goods or services, even if payment is collected later or in advance.
- Inventory becomes cost of sales when sold, but the payments for purchasing or manufacturing may occur earlier.
- Expenses for new property, plant, and equipment are incurred upon purchase, but they are expensed gradually through depreciation across future periods.
- Obsolete inventories are written down for impairment, while the related cash losses are realized upon sale.

From a cash flow perspective, the business activities of any company can be categorized into three distinct areas (Hackel & Livnat, 1996):

- **Operating activities:** These encompass the core operations of the business, such as the manufacturing and sale of vehicles in the case of Volkswagen Group, retail sales of consumer goods by Tesco, or the provision of telecommunication services by T-Mobile.
- **Investing activities:** This category includes transactions involving the acquisition and disposal of non-current assets, such as property, plant, and equipment (PP&E), intangibles, real estate investments, and long-term investments in bonds or shares. It also covers short-term financial assets and the associated costs and benefits, such as interest income, dividends received, or gains and losses from the sale of these assets.
- **Financing activities:** These activities pertain to the sources of corporate funding, excluding operating payables. They include issuing equity capital, repurchasing an entity's own shares, distributing dividends, obtaining borrowings, repaying loans, and making interest payments.

The operating, investing, and financing cash flows collectively contribute to the total corporate cash flows within a specific period. This aggregation provides a comprehensive view of the company's overall cash flow dynamics during the designated timeframe.

Table 4 presents an example Consolidated net cash flows of Volkswagen Group in fiscal years 2007 and 2008.

Table 4: Consolidated net cash flows of Volkswagen Group in fiscal years 2007 and 2008

In EUR million	2007	2008
Cash and cash equivalents at beginning of period	**9,367**	**9,914**
Cash flows from operating activities	15,662	10,799
Investing activities	−15,812	−19,280
Cash flows from financing activities	787	8,123
Effect of exchange rate changes on cash and cash equivalents	−90	−113
Net change in cash and cash equivalents	**547**	**−471**
Cash and cash equivalents at end of period	**9,914**	**9,443**

Source: Annual report of Volkswagen Group for fiscal year 2008.

2.2.3. Overview of key financial metrics

Financial metrics are broadly categorized into three key areas: revenue metrics, profitability metrics, and cash flow and liquidity measures. Each category provides critical insights into different dimensions of financial performance (Schroth, 2025):

- **Revenue metrics:** These metrics evaluate the total income generated by a company. Key indicators include total revenue, revenue growth rate, and average revenue per user (ARPU).
- **Profitability metrics:** These measures assess a company's efficiency in converting revenue into profit. Important metrics include gross profit margin, operating profit margin, net profit margin, and EBITDA.
- **Cash flow and liquidity metrics:** Often referred to as the backbone of financial health, these metrics assess a company's ability to manage cash flow and sustain operations. Key indicators include operating cash flow, free cash flow, and liquidity ratios such as the current ratio and quick ratio.

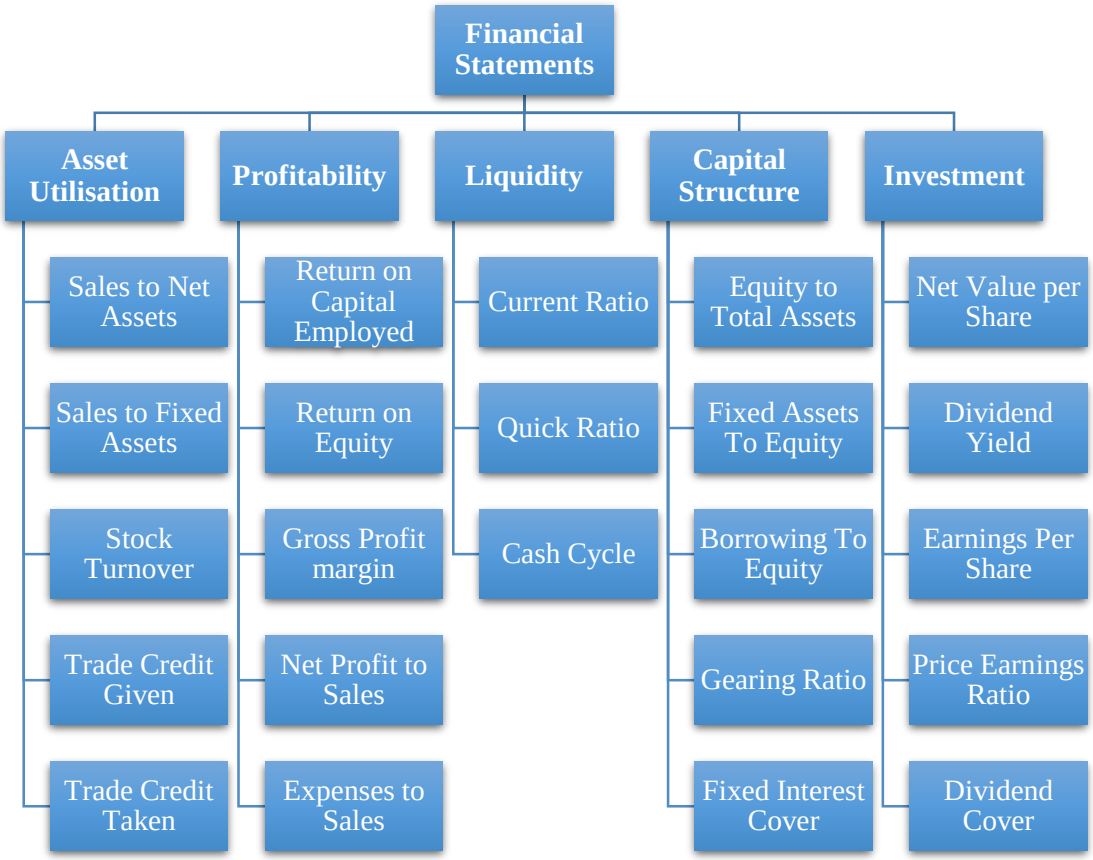
Understanding these metrics and their interrelationships is essential for making sound and informed financial decisions.

2.2.4. Financial key performance indicators (KPIs)

Financial key performance indicators (KPIs) are typically derived from an organization's financial statements, primarily the statement of financial performance (income statement) and the statement of financial position (balance sheet). These statements offer a range of financial ratios that can be utilized as KPIs. However, it is crucial for management to be

selective when choosing KPIs for performance measurement. Overloading the system with excessive indicators can render strategic-level performance management ineffective. To address this, it is recommended that senior executive management conduct a brainstorming session to identify and select approximately five KPIs that will effectively assess strategic performance. Figure 3 provides a summary of the different categories of financial ratios, while Table 5 illustrates the various types of financial ratios that may be applied for strategic performance management (Camilleri, 2024).

Figure 3: Summary of financial ratios (KPIs) by category



Source: (Camilleri, 2024)

Table 5: Financial ratios (KPIs) by application category

Financial Ratio	Formula	Remarks
Liquidity: Current Ratio	$\text{Current Assets} \div \text{Current Liabilities}$	A current ratio of between 1.5:1 and 2:1 is generally considered practical although this depends on the nature of the business. Current assets should always be greater than current liabilities.
Liquid Ratio (Quick ratio or Acid test)	$(\text{Current Assets} - \text{Stock}) \div \text{Current Liabilities}$	A liquid ratio of 1:1 is normally considered satisfactory but may be allowed to fall to 0.9:1 if the debtors pay promptly and there is a regular inflow of cash from them.
Profitability: Return on Capital Employed (R.O.C.E)	$\frac{\text{Profit Before Interest and Tax}}{\text{Capital Employed}} \times 100$	This ratio indicates management efficiency because it contrasts the earnings with the funds utilized to generate that profit. As a minimum management will aim to maintain the ROCE level. Capital Employed = Total Assets - Current Liabilities.
Return on Equity (R.O.E)	$\text{Profit Before Tax (after preference dividends)} \div (\text{Ordinary Share Capital} + \text{Reserves})$	The ratio measures profitability by revealing how much profit a company generates with the money shareholders have invested. Net income is for the full fiscal year (before dividends paid to common stockholders but after dividends to

		preferred stock.) Shareholder's equity does not include preferred shares.
Gross Profit Margin	Gross Profit ÷ Sales	The ratio shows the margin that is being earned on sales. It measures a company's manufacturing and distribution efficiency during the production process. Note that gross margin tends to remain stable over time.
Net Profit to Sales	Profit Before Intereset and Tax ÷ Sales	The ratio indicates the overall performance of the company.
Expenses to Sales: Operating Expenses Selling/Distribution Cost Administrative Expenses Finance Charges	 Total Operating Expenses ÷ Sales Selling & Distribution ÷ Sales Administrative Expenses ÷ Sales Finance Charges ÷ Sales	Only four ratios are shown and focus on the performance of the company in terms of the proportion of each particular expense to sales. Other ratios may include any other expense item. These ratios provide a view of the company's cost structure.
Asset Utilization: Sales to Net Assets	 Sales ÷ Net Assets Where: Net Assets = Total Assets − Total Liabilities	Unless the firm is over trading, a high ratio is a healthy indication. A low ratio may indicate unused capacity, especially if accompanied with a high ratio of fixed overheads to sales.

Sales to Fixed Assets	Sales ÷ Net Fixed Assets Where: Net Fixed Assets = Purchase price − Depreciation + Lasehold Improvements − Total Liabilities	Measures the utilization of fixed assets. A low ratio may suggest ineffective use of fixed assets. However, this may also be due to recent fixed capital investment. One may consider using the book value of the fixed assets for net fixed assets.
Stock Turnover (days)	(Average Stock ÷ Cost of Sales) × 365 days	Shows the number of days' stock held before it is sold. Average Stock = (Opening Stock + Closing Stock) = 2
Trade Credit Given (days)	(Average Debtors ÷ Sales) × 365 days	Measures the collection period in days of debtors. Average Debtors = (Opening Debtors + Closing Debtors) + 2
Trade Credit Taken (days)	(Average Creditors ÷ Purchase) × 365 days	Measures the payment period in days of creditors. Average Creditors = (Opening Creditors + Closing Creditors) + 2
Cash Cycle Duration (days)	Stock Turnover + Credit Period Give − Credit Period Taken	Measures the period of time between the purchase of stocks and receipt of cash from debtors for goods sold.
Capital Structure: Equity to Total Assets	(Capital + Reserves) ÷ Total Assets	Shows the percentage of total assets financed by the shareholders.
Fixed Assets to Equity	Net Fixed Assets ÷ (Capital + Reserves)	Shows the percentage of fixed assets financed by the shareholders.
Borrowing to Equity	(Long Term Liabilities + Current Liabilities) ÷ (Capital + Reserves)	Shows the proportion of external financing versus internal financing.

Gearing Ratio	Long Term Liabilities ÷ (Capital + Reserves)	Measures financial leverage, demonstrating the degree to which a firm's activities are funded by owner's funds versus creditor's funds.
Fixed Interest Cover	Net Profit Before Interest ÷ Fixed Interest Expense	Indicates how easily a firm can pay interest on outstanding debt.
Investment: Net Asset Value per Share	Net Assets ÷ No. of Ordinary Shares Where: Net Assets = Total Assets − Total Liabilities	Represents the value of a share and may be viewed as the price at which shares are bought and sold.
Dividend Yield	Dividend per Share ÷ Market Price per Share	Measures the real rate of return on an investment since it is based on the market price and not the nominal value.
Earnings per Share	Net Profit After Tax ÷ No. of Ordinary Shares	Indicates level of profitability, but it is limited when compared to dividend yield since number of shares remain constant.
Price Earnings Ratio	Market Price per Share ÷ Earnings per Share	The lower the price earnings ratio, the quicker the capital outlay is recovered.
Dividend Cover	Net Profit After Tax ÷ Net Dividend	It shows the amount available for distribution and demonstrates the plough back and dividend distribution policies of the company.

Source: (Camilleri, 2024)

2.2.5. The impact of capital expenditure on the financial statements

CAPEX impact a company's financial statements in several distinct ways (N. Singh, 2014):

A. Income statement

Although CAPEX does not appear directly on the income statement, the assets acquired through CAPEX are depreciated over their useful lives. Depreciation is recorded as an expense, thereby reducing net income. For example, if a company purchases machinery, the cost is allocated as depreciation expense over the machinery's expected useful life.

B. Balance sheet

CAPEX results in the acquisition of new assets or the improvement of existing ones. These are recorded on the balance sheet under categories such as property, plant, and equipment (PP&E) or intangible assets, thereby increasing the overall value of the company's total assets.

As assets are depreciated over time, the accumulated depreciation account increases, which in turn reduces the recorded book value of these assets on the balance sheet.

C. Cash flow statement

CAPEX is reflected as a cash outflow in the investing activities section of the cash flow statement. This outflow represents the expenditure on purchasing or upgrading assets and consequently reduces the company's cash balance.

When using the indirect method for reporting cash flows from operating activities, CAPEX is accounted for as a reduction from operating cash flows to arrive at the net cash provided by (or used in) these activities.

Conclusion

This chapter provided the theoretical foundation of the study. We reviewed existing literature on the relationship between CAPEX and financial performance across various sectors, with a focus on the telecommunications sector. We also defined the key concepts used in our research, including the nature and role of CAPEX and financial key performance indicators. This framework supported the development of our research model and helped to clarify the variables used in the empirical analyses.

CHAPTER 2: HOST ORGANIZATION AND METHODOLOGY OF RESEARCH

The following chapter provides a detailed overview of the host organization, Ooredoo Algeria, based on information gathered from various documents and data provided directly by the company. Additionally, it outlines the methodological framework of the research, including the research methodological approach, data sources, variables, and statistical methods employed.

Section 01: Host organization presentation

In this section, we introduce the host organization, beginning with an overview of the Ooredoo Group and then focusing on Ooredoo Algeria. It concisely presents the company's history, core values, missions and goals, organizational structure, and the role of the finance control department, where the research was conducted.

1.1. Introduction to Ooredoo group

Ooredoo is an international, industry-leading telecommunications company that provides mobile, fixed-line, and high-speed internet services, as well as enterprise solutions tailored to the needs of both individual consumers and businesses across the markets of the Middle East, North Africa, and Southeast Asia. As a company dedicated to serving communities, Ooredoo is driven by its vision to enrich lives and its belief in the power of communication to foster human development. By enabling individuals to realize their goals and unlock their full potential, Ooredoo aims to contribute meaningfully to societal progress.

In 2013, the company was honored as the "Best Mobile Operator of the Year" at the World Communication Awards. In 2019, it generated revenues of 8.2 billion US$ and, as of 30 April 2020, served a consolidated global customer base of over 118 million. Additionally, Ooredoo's shares are publicly traded on both the Qatar Exchange and the Abu Dhabi Securities Exchange.

Figure 4: Ooredoo group logo

Source: Data provided by the company.

Ooredoo operates in the following markets:

- Algeria
- Tunisia
- Qatar
- Kuwait
- Oman
- Iraq
- Palestine
- The Maldives
- Myanmar
- Indonesia

1.2. Ooredoo Algeria company presentation

Today, Ooredoo is a major key player in the telecommunications sector and a driving force behind socio-economic growth. Founded in August 2004, Ooredoo Algeria quickly emerged as an indispensable leader in the telecommunications sector, particularly among young Algerians, thanks to its bold vision and robust national network.

As an innovator, Ooredoo pioneered the launch of 3G in 2013 and 4G in 2016, and it now covers 99% of Algeria's population.

Beyond its strong operational performance, the company stands out for its commitment to its employees and Algerian society. Known for its innovative human resource policies, Ooredoo provides an attractive environment for talent and actively promotes social initiatives.

Ooredoo Algeria continues to play an important role in Algeria's digital and social development, with a broad sales network that includes over 250 points of sale across the country, ambitious projects such as the 5G rollout, and a strong focus on sustainability.

Under the strategic leadership of Mr. Roni Tohme, General Manager since 2023, the company establishes itself as a leading actor in North Africa and beyond by combining innovation, excellence, and corporate social responsibility.

The Ooredoo telecommunications group announced on Monday, February 10, 2025, its financial results for the fiscal year 2024.

During 2024, Ooredoo Algeria's revenues rose to 104.6 billion Algerian dinars, up from to 91.9 billion dinars in 2023, reflecting an increase of 13.8%. Likewise, the earnings before interest, taxes, depreciation, and amortization (EBITDA) increased to 44.2 billion dinars in 2024 compared to 37 billion dinars in 2023, marking a significant rise of 19.2%.

In the same year, Ooredoo Algeria allocated 16.7 billion dinars to investments aimed at enhancing network coverage across the national territory, particularly under the Universal Service of Electronic Communications framework. The company's customer base also expanded, reaching 14.7 million subscribers by the end of December 2024, compared to 13.4 million in 2023, reflecting a growth of 10%.

These outstanding results are driven by the company's successful strategy focused on digitalization, expanding network coverage, and continuously enhancing the customer experience. The financial results for 2024 further validate Ooredoo's effective strategic orientation in advancing the Algerian telecommunications market.

1.3. Ooredoo Algeria history

As the leading multimedia operator in Algeria, Ooredoo obtained a national mobile service license on December 2, 2003. Following this, On August 25, 2004, Wataniya Telecom Algeria (WTA) introduced its commercial brand, Nedjma, and immediately initiated an accelerated network deployment strategy, achieving full nationwide coverage by the end of 2005.

In March 2007, Kuwait Projects Company (KPICO) finalized a transaction with Qatar Telecom Group (Qtel), leading to Qtel becoming the majority shareholder of Wataniya Telecom.

On February 25, 2013, Qtel Group rebranded and adopted the new identity of Ooredoo group. This transformation was gradually extended to all group subsidiaries, leading to the official renaming of Nedjma to Ooredoo on November 21, 2013.

At the end of 2013, Ooredoo launched its third-generation (3G) mobile network, followed by the introduction of its fourth-generation (4G) network in 2016.

1.4. Visual identity of Ooredoo Algeria

On September 25, 2022, following an announcement by Ooredoo group, Ooredoo Algeria introduced its new visual identity and unveiled its new slogan, "UPGRADE YOUR WORLD".

In a sector driven by rapid growth and innovation, the new Ooredoo logo reflects the company's forward-thinking vision, addressing future customer needs while maintaining commitment to both employees and clientele. This refreshed visual identity is a key compnent of the company's corporate transformation strategy, distinguished by clarity, dynamism, and vibrancy. It reflects the same spirit and passion that have long defined the organization and reinforces its aspirations for the future.

The following table shows the evolution of the Ooredoo Algeria logo:

Table 6: The evolution of Ooredoo Algeria logo

Logo	Period of time
	2004-2009
	2009-2013
	2013-2015
	2016-2022
	2022-until now

Source: Data provided by the company.

1.5. Values of Ooredoo Algeria

While championing change in a spirit of continuity, the new Ooredoo brand was launched on November 21, 2013, marking the beginning of a new era that honors Nedjma's legacy and values, principles that have been embraced and further enriched by Ooredoo.

The following table presents the values of Ooredoo Algeria:

Table 7: The values of Ooredoo Algeria

 **Caring**	 **Connecting**	 **Challenging**
For the support, trust, respect for others, and responsibility that Ooredoo embodies.	For its commitment to working collaboratively and fully integrating with the Algerian community.	For the progress to which Ooredoo aspires and its ongoing pursuit of improvement and distinctiveness.

Source: Data provided by the company.

1.6. Missions and goals of Ooredoo Algeria

Ooredoo Algeria is dedicated to innovation, excellence, and sustainable growth. These are the fundamentals of its missions and goals:

1.6.1. Ooredoo Algeria missions

The missions of Ooredoo Algeria are outlined as follows:

- To provide telecommunications services enabling the transmission and exchange of voice, written messages, digital data, and audiovisual information.
- To deliver a unique customer experience by leveraging highly skilled human resources, a strong brand, and innovative solutions across Algeria.
- To establish, develop, operate, and manage mobile telephony networks.
- To maintain and install mobile telephony equipment.
- To offer services and make mobile telephony products available to customers.
- To ensure the continuous availability of products for all customers throughout the country.
- To conduct its activities in adherence to fair competition practices.
- To offer mobile products and services for both incoming and outgoing international communication while complying with the rules established by international regulations within its field of operations.
- To establish and manage interconnections with national and international mobile network operators, ensuring seamless communication between different customers.

1.6.2. Ooredoo Algeria goals

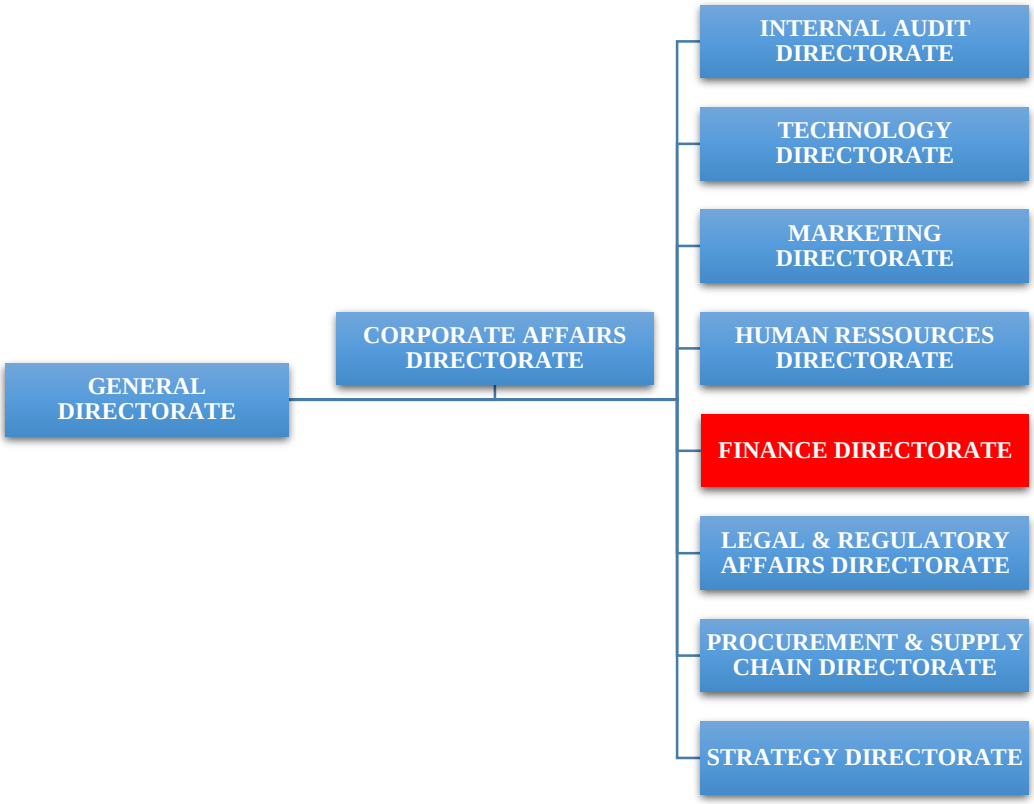
The goals of Ooredoo Algeria are outlined as follows:

- To be the leader in the mobile telecommunications market in Algeria.
- Deliver a unique and high-quality customer experience.
- Make services accessible to the entire population and businesses throughout Algeria.
- Maximize subscriber acquisition.
- Attract and cultivate top talent.
- Provide user-friendly and accessible solutions that meet market demands.
- Achieve excellence in all operations.
- Maintain and enhance the company's position as a market leader.
- Secure additional market share.
- Expand and enhance network coverage.
- Establish a reputation as the leading multimedia operator.
- Implement customer retention strategies.
- Introduce advanced technologies.
- Become the most trusted corporate operator in the market.
- Employ an innovative marketing approach and adopt an effective communication strategy.

1.7. Ooredoo Algeria organization structure

Ooredoo Algeria has undergone several organizational changes, driven by shifts in objectives and missions to align with the goals set by the executive management. The organizational structure of Ooredoo is outlined as follows:

Figure 5: Ooredoo Algeria organization structure



Source: Data provided by the company.

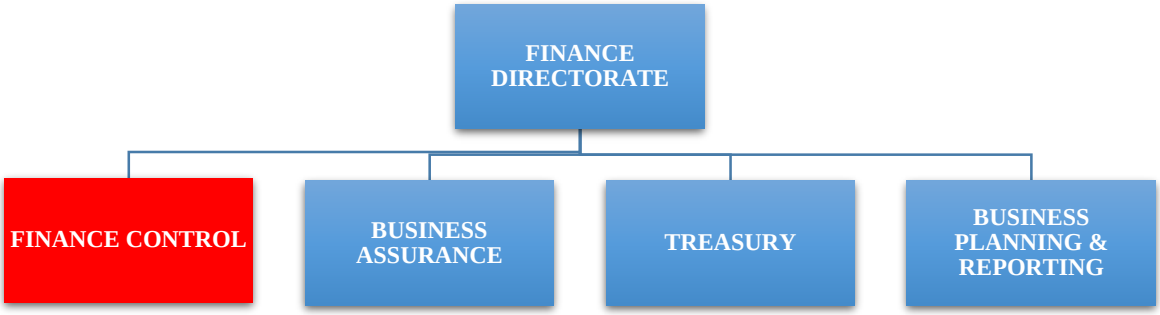
1.7.1. Finance directorate in Ooredoo Algeria

The finance directorate serves as the guarantor of regulatory adherence, ensuring full compliance with Algerian financial legislation. It is composed of four departments:

- Finance control department.
- Business assurance department.
- Treasury department.
- Business planning & reporting department.

The organizational structure of the finance directorate is outlined as follows:

Figure 6: Finance directorate organization structure



Source: Data provided by the company.

1.7.2. Finance control department in Ooredoo Algeria

At Ooredoo Algeria, the finance control department operates under the supervision of the finance directorate and plays a pivotal role in ensuring financial accuracy, regulatory compliance, and strategic decision-making support. Positioned alongside essential departments such as business assurance, treasury, and business planning & reporting, finance control is a critical department that ensures the company's financial stability.

The department is structured into four main divisions, each with distinct services:

A. Operational Control division

This division is responsible for overseeing day-to-day financial operations, ensuring accurate financial recording, continuous monitoring, and regulatory compliance. It is structured into three core services:

- **Account Receivable (AR) & Revenue Accounting service:** This service is responsible for the accurate accounting and control of revenues. It includes:
  - Accounting Revenue: Ensures precise recording of revenue in compliance with accounting standards.
  - Revenue Control & Reporting: Monitors revenue streams and provides regular reports to support business decisions.
  - Control & Commission Accounting: Manages the financial aspects of commissions, ensuring transparent and accurate accounting.
- **Investment & Inventory service:** This service manages the company's fixed assets and inventory. It includes:
  - Fixed Assets: Oversees the entire life cycle accounting of physical assets, from acquisition to depreciation and disposal.

- Commercial Stock Management & Purchase Demand Requests (PDR): Handles commercial inventories and purchase demand requests, ensuring optimized stock control aligned with operational needs.

❖ **Accounts Payable (AP) service:** This service ensures the accurate and timely processing of the company's obligations. It includes:

- Sites Suppliers & TowerCO (Tower Company): Oversees accounts related to site infrastructure and third-party tower operators.
- AP Local Suppliers: Handles financial transactions and payments for local vendors.
- AP Foreign Suppliers: Manages payments and compliance for international vendors.

B. General Ledger division

The General Ledger division is central to financial reporting and control. It includes:

❖ **Accounting IFRS & Local service:** Ensures that financial records are comply with International Financial Reporting Standards (IFRS) and Algerian accounting standards.

❖ **Analysis & Reconciliation service:** Performs regular analysis and reconciliation of accounts to ensure accuracy, integrity, and consistency in financial data.

C. Taxation division

This division oversees all aspects of tax compliance and strategic planning, ensuring Ooredoo Algeria adheres to national tax regulations while improving its tax situation. The team of this division is responsible for:

- Preparing and submitting tax returns.
- Evaluating the risk of taxes.
- Coordinating with tax authorities and supporting audits.

D. P2P Compliance & Reporting division

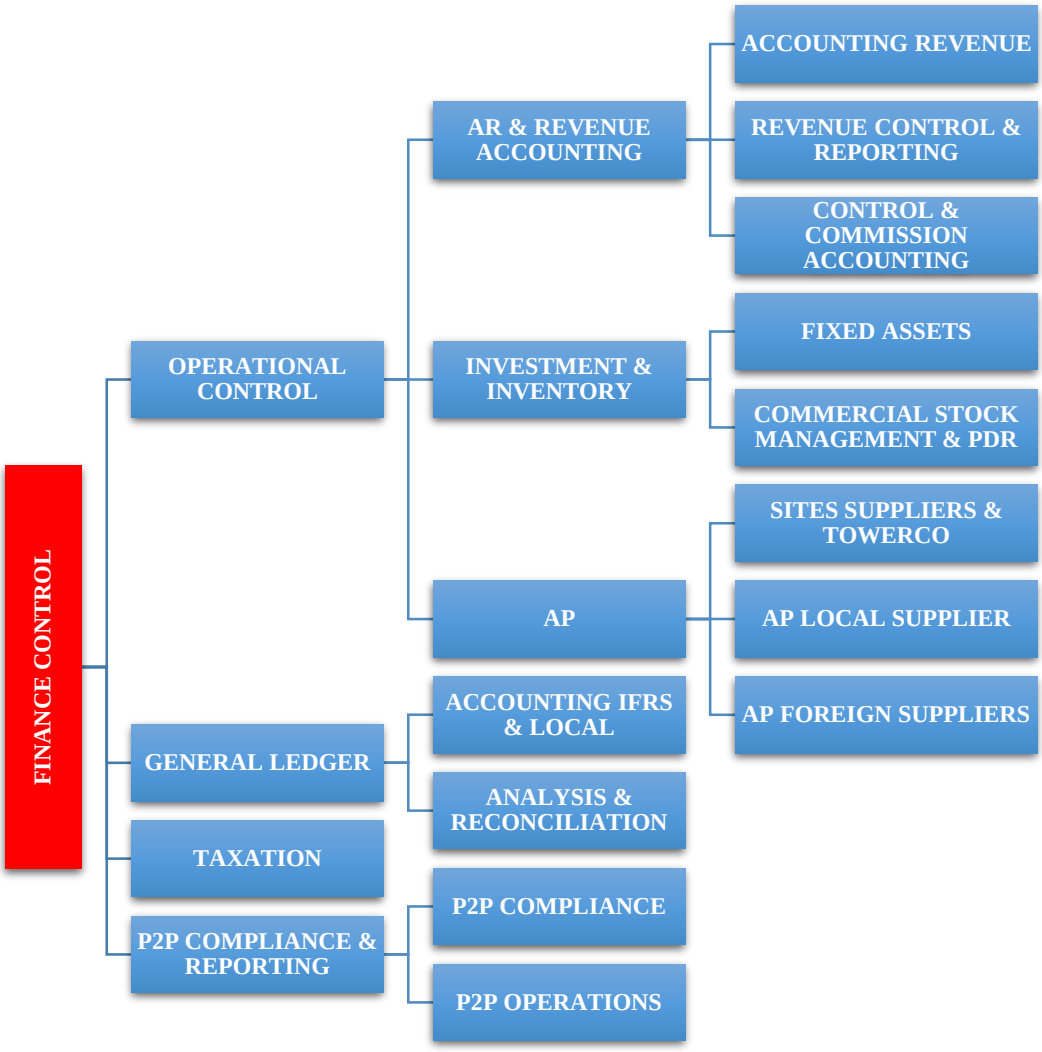
This division ensures the integrity Procure-to-Pay (P2P) process, guaranteeing that all procurement and payment activities adhere with internal policies and regulatory requirements. It includes:

❖ **P2P Compliance service:** Ensures that procurement procedures align with internal control policies and regulatory standards.

- **P2P Operations service:** Manages the operational aspects of procurement transactions, from purchase orders to payment processing.

The organizational structure of financial control department is outlined as follows:

Figure 7: Finance control department organization structure



Source: Data provided by the company.

Section 02: Methodological framework

In the following section, we present an overview of the key steps undertaken to conduct our research.

2.1. Epistemological paradigm

Osborne (2008) stated that post-positivism, a modification of positivism, maintains that empirical indicators can be used to approximate the truth, while recognizing that no method can capture absolute truth. This paradigm promotes objectivity, quantification, and scientific rigor, while acknowledging potential limitations found in empirical findings.

In our research, we adopted a post-positivist paradigm, which is well suited to studies that rely on quantitative analyses, such us our study. This paradigm permitted us to conduct objective analysis while acknowledging the limitations found in empirical results.

2.2. Methodological approach

According to Gavard-Perret et al. (2012), the classical scientific process under a post-positivist paradigm is based on a hypothetico-deductive approach. This approach entails formulating hypotheses from a theoretical framework and empirically testing them through structured and objective analysis.

In line with this reasoning, our study adopted a hypothetico-deductive approach. The objective was to examine whether capital CAPEX had an immediate and significant positive effect on the financial performance of Ooredoo Algeria. Based on deductive reasoning, we developed testable hypotheses and validated them using quantitative analyses.

This approach was particularly appropriate for our study, as it allowed us to evaluate the strength and direction of associations between variables through structured statistical methods. The findings were intended to inform strategic decision-making at Ooredoo Algeria.

2.3. Data source and collection method

In our study, we relied exclusively on secondary data obtained from the internal financial records of Ooredoo Algeria. The data consisted of quarterly financial statements, including the income statements, and cash flow statements, all prepared in accordance with IFRS and provided by the company’s finance control department.

To ensure consistency in structuring the data and facilitate further processing, we compiled and organized it using Microsoft Excel software. Since our research was entirely based on existing internal financial records, we did not employ primary data collection methods such as surveys or interviews.

The use of verified internal sources enhanced the reliability of our analyses and aligned with the quantitative nature of our methodological approach.

2.4. Data period

Our study covered a period of seven years, from the first quarter of 2017 (Q1 2017) to the fourth quarter of 2023 (Q4 2023), resulting in a total of 28 quarterly observations. We opted for quarterly financial data instead of annual financial data to increase the number of observations and enhance the robustness of our statistical analyses.

This frequency allowed us to examine the immediate effect of CAPEX on the financial performance of Ooredoo Algeria. The selected timeframe ensured a consistent and continuous dataset, reinforcing the reliability of our analyses.

2.5. Research model specification and variables measurement

In our study, we established the research econometric model by defining and quantifying its variables. This step was essential to analyze the associations between the variables clearly.

2.5.1. Variables definition and measurement

In this part, we defined each variable and explained how it was measured. This enabled us to ensure accurate data analysis and interpretation.

A. Independent variable

Stinerock (2022) stated that while the dependent variable is what we aim to explain or predict, the independent variable (often denoted by X) is what we use to make that prediction.

In our study, the independent variable was the CAPEX efficiency ratio, which we applied in two distinct models. The first ratio was denoted X1, while the second, alternative ratio was denoted X1_B. Both ratios drew inspiration from the traditional asset turnover ratio, which measures how efficiently a company uses its assets to generate revenue.

To ensure relevance to our research, we modified these ratios by replacing revenue with EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) in X1, and with Net Earnings in X1_B. We also replaced total assets with CAPEX. These modifications

permitted us to better reflect the financial outcomes resulting from Ooredoo Algeria's new fixed assets investments.

Although CAPEX amount was extracted from the cash flow statements, specifically from the investing activities section, it was considered analytically as an addition to fixed assets in the balance sheet, since it represents new fixed assets acquired by the company. However, EBITDA and net earnings amounts was obtained from the income statements.

The two CAPEX efficiency ratios were constructed using data from Ooredoo Algeria's income statements and cash flow statements, and are presented in the following table:

Table 8: Definition and measurement of the independent variable

Ratio	Formula	Explanation
X1	$\frac{EBITDA}{CAPEX}$	This ratio measures the company's ability to generate operating profit relative to its CAPEX. A higher X1 value indicates that more operating profit is generated for each unit of CAPEX.
X1_B	$\frac{Net\ Earnings}{CAPEX}$	This alternative ratio measures the company's net income relative to its CAPEX. A higher X1_B value indicates that more net income is generated for each unit of CAPEX.

Source: Prepared by the student.

B. Control variable

According to Bhandari (2021), control variables enhance the internal validity of a study by limiting the influence of confounding and other extraneous variables. This allows researchers to establish more reliable correlational or causal relationships between the variables of interest and reduces the risk of research bias. This allows to isolate the control variable's effects from the relationship between the main variables.

In our research, the control variable was the operational expenditure intensity ratio (OPEX intensity ratio). This ratio was used to control for the potential effect of operating expenses on financial performance. The inclusion of this control variable guaranteed that the observed effect of CAPEX was not confused by fluctuations in day-to-day expenses. The calculation of this ratio required the amounts of operating expenses and total revenue, both extracted from Ooredoo Algeria's income statements. The ratio was calculated as follows:

$$X2 = \frac{OPEX}{Total\ Revenue}$$

This ratio measures the proportion of revenue consumed by operating expenses. A higher OPEX intensity percentage indicates that a larger share of revenue was spent on daily operations, which may negatively affect overall profitability.

C. Dependent variable

According to Stinerock (2022), in the context of regression analysis, the dependent variable (often denoted by Y) is what the researcher aims to predict or explain. It is also known as the criterion variable.

In our study, the dependent variable was NPM. The calculation of this ratio required the amounts of net income and total revenue, both obtained from Ooredoo Algeria's income statements. The ratio was calculated as follows:

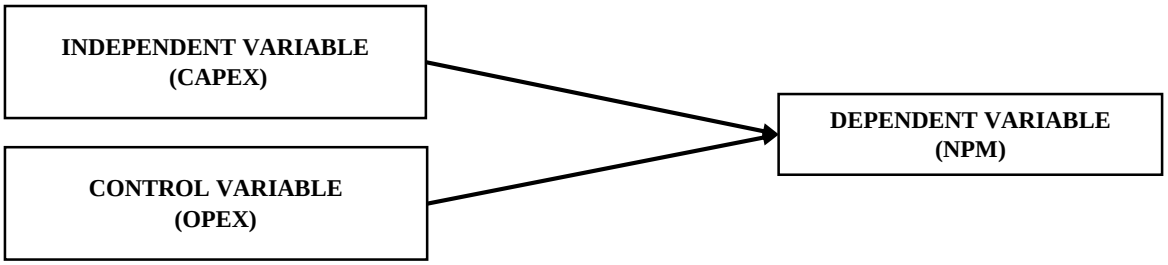
$$NPM = \frac{Net\ Earnings}{Total\ Revenue}$$

This ratio indicates the percentage of revenue that remains as net profit after all expenses have been deducted. A higher NPM percentage indicates greater profitability, as the company retains a larger portion of its revenue as income.

2.5.2. Model specification

In our research, we employed a multiple linear regression model to examine the effect of CAPEX on financial performance while controlling for the impact of OPEX. The regression method used was the Ordinary Least Squares (OLS) method which is widely applied to estimate associations between variables in linear models. The relationship between CAPEX and financial performance, while controlling for the effect of OPEX, was clarified through the following figure:

Figure 8: Model specification



Source: Prepared by the student.

According to Gulati (2025), the key assumptions of the OLS method are linearity, normality of errors, no autocorrelation and no perfect multicollinearity. These assumptions were carefully respected in the statistical processing methods of our study to ensure the validity of the findings.

The standard multiple linear regression equation, estimated using the OLS method, is as follows:

$$Y = \beta 0 + \beta 1\,(X1) + \beta 2(X2) + \ldots + \beta n\,(Xn) + \varepsilon$$

Since our study included two versions of the CAPEX efficiency ratio (X1 and X1_B), we specified two separate models:

❖ **Model 1**

$$Y = \beta 0 + \beta 1\,(X1) + \beta 2(X2) + \varepsilon$$

❖ **Model 2**

$$Y = \beta 0 + \beta 1\,(X1\_B) + \beta 2(X2) + \varepsilon$$

Where:

Y = represents the financial performance indicator (NPM).
β0 = constant or intercept.
β1- β2 = the regression coefficients.
X1 = CAPEX efficiency ratio (EBITDA/CAPEX)
X1_B = CAPEX efficiency ratio (Net Earnings/CAPEX).
X2 = OPEX intensity (OPEX/Total Revenue).
ε = the model error term.

These two models allowed us to explore how different measures of CAPEX impacts the financial performance of Ooredoo Algeria, while controlling for the impact of OPEX.

2.6. Statistical processing methods

After organizing the financial data in Microsoft Excel, we imported the dataset into IBM SPSS Statistics 27 to conduct the required analyses. This software enabled us to examine the relationship between CAPEX and financial performance with precision and clarity. It is important to note that stationarity tests such as the Augmented Dickey-Fuller (ADF) test were not conducted in our research. Although these tests are commonly used in time series

analysis, Rathi (2025) emphasized that stationarity tests are sensitive to sample size and data characteristics, which may result in inconsistent assessments. Given the limited number of observations in our dataset (28 observations), conducting a stationarity test was not appropriate, as small sample size may affect the reliability of the test results.

Among the most important statistical methods used in our research are the following:

A. Descriptive statistics

According to E. A. Asaad (2001), the descriptive statistics encompass a set of methods used to summarize and organize data in a meaningful way. These methods include frequency distribution, percentage distribution, measures of central tendency, measures of position, measures of dispersion, skewness, and kurtosis. The primary objective of descriptive statistics is to highlight key characteristics of a dataset, providing a comprehensive overview of its distribution and variability.

B. Shapiro-Wilk normality test

Ugarte et al. (2008) explained that the Shapiro-Wilk test is a widely used method for assessing the normality of a dataset. Specifically, it allows for a composite hypothesis of normality, meaning that the parameters of the normal distribution do not need to be explicitly stated in the null hypothesis (as they must be for the Lilliefors test). Although the test is known to be conservative, it is particularly effective for testing normality in small sample sizes. The test statistic quantifies the extent to which the empirical quantiles of the sample align with the corresponding theoretical quantiles of a normal distribution. This means that small values of the test statistic (p-value < 0,05) lead to the rejection of the null hypothesis (that the distribution is normal).

C. Correlation Analyses

A. Asaad (2008) suggested that the correlation analysis is used to determine the strength and direction of the relationship between two sets of variables. Unlike regression analysis, correlation does not distinguish between dependent and independent variables; instead, it examines the degree of association between them. The most commonly used correlation coefficient is Pearson’s correlation coefficient, which measures the linear relationship between two continuous variables. In interpreting the value of Pearson correlation coefficient (r), the following table of categorization is used:

Table 9: Pearson coefficient descriptive level

R	Descriptive Level
± 1,00	Perfect Correlation
Between ± 0,75 to ± 0,99	High Correlation
Between ± 0,51 to ± 0,74	Moderately High Correlation
Between ± 0,31 to ± 0,50	Moderately Low Correlation
Between ± 0,01 to ± 0,30	Low Correlation
0,00	No Correlation

Source: (A. Asaad, 2008)

D. Regression analyses

According to Ved (2021), the regression analysis is a statistical method used to estimate a continuous dependent variable based on one or more independent variables. It is widely applied in prediction and forecasting, enabling researchers to model and analyze quantitative data by examining the relationship between dependent and independent variables. This technique provides a structured approach to understanding patterns within data and making informed projections. Regression analysis includes:

❖ Goodness of fit (R^2)

According to Hagquist & Stenbeck (1998), a commonly used statistical measure for assessing the goodness of fit in linear regression models is R^2, the coefficient of determination. R^2 quantifies the closeness between the predicted regression line and the observed data by expressing the proportion of variance explained. More specifically, R^2 measures the proportion of the total variation in the dependent variable that is accounted for by the independent variable. When the model includes two or more independent variables, R^2 is referred to as the multiple coefficient of determination, representing the proportion of total variation in the dependent variable explained by the entire model, encompassing all independent variables.

❖ Multicollinearity statistics

Prasad (2016) described multicollinearity as a condition in which independent variables exhibit a high degree of correlation with one another. In regression analysis, it is a critical assumption that the model should not be affected by multicollinearity. The presence of multicollinearity can be detected in several ways. Two of the more easily understood of these will be discussed briefly:

- **Variance Inflation Factors (VIF):** Montgomery & Runger (2010) explained the variance inflation factor (VIF), expressed as $VIF = 1/(1 - R^2)$, as a crucial indicator of multicollinearity. A higher VIF value signifies more severe multicollinearity, potentially affecting the stability of regression estimates. While some researchers propose that multicollinearity becomes problematic when VIF exceeds 10, others argue that this threshold is too lenient and recommend stricter limits, suggesting that VIF should not exceed 4 or 5 to ensure reliable model interpretation.
- **Tolerance:** Menard (1995) identified the tolerance statistic as the reciprocal of the VIF, expressed as (1/VIF). While tolerance serves as an indicator of multicollinearity, values below 0.2 are considered problematic, suggesting a high degree of correlation among predictors and potential instability in the regression model.

❖ **Autocorrelation (Durbin-Watson test)**

Holder & Eichholz (2019) stated that when data is structured over time or follows a natural order, autocorrelation becomes a significant concern. This occurs when consecutive residuals exhibit a relationship, thereby compromising the assumption of independence in regression errors. A widely used measure for detecting autocorrelation is the Durbin-Watson test statistic, which ranges between 0 and 4. Values approaching 0 indicate positive autocorrelation, where residuals are highly correlated and tend to follow similar patterns. Conversely, values near 4 suggest negative autocorrelation, meaning that consecutive residuals alternate in sign. A test statistic close to 2 generally implies that no substantial autocorrelation is present, supporting the assumption of independently distributed errors.

❖ **F-test (ANOVA)**

Riegelman (2005) emphasized the importance of evaluating the overall significance of a regression model. This is accomplished using the F-test, which is presented in the ANOVA table. In multiple linear regression, the F-test determines whether the independent variables, collectively, exert a statistically significant influence on the dependent variable, thereby assessing the model's explanatory power and validity.

❖ **Regression coefficients**

Yoe (2016) explained that the beta values (β) represent regression coefficients, which, being derived from a random sample, function as random variables themselves. When these beta coefficients are found to be statistically significant and differ from zero, they provide a

measure of the effect of a specific independent variable on the dependent variable, while holding all other independent variables constant. Specifically, the beta value quantifies the impact of a one-unit change in the independent variable on the dependent variable, ensuring that the influence of all other predictors in the regression equation has been accounted for.

Conclusion

This chapter presented a comprehensive overview of Ooredoo Algeria and detailed the methodological framework employed in the research. We outlined our research methodological approach, data sources, key variables, and the econometric model used. We also detailed the statistical processing methods applied to analyze the association between CAPEX and the financial performance.

CHAPTER 3: RESULTS AND DISCUSSION

In this chapter, we provide and analyze the empirical findings of our study. First, we summarize the descriptive statistics, evaluate the data's normality, and analyze the correlation patterns between the variables. Then, we conduct regression analyses to assess the influence of CAPEX on Ooredoo Algeria's financial performance. Finally, we validate the research hypotheses, discuss the practical implications of our results, and compare them with the existing literature addressed in the first chapter.

Section 1: Results

This section presents the empirical findings of our study. It comprises descriptive statistics, correlation analyses, normality tests, and the results of two regression models that analyze the effect of CAPEX on the financial performance of Ooredoo Algeria.

1.1. Descriptive statistics

This subsection summarized the main characteristics of our study, including CAPEX efficiency ratio, OPEX intensity ratio, and financial performance indicator (NPM). Measures such as mean, minimum, maximum, standard deviation, and variance were used to illustrate the data's dispersion and central tendency.

The following table presented the descriptive statistics of all variables included in our study:

Table 10: Descriptive statistics

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**	**Variance**
X1	28	0,58	12,47	3,04	2,50	6,27
X1_B	28	-0,35	4,88	0,6	1,01	1,03
X2	28	35,29%	62,04%	46,3%	6,13%	37,64
Y	28	-5,28%	17,71%	5,19%	6,36%	40,57

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of the descriptive statistics shown in Table 10:

- The independent variable X1 had a mean value of 3,04, with a minimum of 0,58 and a maximum of 12,47, indicating moderate variability, as reflected by a standard deviation of 2,50.

- The alternative measure X1_B presented a lower mean of 0,60, with a range from -0,36 to 4,88, and a standard deviation of 1,02, suggesting relatively higher dispersion compared to its mean value.
- The control variable X2 recorded an average operating expenditure intensity of 46,30%, ranging between 35,29% and 62,04%, with a standard deviation of 6,14%.
- As for the dependent variable (NPM), it exhibited a mean value of 5,20%, fluctuating between -5,28% and 17,71%, with a standard deviation of 6,37%, indicating notable variability in net profit margins among the observations.

Overall, the descriptive statistics suggested substantial dispersion in both CAPEX efficiency ratios and financial performance indicator (NPM), supporting the relevance of further econometric analyses.

1.2. Shapiro-Wilk normality test

Before beginning the regression analyses, it was essential to ensure that the data was normally distributed. In our research, the normality test was performed on the dependent variable (NPM) and the regression model's residuals. Ensuring normality improved the reliability of parametric statistical tests and the validity of the findings.

We used the Shapiro-Wilk test because it is particularly useful for small samples (n = 28).

The hypotheses of the test were defined as follows:

- Null Hypothesis (H_0): The data follows a normal distribution.
- Alternative Hypothesis (H_1): The data does not follow a normal distribution.

A p-value greater than 0,05 suggests that we fail to reject the null hypothesis, indicating that the data is normally distributed.

While two regression models were estimated (one with X1 and one with X1_B), the residual normality was checked individually for each.

This method ensured that the linear regression assumptions were appropriately validated for both models.

Furthermore, visual inspection using histograms supplemented the statistical test and provided a clearer understanding of the data distribution.

1.2.1. Shapiro-Wilk normality test of the dependent variable

The following table presented the Shapiro-Wilk test findings for NPM:

Table 11: Shapiro-Wilk test for NPM

	Statistic	**Df**	**Sig.**
NPM	0,972	28	**0,649**

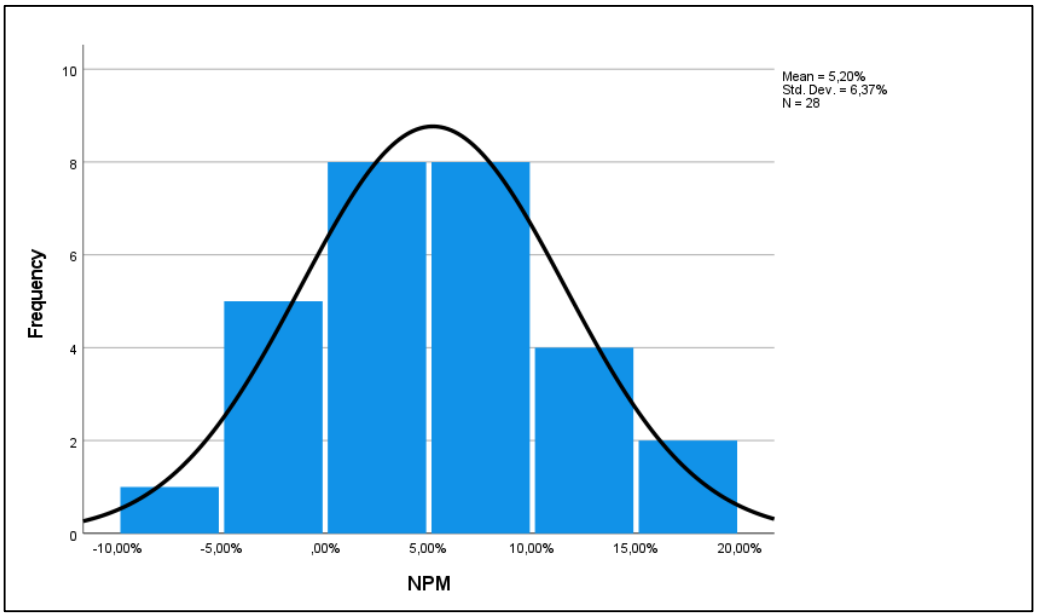
Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of the Shapiro-Wilk test shown in Table 11:

The Shapiro-Wilk test statistic for NPM was 0,972, with a corresponding p-value of 0,649, which was greater than 0,05. Thus, we rejected the alternative hypothesis (H_1) and accepted the null hypothesis (H_0), indicating that NPM was normally distributed.

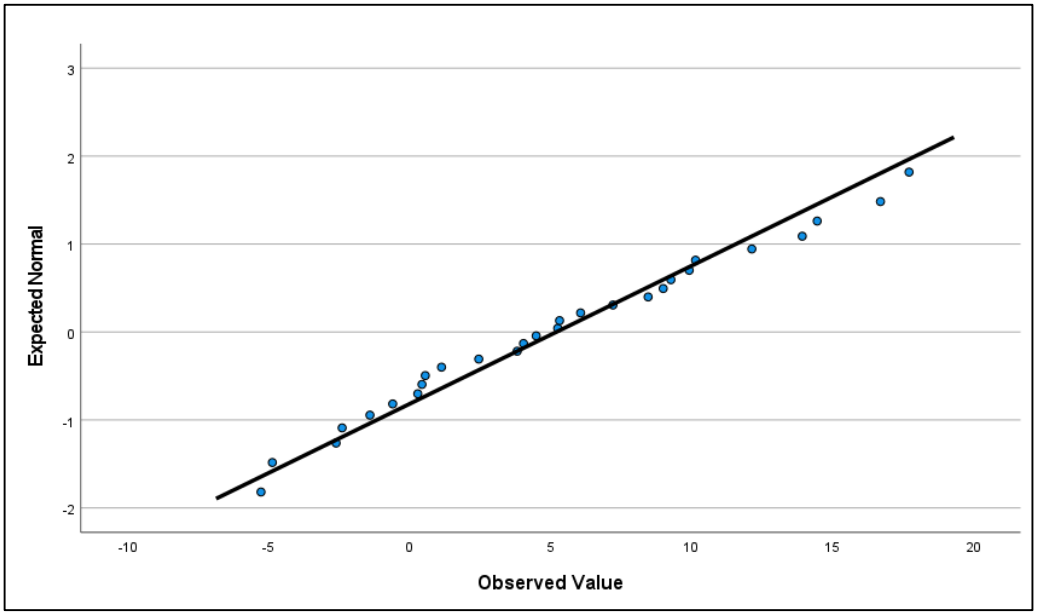
As a result, the dependent variable satisfied the normality assumption required for the regression analysis. The distribution of the variable NPM in relation to normality was clarified through the following figures:

Figure 9: Normality histogram of NPM



Source: Output generated by SPSS V27 software.

Figure 10: Normal Q-Q Plot of NPM



Source: Output generated by SPSS V27 software.

1.2.2. Shapiro-Wilk normality test of the residuals

The following tables presented the results of the Shapiro-Wilk test on the residuals of each regression model. Visual assessments, such as histograms and Q-Q plots, were provided to supplement the statistical findings.

❖ **Model 1**

The following table presented the Shapiro-Wilk test findings for the residuals (Model 1):

Table 12: Shapiro-Wilk test for the residuals (Model 1)

	Statistic	**Df**	**Sig.**
Unstandardized Residual	0,955	28	**0,271**

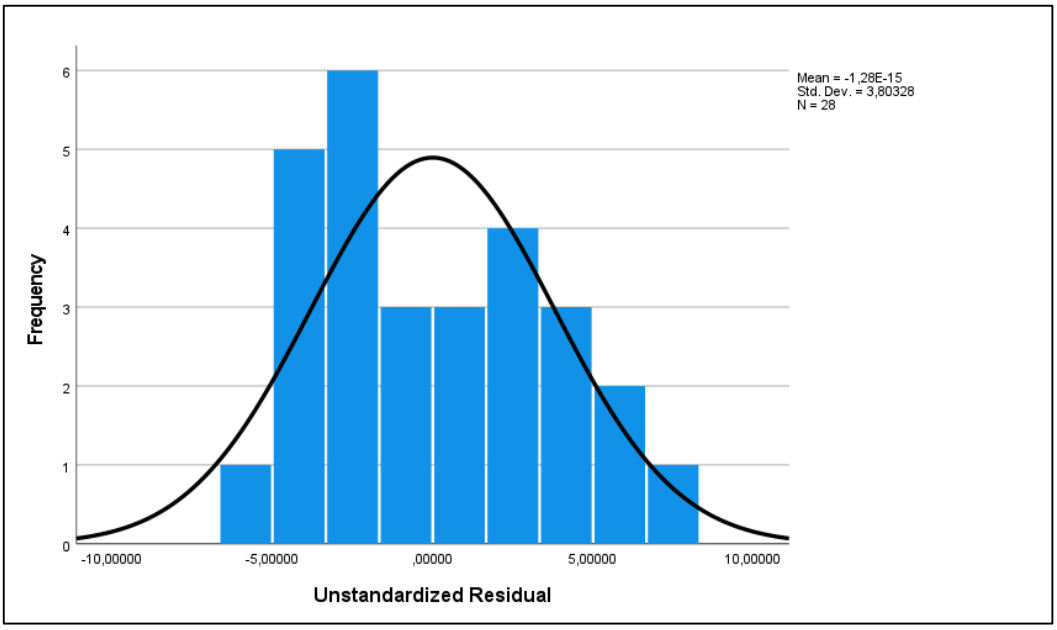
Source: Prepared by the student based on the outputs of the SPSS V27 software.

Based on the results of the Shapiro-Wilk test shown in Table 12:

The Shapiro-Wilk test revealed a statistic of 0,955 with a p-value of 0,271. We accepted the null hypothesis (H_0) and rejected the alternative hypothesis (H_1) as the p-value above the 0,05 significance standards. This indicated that the residuals were normally distributed.

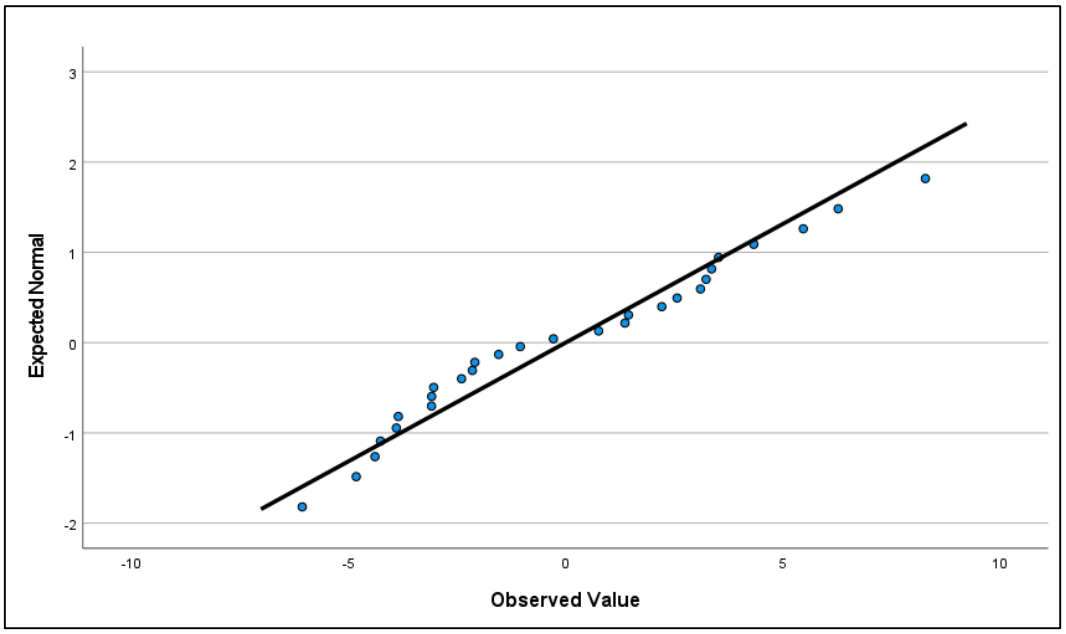
As a result, Model 1 met the residual normality condition required for the regression analyses. The distribution of the residuals for Model 1 in relation to normality was clarified through the following figures:

Figure 11: Normality histogram of unstandardized residuals (Model 1)



Source: Output generated by SPSS V27 software.

Figure 12: Normal Q-Q plot of unstandardized residuals (Model 1)



Source: Output generated by SPSS V27 software.

❖ **Model 2**

The following table presented the Shapiro-Wilk test findings for the residuals (Model 2):

Table 13: Shapiro-Wilk test for the residuals (Model 2)

	Statistic	**Df**	**Sig.**
Unstandardized Residual	0,973	28	**0,673**

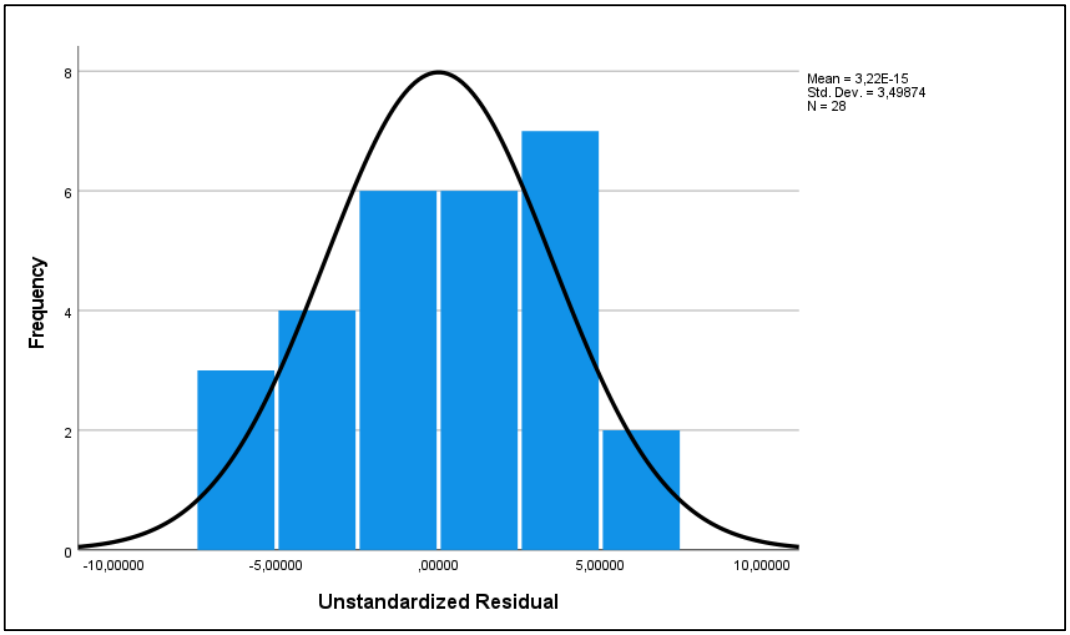
Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of the Shapiro-Wilk test shown in Table 13:

The Shapiro-Wilk test revealed a statistic of 0,973 with a p-value of 0,673. We accepted the null hypothesis (H_0) and rejected the alternative hypothesis (H_1) as the p-value above the 0,05 significance standards. This indicated that the residuals were normally distributed.

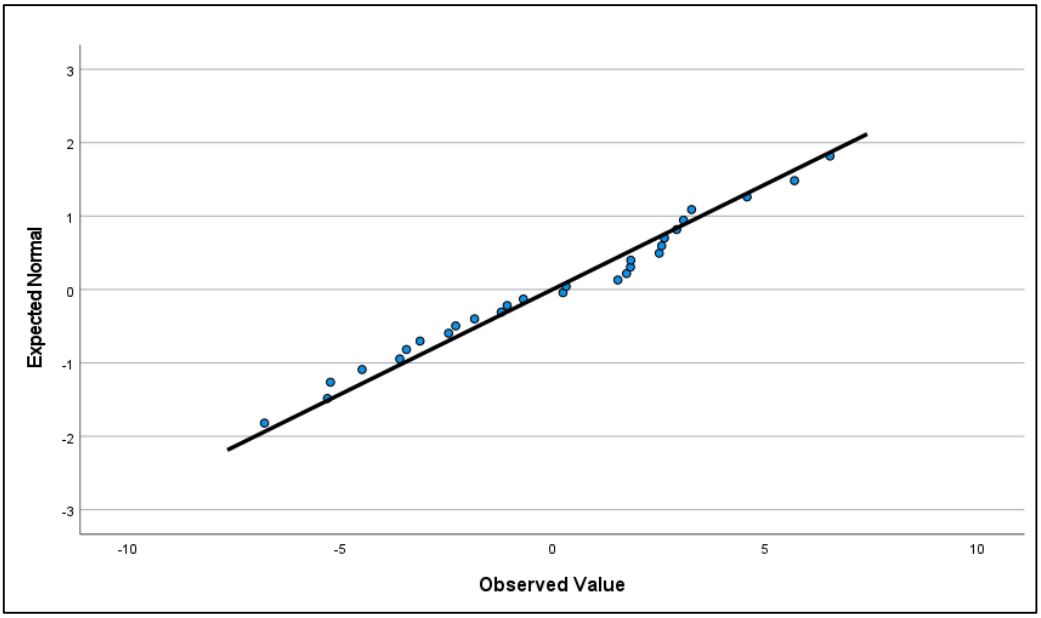
As a result, Model 2 met the residual normality condition required for the regression analyses. The distribution of the residuals for Model 2 in relation to normality was clarified through the following figures:

Figure 13: Normality histogram of unstandardized residuals (Model 2)



Source: Output generated by SPSS V27 software.

Figure 14: Normal Q-Q Plot of unstandardized residuals (Model 2)



Source: Output generated by SPSS V27 software.

1.3. Correlations analyses

Following the descriptive statistics and normality tests, this subsection presents the correlation analyses. Before proceeding with the regression analyses, these analyses examined the relationships between our research variables to evaluate the strength and direction of their linear associations. The variables under examination were the CAPEX efficiency ratios (X1 and X1_B), the control variable X2, and the dependent variable (NPM).

The hypotheses tested were as follows:

- Null Hypothesis (H_0): There is no significant linear correlation between the variables.
- Alternative Hypothesis (H_1): There is a significant linear correlation between the variables.

Hypothesis testing was conducted with a significance level of 5% (p-value < 0,05). The Pearson correlation coefficient was used because it accurately represented the linear relationship between two continuous variables.

To estimate two regression models (one with X1 and one with X1_B), correlation analysis was conducted separately for each model.

The correlation analyses findings were presented in tables and interpreted accordingly.

❖ **Model 1**

The following table presented the correlations findings for Model 1:

Table 14: Correlations (Model 1)

		X1	**X2**	**Y**
X1	Pearson Correlation	1	-0,308	0,624**
	Sig. (2-tailed)		**0,110**	**0,000**
	N	28	28	28
X2	Pearson Correlation	-0,308	1	-0,672**
	Sig. (2-tailed)	**0,110**		**0,000**
	N	28	28	28
Y	Pearson Correlation	0,624**	-0,672**	1
	Sig. (2-tailed)	**0,000**	**0,000**	
	N	28	28	28

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of correlations (Model 1) shown in Table 14:

- We found that the Pearson correlation coefficient between X1 and the dependent variable (NPM) was r = 0,624, with a p-value of 0,000 (p-value < 0,05). Thus, we rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). This finding indicated a moderately high, positive, and significant association between CAPEX efficiency ratio and NPM, implying that an increase in CAPEX efficiency ratio led to an increase in the profitability of Ooredoo Algeria.
- The Pearson correlation coefficient between X2 and the dependent variable (NPM) was r = -0,672, with a p-value of 0,000 (p-value < 0,05). Consequently, we rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). This demonstrated a moderately high, negative and significant relationship between OPEX intensity ratio and NPM, implying that an increase in OPEX intensity ratio led to a decrease in NPM.

- We observed that the Pearson correlation coefficient between X1 and X2 r = -0,308, with a p-value of 0,110 (p-value > 0,05). Therefore, we accepted the null hypothesis (H_0) and rejected the alternative hypothesis (H_1). This finding indicated that there was no statistically significant linear relationship between CAPEX efficiency ratio and OPEX intensity ratio. This result was advantageous for regression analysis since it reduced concerns about multicollinearity between the independent variable and the control variable.

As a result, we observed that X1 was positively associated with the dependent variable (NPM), but X2 had a negative association with it. Additionally, the absence of significant association between X1 and X2 strengthened our model by reducing multicollinearity concerns.

❖ **Model 2**

The following table presented the correlations findings for Model 2.

Table 15: Correlations (Model 2)

		X1_B	**X2**	**Y**
X1_B	Pearson Correlation	1	-0,516**	0,772**
	Sig. (2-tailed)		**0,005**	**0,000**
	N	28	28	28
X2	Pearson Correlation	-0,516**	1	-0,672**
	Sig. (2-tailed)	**0,005**		**0,000**
	N	28	28	28
Y	Pearson Correlation	0,772**	-0,672**	1
	Sig. (2-tailed)	**0,000**	**0,000**	
	N	28	28	28

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of correlations (Model 2) shown in Table 15:

- The Pearson correlation coefficient between X1_B and the dependent variable (NPM) was r = 0,772, with a p-value of 0,000 (p-value < 0,05). Consequently, we

rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). This outcome demonstrated a high, positive, and significant association between CAPEX efficiency ratio and NPM, indicating that an increase in CAPEX efficiency ratio was associated with a significant rise in the profitability of Ooredoo Algeria.

- We noticed that the Pearson correlation coefficient between X2 and the dependent variable (NPM) was r = -0,672, with a p-value of 0,000 (p-value < 0,01). Therefore, we rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). This result indicated a moderately high, negative, and significant association between OPEX intensity and NPM, revealing that a rise in OPEX intensity ratio tended to reduce Ooredoo Algeria's profitability.
- The Pearson correlation coefficient between X1_B and X2 was r = -0,516, with a p-value of 0,005 (p-value < 0,05). Thereby, we rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). This indicated a moderately high, negative, and significant relationship between CAPEX efficiency ratio and OPEX intensity ratio. However, the negative sign of the correlation could have been interpreted as a size effect rather than a problematic overlap between X1_B and X2.

As a result, we concluded that X1_B was highly and positively associated with the dependent variable (NPM), but X2 had a negative correlation. Although there was a moderate negative correlation between X1_B and X2, this was considered as a size effect rather than a multicollinearity issue, indicating that the model was robust.

1.4. Regression analyses

Following the presentation of descriptive statistics, normality testing, and correlation analyses, we moved on to the multiple linear regression analyses. This phase allowed us to further investigate the associations between the independent variable, the control variable, and the dependent variable (NPM) by quantifying the effect of each predictor.

The regression analyses were performed in an organized manner. First, we evaluated each model's overall goodness of fit using the R-squared values, followed by diagnostic checks for multicollinearity using tolerance and VIF statistics. After that, we applied the Durbin-Watson test to check the assumption of independent residuals and the F-test (ANOVA) to evaluate the models' overall significance.

Finally, we evaluated the regression coefficients to identify how the independent variable and the control variable influenced the dependent variable. This comprehensive approach

ensured that the models' validity and reliability were completely evaluated, yielding robust results to address our study objectives.

❖ **Model 1**

➢ **Goodness of fit (R2)**

The following table presented the goodness of fit findings for Model 1:

Table 16: Model summary (Model 1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,802[a]	**0,644**	0,615	3,95248%

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of the model summary (Model 1) shown in table 16:

- We noticed that the correlation coefficient (R) was 0,802, showing a high positive association between the explanatory variables and the dependent variable (NPM).
- The coefficient of determination (R^2) was 0,644, indicating that the model explained 64.4% of the variance in the dependent variable (NPM), and the remaining 35,6% was due to other factors.
- The Adjusted R^2 was 0,615, which adjusts R^2 for the number of predictors, confirming the model's reliability after adjusting for the complexity.
- The standard error of the estimate is 3,95248%, indicating a relatively low dispersion of the residuals around the expected values.

Based on these findings, we concluded that Model 1 provided a good fit for explaining the variation in the dependent variable (NPM).

➢ **Multicollinearity statistics**

The following table presented the multicollinearity statistics findings for Model 1:

Table 17: Multicollinearity statistics (Model 1)

Model		Tolerance	VIF
1	**X1**	0,905	1,105
	X2	0,905	1,105

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of multicollinearity statistics (Model 1) shown in table 17:

- We noticed that the tolerance values for the independent variable and the control variable (X1 and X2) were 0,905, which was much larger than the critical threshold of 0,2, indicating the absence of multicollinearity issues.
- The VIF values for X1 and X2 were both 1,105, which was significantly below the accepted limit of 4, confirming that multicollinearity was not a concern in this model.

Based on these findings, we concluded that the independent variable and the control variable in Model 1 did not exhibit multicollinearity issues, ensuring the stability and reliability of the regression estimates.

- **Autocorrelation (Durbin-Watson test)**

The following table shows the Durbin-Watson test findings for Model 1:

Table 18: Durbin-Watson test (Model 1)

Model	**Durbin-Watson**
1	1,511

Source: Prepared by the student based on the outputs of the SPSS V27 software.

Based on the results of the Durbin-Watson test (Model 1) shown in table 18:

- We noticed that the Durbin-Watson statistic for the model was 1,511.
- Given that the value was reasonably close to 2, it suggested there was no significant autocorrelation among the residuals.

As a result, we observed that Model 1 reasonably satisfied the assumption of error independence.

- **F-test (ANOVA)**

The following table presented the F-test findings for Model 1:

Table 19: ANOVA (Model 1)

Model		**Sum of Squars**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	704,991	2	352,495	22,564	**0,000[b]**
	Residual	390,552	25	15,622		

	Total	1095,543	27			

Source: Prepared by the student based on the outputs of the SPSS V27 software.

Based on the results of F-test (Model 1) shown in table 19:

- We noticed that the regression model was statistically significant at the 5% level, with an F-statistic of 22,564 and a p-value of 0,000 (p-value < 0,05).
- The very low p-value led us to reject the null hypothesis (H_0) that the independent variable and the control variable had no explanatory power over the dependent variable (NPM) and accept the alternative hypothesis (H_1).
- This result indicated that the independent variable and the control variable (X1 and X2) together significantly explained the variance in the dependent variable (NPM).

Therefore, we observed that the model had significant explanatory power and validity in predicting the dependent variable (NPM).

- **Regression coefficients**

The following table shows the regression coefficients findings for Model 1:

Table 20: Regression coefficients (Model 1)

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	**(Constant)**	**27,124**	6,444		4,209	**0,000**
	X1	**1,170**	0,319	0,460	3,667	**0,001**
	X2	**-0,551**	0,130	-0,530	-4,224	**0,000**

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of regression coefficients (Model 1) shown in table 20:

- We noticed that the constant term (intercept) was estimated at 27,124 with a p-value of 0,000 (p-value < 0,05), indicating statistical significance. This meant that when the independent variable and the control variable were equal to zero, the expected value of the dependent variable (NPM) was 27,124%.

- For X1, the unstandardized coefficient was B = 1,170 with a p-value of 0,001 (p-value < 0,05), indicating statistical significance. This suggested that a one-unit increase in X1 led to an increase of 1,170 percentage points in the dependent variable (NPM), assuming other variables remained constant.
- The corresponding t-value for X1 was 3,667, which reinforced the significance of the variable's effect on NPM.
- For X2, the unstandardized coefficient was B = -0,551 with a p-value of 0,000 (p-value < 0,05), also indicating statistical significance. This meant that a one-unit increase in X2 led to a decrease of 0,551 percentage points in the dependent variable (NPM), holding other variables constant.
- The t-value for X2 was -4.224, supporting the reliability of the negative relationship observed.

Based on these results, we concluded that both the independent variable and the control variable (X1 and X2) had a significant impact on the dependent variable (NPM), with X1 contributing positively and X2 negatively. The estimated regression equation for Model 1 was as follows:

$$NPM = 27{,}124 + 1{,}170\ (X1) - 0{,}551\ (X2) + \varepsilon$$

❖ **Model 2**

➢ **Goodness of Fit (R^2)**

The following table presented the goodness of fit findings for Model 2:

Table 21: Model summary (Model 2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	0,836[a]	**0,698**	0,674	3,63599%

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of model the summary (Model 2) shown in table 21:

- We observed that the correlation coefficient (R) was 0,836, indicating a high positive relationship between the explanatory variables and dependent variable (NPM).

- The coefficient of determination (R^2) was 0,698, indicating that the model explained 69,8% of the variance in the dependent variable (NPM), and the remaining 30,2% was due to other factors.
- The Adjusted R^2 was 0,674, which accounted for the number of predictors and improved the model's reliability while accounting for complexity.
- The standard error of the estimate was 3,63599%, indicating a relatively low dispersion of residuals around the expected values, which supported the model's accuracy.

Based on these results, we concluded that Model 2 provides a good fit for explaining the variation in the dependent variable (NPM).

- **Multicollinearity statistics**

The following table presented the multicollinearity statistics findings for Model 2:

Table 22: Multicollinearity statistics (Model 2)

Model		**Tolerance**	**VIF**
2	**X1_B**	0,734	1,363
	X2	0,734	1,363

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of multicollinearity statistics (Model 2) shown in table 22:

- We observed that the tolerance values for the independent variable and the control variable (X1_B and X2) were 0,734, which was much above the critical threshold of 0,2, indicating no multicollinearity problems.
- The VIF values for X1_B and X2 were both 1,363, which was substantially below the maximum acceptable limit of 4, confirming the absence of multicollinearity problems.

Based on these results, we concluded that the independent variables in Model 2 did not exhibit multicollinearity issues, ensuring the reliability and robustness of the regression estimates.

- **Autocorrelation (Durbin-Watson test)**

The following table shows the Durbin-Watson test findings for Model 2:

Table 23: Durbin-Watson test (Model 2)

Model	Durbin-Watson
2	1,675

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of Durbin-Watson test (Model 2) shown in table 23:

- We observed that the Durbin-Watson statistic for the model was 1,675.
- Given that the value was reasonably close to 2, it suggested that there was no significant autocorrelation among residuals.

As a result, we noticed that Model 2 adequately satisfied the assumption of error independence.

- **F-test (ANOVA)**

The following table presented the F-test (ANOVA) findings for Model 2:

Table 24: ANOVA (Model 2)

Model		Sum of Squars	Df	Mean Square	F	Sig.
2	**Regression**	765,032	2	382,516	28,934	**0,000[b]**
	Residual	330,511	25	13,220		
	Total	1095,543	27			

Source: Prepared by the student based on the outputs of SPSS V27 software.

Based on the results of F-test (Model 2) shown in table 24:

- We observed that the regression model was statistically significant at the 5% level, with an F-statistic of 28,934 and a p-value of 0,000 (p-value < 0,05).
- The extremely very low p-value prompted us to reject the null hypothesis (H_0) that independent variable and the control variable had no effect on the dependent variable (NPM) and accept the alternative hypothesis (H_1) that they did.

- This result indicated that the independent variable and the control variable (X1_B and X2) together significantly explained the variation in the dependent variable (NPM).

As a result, we found that the model exhibited significant explanatory power and strong validity in forecasting the dependent variable (NPM).

- **Regression coefficients**

The following table presented the regression coefficients findings for Model 2:

Table 25: Regression coefficients (Model 2)

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
2	**(Constant)**	**20,954**	6,463		3,242	**0,003**
	X1_B	**3,627**	0,802	0,580	4,520	**0,000**
	X2	**-0,387**	0,133	-0,373	-2,909	**0,007**

Source: Prepared by the student based on the outputs of the SPSS V27 software.

Based on the results of regression coefficients (Model 2) shown in table 25:

- We noticed that the constant term (intercept) was estimated at 20,954 with a p-value of 0,003 (p-value < 0,05), indicating that it was statistically significant. This meant that when the independent variable and the control variable were equal to zero, the expected value of the dependent variable (NPM) was 20,954%.
- For X1_B, the unstandardized coefficient was B = 3,627 with a p-value of 0.000 (p-value < 0,05), indicating statistical significance. This suggested that a one-unit increase in X1_B led to an increase of 3,627 percentage points in the dependent variable (NPM), assuming other variables remained constant.
- The t-value associated with X1_B was 4,341, which confirmed the significance of its impact on NPM.
- For X2, the unstandardized coefficient was B = -0,387 with a p-value of 0,007 (p-value < 0,05), indicating statistical significance. This indicated that a one-unit

increase in X2 resulted in a decrease of 0,387 percentage points in the dependent variable (NPM), holding other variables constant.

- The t-value for X2 was -2,918, supporting the reliability of its negative effect on NPM.

Based on these findings, we concluded that the independent variable and the control variable (X1_B and X2) had a significant effect on the dependent variable (NPM), with X1_B showing a positive impact and X2 a negative impact. The estimated regression equation for Model 2 was as follows:

$$NPM = 20{,}954 + 3{,}627\ (X1\_B) - 0{,}387\ (X2) + \varepsilon$$

1.5. Summary of results and comparison of the two econometric models

In this subsection, we summarized the main empirical findings and compared the two regression models estimated to evaluate the effect of CAPEX on Ooredoo Algeria's financial performance.

1.5.1 Summary of results

First, the descriptive statistics revealed that the dependent variable (NPM) had a mean of 5,19%, a minimum of -5,28%, and a maximum of 17,71%. The Shapiro-Wilk test confirmed NPM's normality (p-value = 0,649 > 0,05). Furthermore, the residuals from both Model 1 and Model 2 were normally distributed (p-values of 0,271 and 0,673, respectively), confirming the regression analysis assumptions.

The correlation analysis in Model 1 showed that X1 had a moderately high, positive, and significant correlation with NPM (r = 0,624, p-value = 0,000 < 0,05), while X2 had a moderately, high, negative and significant correlation (r = -0,672, p-value = 0,000 < 0,05). In Model 2, the alternative measure X1_B was more significantly associated with NPM (r = 0,772, p-value = 0,000 < 0,05), whereas X2 maintained a moderately, high, negative and significant association with NPM (r = -0,672, p-value = 0,000 < 0,05).

It is worth noting that Model 2 revealed a moderately, high, negative and significant correlation between X1_B and X2 (r = -0,516, p-value = 0,005 < 0,05), raising concerns about multicollinearity. However, the negative sign of the correlation could be understood as a size effect rather than a problematic overlap between the independent variable and the control variable. To ensure robustness, we examined multicollinearity using the Variance Inflation Factor (VIF) and tolerance values in both models.

The results of the multicollinearity statistics showed that VIF values for the independent variable and the control variable were less than the critical limit of 4 (VIF = 1,105 in Model 1 and VIF = 1,363 in Model 2), and that tolerance values were well above the critical threshold of 0,2 (tolerance = 0,905 in Model 1 and tolerance = 0,734 in Model 2), indicating that multicollinearity was not a serious problem in either model.

The regression findings for Model 1 indicated an R-squared of 0,644, suggesting that X1 and X2 account for approximately 64,4% of the variation in NPM. The model demonstrated statistical significance (F = 22,564, p-value = 0,000 < 0,05). The Durbin-Watson statistic was 1,511, which was close to 2, indicating no significant autocorrelation issue. The unstandardized coefficients showed that X1 had a positive and significant effect on NPM (B = 1,170, p = 0,001 < 0,05), whereas X2 had a negative and significant effect (B = -0.551, p = 0.000 < 0.05).

For Model 2, where we included the alternative measure X1_B, the R-squared increased to 0,698, indicating that the model explained 69,8% of the variance in NPM. The model was also statistically significant (F = 28,934, p-value = 0,000 < 0,05). The Durbin-Watson statistic was 1,675, which was close to 2, indicating no significant autocorrelation issue. The unstandardized coefficients showed that X1_B had a positive and significant effect on NPM (B = 3,627, p = 0,000 < 0,05), whereas X2 had a negative and significant effect (B = -0,387, p = 0,007 < 0,05).

As a result, both models indicated that improving CAPEX efficiency (via X1 or X1_B) improved Ooredoo Algeria's financial performance, whereas increasing OPEX intensity had a negative impact.

1.5.2 Comparison of the two econometric models

When comparing the two models, we reached the following findings:

- **Model fit:** Model 2 had a higher R-squared (0,698) than Model 1 (0,644), showing a higher explanatory power.
- **Predictive power:** Model 2 had a higher F-statistic (28,934 vs. 22,564), indicating a stronger global significance.
- **Coefficient strength:** The unstandardized coefficient for X1_B (B = 3,627) was larger than that of X1 (B = 1,170), indicating that the alternative measure of CAPEX efficiency had a stronger positive effect on NPM.

- **Multicollinearity:** Despite the moderate correlation between X1_B and X2, the absence of high VIFs values in both models and the presence of a negative correlation suggested a size effect rather than a multicollinearity issue.
- **Autocorrelation:** Both models showed acceptable Durbin-Watson statistics (1,511 in Model 1 and 1,675 in Model 2).
- **Residual Normality:** The two models satisfied the residual normality assumption.

Based on these results, Model 2, which used an alternative measure of CAPEX efficiency (X1_B), provided a more robust and reliable explanation of the variation in the financial performance of Ooredoo Algeria.

Section 2: Discussion

In this section, we analyze and interpret the findings from our empirical research. We begin by validating the research hypotheses, followed by discussing the implications of our results, and finally comparing our findings with our literature review.

2.1. Validity of research hypotheses

In this subsection, we assess the validity of the study hypotheses using the results from Model 2. The validation process is based on the statistical significance of the unstandardized regression coefficients, Pearson correlation coefficients, and their respective p-values. Each hypothesis is evaluated using these indicators to determine whether it should be accepted or rejected. To validate the main hypothesis (H_1), both subsidiary hypotheses (H_1a and H_1b) must be accepted individually.

The following table highlights the validation of the research hypotheses:

Table 26: Validity of research hypotheses

Hypothesis	**Validation**	**Evidence**
H_1: Capital expenditure has a positive impact on the financial performance of Ooredoo Algeria.	Validated	H_1a and H_1b are validated
H_1a: Capital expenditure has a significant positive impact on the financial performance of Ooredoo Algeria.	Accepted	(B = 3,627, p-value = 0,000 < 0,05); (r = 0,722, p-value = 0,000 < 0,05)
H_1b: Capital expenditure has a significant immediate impact on the financial performance of Ooredoo Algeria.	Accepted	(B =3,627, p-value = 0,000 < 0,05); (r = 0,722, p-value = 0,000 < 0,05)

Source: Prepared by the student.

Based on the findings presented in table 26, since both subsidiary hypotheses (H_1a and H_1b) are accepted, the main hypothesis (H_1) is validated. Therefore, we find that CAPEX has a significant positive and immediate effect on the financial performance of Ooredoo Algeria.

Since we accepted the first subsidiary hypothesis (H_1a), we respond positively to the first subsidiary research question (Q1): “Does capital expenditure have a significant positive impact on the financial performance of Ooredoo Algeria?”

Likewise, by accepting the second subsidiary hypothesis (H_1b), we answer affirmatively the second subsidiary research question (Q2): “Does capital expenditure have a significant immediate impact on the financial performance of Ooredoo Algeria?”

As a result, the empirical evidence presented fully supports and validates our research hypotheses.

2.2. Discussion of the results

In this subsection, we discuss the implications of our findings and relate them to the practical context of Ooredoo Algeria. The types of capital expenditures discussed were adopted from our study’s conceptual framework, which was based on (Rachlin, 1997).

Between 2016 and 2017, Ooredoo Algeria shifted from 3G to 4G technology. This transition necessitated substantial investments, mainly in improving existing infrastructure rather than acquiring entirely new assets. To ensure operational continuity, a major part of CAPEX was allocated to upgrading mobile antennas, modernizing transmission equipment, reinforcing data centers, strengthening the fiber-optic backbone, and maintaining existing fixed assets. These projects were crucial for improving network stability, expanding 4G coverage, and ensuring excellent service quality.

This strategic focus on upgrading and maintaining fixed assets is consistent with a cost-optimization financial strategy, allowing the company to maximize the efficiency of its CAPEX. Instead of engaging in heavy and costly new investments, Ooredoo Algeria chose to improve, modernize, and maintain the existing network assets to fulfil the growing demand for faster and more reliable mobile services.

The findings of our study, which spans the period from 2017 to 2023, demonstrate that this strategy had a significant and immediate positive impact on financial performance. The observed improvements can be linked to three primary types of capital expenditure:

- **Quality improvement projects:** include upgrading antennas, enhancing network stability, and reinforcing crucial infrastructure for 4G deployment.
- **Revenue enhancement and service optimization projects:** aimed at improving 4G coverage and data transmission capacity, resulting to better customer satisfaction and increased revenue.

- **Network maintenance and infrastructure upgrades:** Focusing on maintaining and enhancing the reliability of the existing mobile network, data centers, and optical fiber transmission systems.

As a result, our findings demonstrate that targeted and strategic CAPEX in crucial infrastructure was a key driver of Ooredoo Algeria's financial performance during our study period.

2.3. Comparison with the literature review

Following the validity of research hypotheses and a discussion of the results, we compare our results with our literature review. Specifically, we selected studies from the telecommunications sector that, like our study, employed quarterly financial data, enabling an analysis of the immediate effect of capital expenditure on financial performance.

Our findings demonstrate that CAPEX has a significant and immediate positive influence on the financial performance of Ooredoo Algeria, as measured through NPM. This finding is similar with (Faisel et al., 2021) study, who analyzed the influence of CAPEX efficiency on PT. Telkomsel's financial performance using quarterly data from 2012 to 2018. The study employed NPM as a key indicator of financial performance and found that efficient CAPEX significantly improved financial performance, reinforcing the importance of targeted investment in the telecoms sector.

Similarly, Firli et al. (2015) found that increasing CAPEX had a positive and significant effect on financial performance in the Indonesian telecoms sector.

As a result, the consistency of our results with previous studies indicates the robustness of the positive association between capital expenditure and financial performance in the telecom sector context.

Conclusion

In conclusion, this chapter's findings demonstrated that CAPEX has a significant, positive, and immediate influence on Ooredoo Algeria's financial performance. The findings validated our main research hypothesis and showed consistency with previous studies in the telecoms sector. These findings emphasized the strategic importance of well-targeted and efficient CAPEX in improving financial performance in a highly competitive sector like telecoms.

CONCLUSION

This study examined the impact of CAPEX on the financial performance of Ooredoo Algeria, a key player in the Algerian telecommunications sector. The objective was to assess whether CAPEX has a significant positive and immediate effect on the financial performance, measured by NPM. To achieve this, we formulated a main hypothesis with two sub-hypotheses and adopted a quantitative method grounded in a post-positivist epistemological paradigm. The analyses were based entirely on secondary data collected from the company's quarterly financial statements between 2017 and 2023. Two regression models were constructed using OLS method to evaluate the relationship between CAPEX and financial performance, while controlling for OPEX.

The results of the regression analyses confirmed the validity of all proposed hypotheses. CAPEX had a significant positive and immediate impact on the financial performance of Ooredoo Algeria. These findings confirmed the importance of allocating CAPEX efficiently, even when the expected returns are evaluated over short-term financial cycles. It also suggested that, despite the capital-intensive nature of the sector, short-term profitability can still be achieved through carefully planned and executed investment strategies.

These findings had practical implications for financial managers and strategic decision-makers. They highlighted the importance of aligning CAPEX decisions with financial performance objectives and reinforced the value of integrating financial performance indicators into the capital budgeting process. The results also emphasized the need for companies in the telecommunications sector to better monitor the short-term returns of their fixed asset investments and ensure that these investments were strategically managed to support both competitiveness and profitability.

Based on the results of this study, several recommendations were proposed for Ooredoo Algeria. First, the company should continue to prioritize CAPEX projects with high efficiency ratios. Special attention should be given to the modernization, enhancement, and upgrading of existing fixed assets, especially in critical areas such as network infrastructure. Second, it was essential to integrate profitability metrics, such as NPM, into the project evaluation and post-investment review process. Finally, a strategy of cost optimization could further reinforce the financial impact of CAPEX and support sustainable profitability.

However, this research faced several limitations. The sample size was relatively small, limited to 28 quarterly observations, which constrained the statistical depth of the analyses. As a result, we were unable to perform time series stationarity tests such as the Augmented

Dickey-Fuller (ADF) test, which typically require larger datasets. Additionally, we were unable to integrate other relevant external control variables such as exchange rate fluctuations, market share, or inflation rate due to data unavailability. Another limitation was the lack of access to detailed internal information identifying which specific fixed asset investments were responsible for the observed financial effects. Despite this, and through our efforts, we were able to suggest in the discussion section the most likely types of investments that contributed to the observed results. The research was also limited to a single company, and we were unable to adopt a qualitative method, such as conducting interviews, due to the unavailability of financial managers and managers responsible for CAPEX decision-making. This was primarily because of time constraints on their end and the difficulty of securing formal appointments.

Future studies can build upon this research in several directions. Researchers can analyze additional financial performance indicators such as ROA, ROE, ROI, or EBITDA margin to assess which indicators are more sensitive to CAPEX in the short and long term. A sector-wide research that includes multiple companies would allow for more generalizable results, especially if supported by a larger dataset. Future studies are also encouraged to integrate a wider set of macroeconomic and firm-level control variables, provided the data is available. Qualitative methods, such as interviews with financial managers or investment decision-makers, could also provide deeper insights into how CAPEX strategies are formulated and evaluated. Finally, more focused studies on specific types of investments, such as network coverage expansion or network infrastructure upgrades, may offer a clearer understanding of which categories of CAPEX deliver the most substantial financial impact.

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APPENDICES

APPENDIX A: CASH FLOW STATMENTS

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2017) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	4 000 745	3 159 359	3 822 362	1 793 763
	-	-	-	-
Non-Cash Items	-	-	-	-
Add: Depreciation	4 431 539	4 447 308	4 713 673	4 690 180
Amortization	559 022	559 022	559 022	559 022
Deferred Taxes	(447 462)	487 563	(1 287 219)	1 762
Unrealized Exchange Rate Variance	-	(0)	-	(0)
Changes in Working Capital	(4 123 311)	(4 201 297)	1 814 936	485 580
	-	-	-	-
Cash Flow From Operations	4 420 533	4 451 955	9 622 776	7 530 308
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(818 953)	(2 161 542)	(2 136 880)	(993 450)
Intangible Assets	-	-	-	-
Other	15 254	15 140	15 140	15 140
	-	-	-	-
Total Investing Activities	(803 699)	(2 146 401)	(2 121 740)	(978 310)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Other Long Term Debt	(1 635 187)	(1 635 188)	(1 635 188)	(9 811 125)
Other Short Term Debt	-	-	-	-
Other Short Term Deposit	(8 500 000)	467 500	212 500	(1 402 500)
	-	-	-	-
	-	-	-	-
Total Financing Activities	(10 135 187)	(1 167 688)	(1 422 688)	(11 213 625)
	-	-	-	-
Dividendes	(2 679 528)	-	-	-
	-	-	-	-
Increase (Decrease) in Cash Position	(9 197 881)	1 137 867	6 078 349	(4 661 627)
Translation Adjustment	-	-	-	-
Cash Beginning Period	42 831 321	27 785 037	29 384 119	42 621 912
	-	-	-	-
Cash End-Period	33 633 441	28 922 904	35 462 467	37 960 286

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2018) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	1 979 183	727 998	730 493	449 894
	-	-	-	-
Non-Cash Items	-	-	-	-
Add: Depreciation	4 435 961	4 434 158	4 501 744	4 393 513
Amortization	559 022	559 022	559 022	559 022
Deferred Taxes	908 597	(548 412)	247 593	(979 879)
Unrealized Exchange Rate Variance	-	(0)	-	-
Changes in Working Capital	(2 501 560)	(788 633)	3 172 874	(1 089 704)
	-	-	-	-
Cash Flow From Operations	5 381 203	4 384 134	9 211 727	3 332 847
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(2 599 935)	(4 037 063)	(3 823 009)	(4 543 951)
Intangible Assets	-	-	-	-
Other	(656 765)	14 417	(384 030)	32 147
	-	-	-	-
Total Investing Activities	(3 256 700)	(4 022 646)	(4 207 038)	(4 511 804)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Other Long Term Debt	(1 635 188)	(1 635 187)	(1 635 188)	-
Other Short Term Debt	-	-	-	281 252
	-	-	-	-
	-	-	-	-
Total Financing Activities	(1 635 188)	(1 635 187)	(1 635 188)	281 252
	-	-	-	-
Dividendes	(8 499 603)	-	(8 499 603)	-
	-	-	-	-
Increase (Decrease) in Cash Position	(8 010 288)	(1 273 700)	(5 130 102)	(897 705)
Translation Adjustment	-	-	-	-
Cash Beginning Period	56 279 799	32 043 164	26 877 010	14 342 288
	-	-	-	-
Cash End-Period	48 269 511	30 769 464	21 746 908	13 444 583
	-	-	-	-

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2019) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	1 604 860	74 228	96 929	(412 765)
	-	-	-	-
Non-Cash Items	-	-	-	-
Add: Depreciation	4 473 883	4 943 316	5 084 983	5 613 323
Amortization	261 896	113 332	113 332	113 332
Deferred Taxes	(248 401)	(195 877)	(233 460)	(61 092)
Unrealized Exchange Rate Variance	-	-	-	-
Changes in Working Capital	1 316 940	(1 475 044)	1 335 720	1 097 195
	-	-	-	-
Cash Flow From Operations	7 409 178	3 459 954	6 397 504	6 349 992
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(4 910 383)	(4 355 828)	(2 878 351)	(4 010 388)
Intangible Assets	0	-	-	-
Other	(47 052)	77 104	73 700	(118 621)
Capitalized leasing cost	(11 432 723)	(2 435 648)	(322 480)	(1 728 316)
	-	-	-	-
Total Investing Activities	(16 390 157)	(6 714 371)	(3 127 130)	(5 857 325)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Other Long Term Debt	7 917 118	2 293 558	95 733	786 097
Other Short Term Debt	(1 324 731)	1 418 405	1 593 186	(376 942)
Principal payment of lease liability	-	-	-	-
	-	-	-	-
	-	-	-	-
Total Financing Activities	6 592 388	3 711 964	1 688 919	409 155
	-	-	-	-
Dividendes	-	-	(5 949 722)	-
	-	-	-	-
Increase (Decrease) in Cash Position	(2 388 592)	457 547	(990 429)	901 822
Translation Adjustment	-	-	-	-
Cash Beginning Period	10 137 841	7 231 869	7 906 701	6 814 774
	-	-	-	-
Cash End-Period	7 749 250	7 689 416	6 916 271	7 716 596

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2020) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	50 558	(94 016)	910 229	(841 108)
	-	-	-	-
Non-Cash Items	-	-	-	-
Depreciation	5 185 255	4 813 746	4 498 264	5 171 888
Amortization	113 332	113 333	113 333	113 332
Deferred Taxes	64 591	26 312	368 525	304 627
Unrealized Exchange Rate Variance	-	-	-	-
Changes in Working Capital	(2 381 286)	(272 265)	1 933 811	5 523 443
	-	-	-	-
Cash Flow From Operations	3 032 450	4 587 109	7 824 163	10 272 182
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(2 713 524)	(2 817 181)	(2 358 508)	(8 701 806)
Intangible Assets	-	-	-	-
Other Capitalized Activities	118 994	109 435	146 065	101 060
Capitalized leasing cost	-	-	-	-
	-	-	-	-
Total Investing Activities	(2 594 530)	(2 707 746)	(2 212 443)	(8 600 746)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Other Long Term Debt	-	743 750	2 624 375	1 370 625
Other Short Term Debt	(601 124)	(1 789 996)	(2 534 488)	(2 335 066)
Principal payment of lease liability	(552 693)	(858 963)	(636 655)	(618 258)
	-	-	-	-
	-	-	-	-
Total Financing Activities	(1 153 818)	(1 905 210)	(546 768)	(1 582 698)
	-	-	-	-
Dividendes	-	-	(1 363 739)	-
	-	-	-	-
Increase (Decrease) in Cash Position	(715 898)	(25 846)	3 701 213	88 737
Translation Adjustment	-	-	-	-
Cash Beginning Period	8 669 811	6 576 032	8 139 714	15 048 498
	-	-	-	-
Cash End-Period	7 953 913	6 550 185	11 840 927	15 137 235

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2021) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	(446 864)	1 270 661	829 496	(260 912)
	-	-	-	-
Non-Cash Items	-	-	-	-
Depreciation	5 588 016	4 693 246	4 995 757	5 462 986
Amortization	113 332	113 333	113 333	113 333
Deferred Taxes	393 497	(350 910)	(301 186)	(482 107)
Unrealized Exchange Rate Variance	-	-	-	-
Changes in Working Capital	(5 407 215)	(1 996 314)	2 250 467	3 771 077
	-	-	-	-
Cash Flow From Operations	240 766	3 730 016	7 887 868	8 604 377
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(1 250 629)	(1 768 216)	(1 369 101)	(5 235 771)
Intangible Assets	-	-	-	-
Other Capitalized Activities	93 344	260 034	346 712	-
Capitalized leasing cost	-	-	-	-
	-	-	-	-
Total Investing Activities	(1 157 285)	(1 508 182)	(1 022 389)	(5 235 771)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Dismantling Provision	725 716	382 662	10 980	33 584
Other Long Term Debt	488 750	(403 750)	(382 106)	(4 420 000)
Other Short Term Debt	573 750	85 000	85 000	127 500
Principal payment of lease liability	(661 411)	(787 513)	(775 755)	(734 277)
	-	-	-	-
	-	-	-	-
Total Financing Activities	1 126 806	(723 601)	(1 061 881)	(4 993 193)
	-	-	-	-
Dividendes	-	-	(3 824 821)	-
	-	-	-	-
Increase (Decrease) in Cash Position	210 287	1 498 233	1 978 777	(1 624 586)
Translation Adjustment	-	-	-	-
Cash Beginning Period	17 515 092	22 366 745	28 007 806	30 998 477
	-	-	-	-
Cash End-Period	17 725 380	23 864 978	29 986 583	29 373 891

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2022) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	1 088 345	959 288	959 288	(964 958)
	-	-	-	-
Non-Cash Items	-	-	-	-
Depreciation	4 457 514	5 095 600	5 095 600	5 469 614
Amortization	113 333	113 333	113 333	113 333
Deferred Taxes	672 754	(186 316)	(186 316)	(411 558)
Unrealized Exchange Rate Variance	-	-	-	-
Changes in Working Capital	(2 046 188)	(592 953)	(592 953)	6 027 092
	-	-	-	-
Cash Flow From Operations	4 285 759	5 388 952	5 388 952	10 233 524
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(2 577 156)	(3 052 352)	(3 052 352)	(6 982 662)
Intangible Assets	-	-	-	-
Other Capitalized Activities	(850)	(255)	(255)	-
Capitalized leasing cost	-	-	-	-
	-	-	-	-
Total Investing Activities	(2 578 006)	(3 052 607)	(3 052 607)	(6 982 662)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Dismantling Provision	34 573	35 591	35 591	37 717
Other Long Term Debt	-	-	-	-
Other Short Term Debt	(1 487 500)	(255 000)	(255 000)	-
Principal payment of lease liability	(869 948)	(956 173)	(956 173)	(687 529)
	-	-	-	-
	-	-	-	-
Total Financing Activities	(2 322 875)	(1 175 583)	(1 175 583)	(649 812)
	-	-	-	-
Dividendes	-	-	-	-
	-	-	-	-
Increase (Decrease) in Cash Position	(615 122)	1 160 762	1 160 762	2 601 050
Translation Adjustment	-	-	-	-
Cash Beginning Period	23 873 630	25 554 910	25 554 910	28 438 496
	-	-	-	-
Cash End-Period	23 258 508	26 715 672	26 715 672	31 039 546

Cash Flow

Wataniya Telecom Algeria
Period: Q1 To Q4 (2023) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Operating Activities				
Net Earnings (Loss)	2 535 513	1 881 399	2 450 709	234 283
	-	-	-	-
Non-Cash Items	-	-	-	-
Depreciation	4 454 871	4 450 409	4 970 000	6 461 746
Amortization	113 333	113 333	113 333	113 333
Deferred Taxes	187 048	203 016	200 212	(816 598)
Unrealized Exchange Rate Variance	-	-	-	-
Changes in Working Capital	(3 171 477)	(3 406 725)	2 788 794	10 537 199
	-	-	-	-
Cash Flow From Operations	4 119 289	3 241 432	10 523 048	16 529 963
	-	-	-	-
Investing Activities	-	-	-	-
Fixed Assets	(2 156 518)	(1 807 926)	(4 200 647)	(7 701 431)
Intangible Assets	-	-	-	-
Other Capitalized Activities	-	-	-	-
Capitalized leasing cost	-	-	-	-
	-	-	-	-
Total Investing Activities	(2 156 518)	(1 807 926)	(4 200 647)	(7 701 431)
	-	-	-	-
Financing Activities	-	-	-	-
Share Issue	-	-	-	-
Due on Licence	-	-	-	-
Dismantling Provision	38 827	39 970	41 146	(119 942)
Other Long Term Debt	-	-	-	-
Other Short Term Debt	-	-	-	-
Principal payment of lease liability	(867 646)	(1 136 399)	(969 391)	(1 599 937)
	-	-	-	-
	-	-	-	-
Total Financing Activities	(828 819)	(1 096 430)	(928 245)	(1 719 880)
	-	-	-	-
Dividendes	0	0	(7 819 635)	-
	-	-	-	-
Increase (Decrease) in Cash Position	1 133 952	337 076	(2 425 479)	7 108 652
Translation Adjustment	-	-	-	-
Cash Beginning Period	30 546 793	38 811 264	39 134 328	39 370 201
	-	-	-	-
Cash End-Period	31 680 745	39 148 340	36 708 850	46 478 853

APPENDIX B: INCOME STATEMENTS

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2017) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	53 020	54 270	51 074	88 998
Monthly Fee	1 015 287	1 992 344	1 833 957	2 058 718
Airtime Post paid	366 580	335 223	323 337	271 811
Airtime Pre paid	13 207 304	11 697 639	11 777 252	11 079 129
Value Added Services	4 767 620	4 885 634	5 530 871	4 923 504
Roaming	273 531	280 725	328 903	197 018
Interconnection Revenue	2 268 909	2 280 317	2 587 277	2 095 693
Equipment Revenue	419 798	132 743	213 603	213 661
Other	10 283	3 789	3 681	(2 097)
New Business Revenue	201 769	192 167	238 600	281 897
	-	-	-	-
Total Revenue	22 584 100	21 854 850	22 888 554	21 208 334
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	2 224 132	2 196 431	2 215 402	1 643 910
Cost of Equipments	430 303	151 627	196 003	138 875
Cost of Sims & Others	365 966	321 975	296 882	221 488
Sales Commissions	1 079 166	1 004 628	1 339 877	1 176 002
Total Cost Of Sales	4 099 567	3 674 662	4 048 164	3 180 275
	-	-	-	-
Gross Margin	18 484 533	18 180 189	18 840 390	18 028 059
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	1 489 405	1 494 729	1 390 007	1 326 508
Frequency Fees	632 141	645 378	658 260	414 596
Lease Lines	392 075	389 474	441 479	397 141
Network Maintenance & Rentals	1 401 783	1 391 270	1 271 681	1 277 885
Universal Service Obligation	705 020	681 880	717 502	710 610
Advertising & Promotions	601 995	864 714	541 243	(112 231)
Consulting & Legal	63 301	81 220	58 365	(5 022)
Information Technology (IT) Cost	347 011	361 122	376 543	277 267
Occupancy Costs	456 806	462 661	470 505	292 556
Customer Care	95 448	81 709	85 579	92 988
Bad Debt	101 823	99 134	197 495	2 511 380
Other Operating Expenses	130 114	140 963	136 818	558 153
TAP & Other Taxes	1 852 579	1 812 602	1 731 240	2 027 550
Total Operating Expenditure	8 269 502	8 506 857	8 076 716	9 769 381
	-	-	-	-
EBITDAM	10 215 030	9 673 332	10 763 674	8 258 678
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	10 215 030	9 673 332	10 763 674	8 258 678
	-	-	-	-
	-	-	-	-
Depreciation	4 431 539	4 447 308	4 713 674	4 690 180
Amortization	559 022	559 022	559 022	559 022
	-	-	-	-
EBIT	5 224 470	4 667 002	5 490 978	3 009 475
	-	-	-	-
Financial Income	(53 499)	(76 460)	(85 762)	(119 310)
Financial Expenses	373 627	352 398	342 664	385 003
Foreign Exchange (Gain) Loss	(25 060)	7 130	65 603	(752)
(Gain) Loss on disposal of fixed assets	-	-	-	-
Other non Operating Revenue/Expense	(2 011)	(1 407)	(4 598)	(7 977)
	-	-	-	-
EBT	4 931 412	4 385 340	5 173 071	2 752 511
Income Taxes	930 668	1 225 981	1 350 708	958 749
	-	-	-	-
Net Earnings (Loss)	4 000 744	3 159 359	3 822 363	1 793 763

WTA Income Statement

Wataniya Telecom Algeria

Period: Q1 To Q4 (2018) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	50 416	76 603	106 500	64 440
Monthly Fee	1 843 641	1 789 026	1 401 251	1 810 721
Airtime Post paid	230 097	199 775	163 384	132 607
Airtime Pre paid	8 684 335	7 989 356	8 031 645	6 885 944
Value Added Services	6 128 349	5 607 193	6 283 116	6 214 483
Roaming	253 812	255 961	277 175	222 603
Interconnection Revenue	1 958 775	1 873 184	2 047 874	1 903 341
Equipment Revenue	218 599	99 459	489 990	509 993
Other	4 845	3 037	4 553	12 092
New Business Revenue	144 264	138 903	353 850	608 742
	-	-	-	-
Total Revenue	19 517 133	18 032 496	19 159 338	18 364 966
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 726 492	1 706 214	1 897 000	1 577 579
Cost of Equipments	213 206	99 575	476 148	437 345
Cost of Sims & Others	170 006	260 814	286 176	337 225
Sales Commissions	1 146 199	1 349 861	1 458 762	1 635 364
Total Cost Of Sales	3 255 904	3 416 464	4 118 087	3 987 512
	-	-	-	-
Gross Margin	16 261 229	14 616 032	15 041 251	14 377 454
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	1 165 394	1 361 431	1 671 375	1 549 191
Frequency Fees	619 008	623 272	624 119	561 207
Lease Lines	453 985	443 440	448 493	489 484
Network Maintenance & Rentals	1 535 087	1 457 615	1 512 217	1 354 122
Universal Service Obligation	662 567	572 920	633 064	589 545
Advertising & Promotions	547 443	627 038	570 311	680 621
Consulting & Legal	31 848	31 266	39 768	84 355
Information Technology (IT) Cost	438 622	360 696	349 266	342 311
Occupancy Costs	375 658	433 751	436 875	385 849
Customer Care	94 593	79 789	84 588	99 330
Bad Debt	170 641	125 885	62 096	10 571
Other Operating Expenses	255 942	275 316	134 382	161 152
TAP & Other Taxes	1 757 011	1 470 038	1 729 005	1 768 142
Total Operating Expenditure	8 107 800	7 862 457	8 295 559	8 075 881
	-	-	-	-
EBITDAM	8 153 429	6 753 575	6 745 692	6 301 573
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	8 153 429	6 753 575	6 745 692	6 301 573
	-	-	-	-
	-	-	-	-
Depreciation	4 435 961	4 434 158	4 501 744	4 393 513
Amortization	559 022	559 022	559 022	559 022
	-	-	-	-
EBIT	3 158 446	1 760 395	1 684 926	1 349 037
	-	-	-	-
Financial Income	(47 557)	(8 701)	-	(29)
Financial Expenses	180 803	158 768	155 440	119 892
Foreign Exchange (Gain) Loss	(61 170)	9 589	8 370	(19 747)
(Gain) Loss on disposal of fixed assets	-	-	-	-
Other non Operating Revenue/Expense	(3 734)	(2 719)	(433)	(2 853)
	-	-	-	-
EBT	3 090 104	1 603 457	1 521 547	1 251 774
Income Taxes	1 110 921	875 462	791 055	801 881
	-	-	-	-
Net Earnings	1 979 183	727 996	730 492	449 893

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2019) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	42 642	36 137	33 581	37 578
Monthly Fee	1 716 334	1 717 134	1 625 912	1 615 064
Airtime Post paid	128 607	102 711	106 137	93 847
Airtime Pre paid	5 960 544	6 431 768	6 448 923	6 056 621
Value Added Services	6 753 386	5 982 039	6 647 462	6 549 949
Roaming	177 211	152 658	233 920	320 559
Interconnection Revenue	1 839 348	1 803 133	1 890 474	1 924 178
Equipment Revenue	629 444	382 407	216 610	99 663
Other	17 525	8 182	14 231	23 868
New Business Revenue	581 024	458 472	332 788	494 908
Total Revenue	17 846 065	17 074 641	17 550 039	17 216 234
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 358 708	1 498 378	1 905 399	1 723 395
Cost of Equipments	651 285	316 775	261 399	135 429
Cost of Sims & Others	433 188	390 851	398 418	403 466
Sales Commissions	1 279 113	1 339 110	1 622 620	1 354 867
Total Cost Of Sales	3 722 294	3 545 114	4 187 836	3 617 157
	-	-	-	-
Gross Margin	14 123 771	13 529 527	13 362 204	13 599 077
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	989 003	1 394 902	1 494 201	1 630 823
Frequency Fees	656 974	659 789	661 942	693 737
Lease Lines	518 089	565 544	574 797	646 021
Network Maintenance & Rentals	1 069 053	1 003 038	962 165	997 460
Universal Service Obligation	578 856	546 565	544 161	769 471
Advertising & Promotions	562 646	895 915	510 315	(6 044)
Consulting & Legal	39 799	53 460	95 803	181 175
Information Technology (IT) Cost	399 028	372 094	364 653	382 857
Occupancy Costs	232 817	278 366	253 988	320 255
Customer Care	101 732	101 742	110 508	105 924
Bad Debt	36 102	110 635	138 058	(85 827)
Other Operating Expenses	178 467	450 256	347 119	581 605
TAP & Other Taxes	1 542 418	1 563 911	1 614 424	1 642 768
Total Operating Expenditure	6 904 984	7 996 219	7 672 134	7 860 225
	-	-	-	-
EBITDAM	7 218 787	5 533 309	5 690 070	5 738 853
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	7 218 787	5 533 309	5 690 070	5 738 853
	-	-	-	-
	-	-	-	-
Depreciation	4 473 883	4 943 316	5 084 983	5 383 465
Amortization	261 896	113 333	113 333	113 332
	-	-	-	-
EBIT	2 483 008	476 659	491 754	242 056
	-	-	-	-
Financial Income	(81)	-	-	(43)
Financial Expenses	259 698	333 667	167 142	231 564
Foreign Exchange (Gain) Loss	(57 694)	67 146	110 875	10 981
(Gain) Loss on disposal of fixed assets	-	-	5 146	-
Other non Operating Revenue/Expense	(3 020)	(566)	(3 002)	(958)
	-	-	-	-
EBT	2 284 105	76 411	211 593	511
Income Taxes	679 244	2 185	114 664	186 354
	-	-	-	-
Net Earnings	1 604 861	74 227	96 929	(185 843)

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2020) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	41 425	28 438	21 635	28 121
Monthly Fee	1 710 712	1 642 269	1 697 697	1 947 249
Airtime Post paid	93 221	67 460	84 691	82 893
Airtime Pre paid	6 157 392	5 060 448	5 932 287	6 049 844
Value Added Services	7 418 033	6 681 654	7 000 060	7 045 602
Roaming	180 892	78 943	103 645	107 832
Interconnection Revenue	2 054 426	1 931 409	2 149 318	1 893 419
Equipment Revenue	48 193	58 432	43 993	69 938
Other	17 826	19 829	89 299	35 355
New Business Revenue	121	48	48	27
	-	-	-	-
Total Revenue	17 722 240	15 568 930	17 122 674	17 260 281
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 717 467	1 504 945	1 570 820	1 362 856
Cost of Equipments	81 495	81 237	53 895	75 370
Cost of Sims & Others	399 691	362 647	335 040	297 321
Sales Commissions	1 446 912	1 278 553	1 385 225	1 411 719
Total Cost Of Sales	3 645 564	3 227 381	3 344 980	3 147 266
	-	-	-	-
Gross Margin	14 076 676	12 341 549	13 777 694	14 113 015
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	1 557 231	1 533 084	1 673 166	1 719 335
Frequency Fees	624 673	724 091	726 950	698 807
Lease Lines	747 769	777 929	807 629	1 124 627
Network Maintenance & Rentals	1 071 318	1 066 217	1 022 057	995 691
Universal Service Obligation	776 453	544 938	542 000	604 136
Advertising & Promotions	237 077	356 713	224 195	557 242
Consulting & Legal	44 862	121 824	32 881	(16 850)
Information Technology (IT) Cost	367 832	365 910	385 829	358 182
Occupancy Costs	271 105	233 274	230 195	290 226
Customer Care	81 729	30 774	62 142	90 857
Bad Debt	415 476	(24 844)	48 878	(31 626)
Other Operating Expenses	188 420	63 347	326 283	941 881
TAP & Other Taxes	1 678 691	1 442 930	1 560 721	1 692 789
Total Operating Expenditure	8 062 636	7 236 187	7 642 926	9 025 297
	-	-	-	-
EBITDAM	6 014 040	5 105 362	6 134 768	5 087 718
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	6 014 040	5 105 362	6 134 768	5 087 718
	-	-	-	-
	-	-	-	-
Depreciation	5 477 402	4 813 746	4 498 265	5 171 888
Amortization	119 999	113 332	113 332	113 332
	-	-	-	-
EBIT	416 639	178 284	1 523 171	(197 503)
	-	-	-	-
Financial Income	-	-	-	-
Financial Expenses	256 262	250 847	255 581	316 556
Foreign Exchange (Gain) Loss	(11 117)	(3 836)	(10 770)	(17 801)
(Gain) Loss on disposal of fixed assets	(0)	-	-	-
Other non Operating Revenue/Expense	(13 017)	(1 023)	(394)	(4 019)
	-	-	-	-
EBT	184 511	(67 703)	1 278 753	(492 239)
Income Taxes	64 591	26 311	368 524	348 871
	-	-	-	-
Net Earnings	65 888	(94 014)	910 228	(841 110)

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2021) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	28 353	32 048	30 663	38 958
Monthly Fee	2 360 717	2 788 671	2 988 215	3 449 236
Airtime Post paid	87 986	87 981	110 745	90 223
Airtime Pre paid	5 320 470	5 248 633	5 211 159	3 475 143
Value Added Services	7 447 029	7 590 911	8 240 698	9 594 489
Roaming	83 212	86 641	103 746	135 401
Interconnection Revenue	1 730 579	1 720 408	1 728 827	1 607 287
Equipment Revenue	10 433	32 526	48 908	55 389
Other	38 388	38 686	28 460	39 620
New Business Revenue	7	(902)	5	5
	-	-	-	-
Total Revenue	17 107 172	17 625 603	18 491 427	18 485 752
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 225 100	1 175 627	1 193 902	1 168 869
Cost of Equipments	9 613	30 175	44 457	56 308
Cost of Sims & Others	308 114	238 711	225 036	306 341
Sales Commissions	1 245 077	1 487 443	2 181 259	1 453 144
Total Cost Of Sales	2 787 903	2 931 957	3 644 654	2 984 662
	-	-	-	-
Gross Margin	14 319 269	14 693 646	14 846 773	15 501 090
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	1 555 527	1 609 398	1 695 314	2 502 313
Frequency Fees	555 994	770 386	771 189	680 634
Lease Lines	847 998	754 653	798 127	928 530
Network Maintenance & Rentals	1 058 331	1 026 333	1 090 441	1 129 896
Universal Service Obligation	600 473	616 896	647 199	601 139
Advertising & Promotions	252 277	352 308	254 538	386 250
Consulting & Legal	48 601	48 981	36 034	52 158
Information Technology (IT) Cost	430 243	367 418	420 765	407 329
Occupancy Costs	218 222	215 176	228 861	268 943
Customer Care	74 311	99 833	83 538	132 674
Bad Debt	60 268	21 947	203 350	85 847
Other Operating Expenses	1 188 539	622 364	339 033	865 583
TAP & Other Taxes	1 591 454	1 591 667	1 714 617	1 707 534
Total Operating Expenditure	9 979 105	9 526 305	9 744 712	11 469 210
	-	-	-	-
EBITDAM	5 837 030	6 596 286	6 563 768	5 752 261
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	5 837 030	6 596 286	6 563 768	5 752 261
	-	-	-	-
	-	-	-	-
Depreciation	5 588 016	4 693 246	5 000 468	5 462 986
Amortization	113 332	113 332	113 333	113 332
	-	-	-	-
EBIT	135 682	1 789 708	1 449 967	175 943
	-	-	-	-
Financial Income	-	-	-	-
Financial Expenses	240 389	516 510	284 836	259 633
Foreign Exchange (Gain) Loss	(53 520)	(2 287)	3 164	187 654
(Gain) Loss on disposal of fixed assets	-	-	-	380
Other non Operating Revenue/Expense	2 181	(1 433)	(14 897)	349
	-	-	-	-
EBT	(53 367)	1 276 918	1 176 864	(272 074)
Income Taxes	393 497	6 257	347 368	(11 161)
	-	-	-	-
Net Earnings	(446 865)	1 270 661	829 496	(260 912)

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2022) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	38 054	41 075	48 950	43 324
Monthly Fee	3 357 986	3 362 278	3 325 480	3 262 593
Airtime Post paid	87 718	83 267	87 128	80 832
Airtime Pre paid	4 209 717	4 096 753	4 257 450	4 064 490
Value Added Services	8 397 337	8 769 347	9 519 278	9 298 154
Roaming	137 929	156 837	236 807	127 118
Interconnection Revenue	1 638 852	1 704 150	1 648 055	1 494 861
Equipment Revenue	72 789	46 012	56 274	(53 293)
Other	9 313	8 257	1 301	(29 610)
New Business Revenue	5	2	-	-
	-	-	-	-
Total Revenue	17 949 700	18 267 977	19 180 724	18 288 470
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 092 157	1 078 837	1 151 891	1 056 803
Cost of Equipments	67 068	43 619	52 663	63 584
Cost of Sims & Others	215 678	204 082	211 493	330 392
Sales Commissions	1 415 286	1 358 894	1 458 605	1 519 553
Total Cost Of Sales	2 790 190	2 685 432	2 874 652	2 970 332
	-	-	-	-
Gross Margin	15 159 510	15 582 545	16 306 073	15 318 138
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	2 121 313	2 519 696	2 088 804	2 790 846
Frequency Fees	770 301	773 499	776 864	789 140
Lease Lines	884 309	861 184	826 544	975 250
Network Maintenance & Rentals	943 415	939 021	1 078 863	1 112 225
Universal Service Obligation	628 239	639 379	659 690	640 096
Advertising & Promotions	263 012	440 560	366 851	349 937
Consulting & Legal	35 507	45 929	74 503	64 705
Information Technology (IT) Cost	431 574	446 953	460 442	513 386
Occupancy Costs	224 206	196 713	150 283	273 398
Customer Care	77 834	42 862	49 127	58 273
Bad Debt	174 741	75 228	145 265	(195 412)
Other Operating Expenses	173 740	608 162	311 034	1 007 928
TAP & Other Taxes	1 596 697	1 598 608	1 680 771	1 654 137
Total Operating Expenditure	8 324 887	9 187 794	8 669 040	10 033 908
	-	-	-	-
EBITDAM	6 834 623	6 394 751	7 637 032	5 284 230
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	6 834 623	6 394 751	7 637 032	5 284 230
	-	-	-	-
	-	-	-	-
Depreciation	4 903 289	4 863 387	4 705 195	5 804 161
Amortization	113 332	113 332	113 332	113 332
	-	-	-	-
EBIT	1 818 002	1 418 032	2 818 505	(633 264)
	-	-	-	-
Financial Income	(9 643)	(23 602)	(19 742)	(5 845)
Financial Expenses	201 555	171 772	195 265	345 767
Foreign Exchange (Gain) Loss	5 638	31 952	60 535	3 334
(Gain) Loss on disposal of fixed assets	(143 884)	-	-	(59 972)
Other non Operating Revenue/Expense	3 233	(1 922)	(414)	(4 351)
	-	-	-	-
EBT	1 761 103	1 239 832	2 582 860	(912 197)
Income Taxes	672 754	280 543	805 696	52 757
	-	-	-	-
Net Earnings	1 088 349	959 290	1 777 164	(964 954)

WTA Income Statement

Wataniya Telecom Algeria
Period: Q1 To Q4 (2023) Currency: DZD (000)

	Q1	Q2	Q3	Q4
Revenue				
Activation	35 421	37 398	42 511	44 968
Monthly Fee	3 245 645	3 385 264	3 397 713	3 850 417
Airtime Post paid	72 994	84 116	91 689	91 266
Airtime Pre paid	3 895 009	3 912 188	4 019 261	3 947 466
Value Added Services	9 465 720	9 939 553	10 202 450	10 915 700
Roaming	170 425	176 266	226 432	201 187
Interconnection Revenue	1 268 911	1 401 862	2 191 974	1 657 100
Equipment Revenue	40 304	24 196	8 072	25 091
Other	12 832	12 657	11 602	24 352
New Business Revenue	-	-	-	-
	-	-	-	-
Total Revenue	18 207 262	18 973 500	20 191 703	20 757 547
	-	-	-	-
Cost of Sales	-	-	-	-
Interconnect & Roaming	1 071 617	1 123 403	1 124 610	1 154 957
Cost of Equipments	38 650	23 112	7 420	23 248
Cost of Sims & Others	272 291	269 448	310 664	423 462
Sales Commissions	1 341 296	1 420 393	1 559 053	1 462 257
Total Cost Of Sales	2 723 854	2 836 355	3 001 747	3 063 924
	-	-	-	-
Gross Margin	15 483 408	16 137 145	17 189 956	17 693 622
	-	-	-	-
	-	-	-	-
Operating Expenses	-	-	-	-
	-	-	-	-
Salaries & Benefits	1 823 640	1 806 318	1 692 738	1 787 897
Frequency Fees	869 336	881 650	895 978	947 654
Lease Lines	785 380	725 375	663 862	647 018
Network Maintenance & Rentals	1 106 400	1 011 244	1 159 805	1 215 972
Universal Service Obligation	637 254	724 627	663 556	726 103
Advertising & Promotions	281 823	272 781	304 598	551 985
Consulting & Legal	30 293	44 811	48 718	112 250
Information Technology (IT) Cost	608 213	542 621	555 156	258 165
Occupancy Costs	194 435	203 461	207 955	214 285
Customer Care	54 617	63 535	62 912	34 990
Bad Debt	91 761	29 590	36 395	13 917
Other Operating Expenses	262 786	525 198	556 421	1 339 728
TAP & Other Taxes	1 634 134	1 685 078	1 821 957	1 614 474
Total Operating Expenditure	8 380 074	8 516 289	8 670 050	9 464 438
	-	-	-	-
EBITDAM	7 103 334	7 620 856	8 519 906	8 229 184
	-	-	-	-
Technical Assistance	-	-	-	-
	-	-	-	-
EBITDA	7 103 334	7 620 856	8 519 906	8 229 184
	-	-	-	-
	-	-	-	-
Depreciation	4 454 870	4 450 409	4 970 373	6 461 378
Amortization	113 332	113 332	113 332	113 332
	-	-	-	-
EBIT	2 535 132	3 057 115	3 436 201	1 654 474
	-	-	-	-
Financial Income	(7 376)	(29 091)	(10 248)	(20 285)
Financial Expenses	222 301	260 226	268 151	425 507
Foreign Exchange (Gain) Loss	(29 004)	8 429	27 734	12 169
(Gain) Loss on disposal of fixed assets	470	(88 722)	(257 921)	(164 164)
Other non Operating Revenue/Expense	(1 045 963)	88 607	(1 000)	(152 096)
	-	-	-	-
EBT	3 394 705	2 817 666	3 409 483	1 553 342
Income Taxes	859 186	936 263	958 774	1 319 068
	-	-	-	-
Net Earnings	2 535 519	1 881 403	2 450 710	234 274

APPENDIX C: RESEARCH DATASET

QUARTER	X1_B (NET EARNINGS/CAPEX)	X1 (EBITDA/CAPEX)	X2 (OPEX/TOTAL REVENUE)	Y (NPM)
2017 Q1	4,89	12,47	36,62%	17,71%
2017 Q2	1,46	4,48	38,92%	14,46%
2017 Q3	1,79	5,04	35,29%	16,70%
2017 Q4	1,81	8,31	46,06%	8,46%
2018 Q1	0,76	3,14	41,54%	10,14%
2018 Q2	0,18	1,67	43,60%	4,04%
2018 Q3	0,19	1,76	43,30%	3,81%
2018 Q4	0,10	1,39	43,97%	2,45%
2019 Q1	0,33	1,47	38,69%	8,99%
2019 Q2	0,02	1,27	46,83%	0,43%
2019 Q3	0,03	1,98	43,72%	0,55%
2019 Q4	-0,10	1,43	45,66%	-2,40%
2020 Q1	0,02	2,22	45,49%	0,29%
2020 Q2	-0,03	1,81	46,48%	-0,60%
2020 Q3	0,39	2,60	44,64%	5,32%
2020 Q4	-0,10	0,58	52,29%	-4,87%
2021 Q1	-0,36	4,67	58,33%	-2,61%
2021 Q2	0,72	3,73	54,05%	7,21%
2021 Q3	0,61	4,79	52,70%	4,49%
2021 Q4	-0,05	1,10	62,04%	-1,41%
2022 Q1	0,42	2,65	46,38%	6,06%
2022 Q2	0,31	2,10	50,29%	5,25%
2022 Q3	0,75	3,24	45,20%	9,27%
2022 Q4	-0,14	0,76	54,86%	-5,28%
2023 Q1	1,18	3,29	46,03%	13,93%
2023 Q2	1,04	4,22	44,89%	9,92%
2023 Q3	0,58	2,03	42,94%	12,14%
2023 Q4	0,03	1,07	45,60%	1,13%

APPENDIX D: STATISTICAL OUTPUT TABLES

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
EBITDA/CAPEX	28	.5846737539	12.47327730	3.044904800	2.504978621	6,275
NET EARNINGS/CAPEX	28	-.357311216	4.885193453	.6007441508	1.017922310	1,036
OPEX/REVENUE	28	35,29%	62,04%	46,3001%	6,13569%	37,647
NPM	28	-5,28%	17,71%	5,1985%	6,36990%	40,576
Valid N (listwise)	28					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
NPM	,096	28	,200*	,972	28	,649

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	,137	28	,191	,955	28	,271

a. Lilliefors Significance Correction

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	,135	28	,200*	,973	28	,673

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Correlations

		EBITDA/CAPEX	OPEX/REVENUE	NPM
EBITDA/CAPEX	Pearson Correlation	1	-,308	,624**
	Sig. (2-tailed)		,110	<,001
	N	28	28	28
OPEX/REVENUE	Pearson Correlation	-,308	1	-,672**
	Sig. (2-tailed)	,110		<,001
	N	28	28	28
NPM	Pearson Correlation	,624**	-,672**	1
	Sig. (2-tailed)	<,001	<,001	
	N	28	28	28

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations

		NET EARNINGS/CAPEX	OPEX/REVENUE	NPM
NET EARNINGS/CAPEX	Pearson Correlation	1	-,516**	,772**
	Sig. (2-tailed)		,005	<,001
	N	28	28	28
OPEX/REVENUE	Pearson Correlation	-,516**	1	-,672**
	Sig. (2-tailed)	,005		<,001
	N	28	28	28
NPM	Pearson Correlation	,772**	-,672**	1
	Sig. (2-tailed)	<,001	<,001	
	N	28	28	28

**. Correlation is significant at the 0.01 level (2-tailed).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,802[a]	,644	,615	3,95248%	1,551

a. Predictors: (Constant), OPEX/REVENUE, EBITDA/CAPEX

b. Dependent Variable: NPM

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,836[a]	,698	,674	3,63599%	1,675

a. Predictors: (Constant), OPEX/REVENUE, NET EARNINGS/CAPEX

b. Dependent Variable: NPM

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	704,991	2	352,495	22,564	<,001[b]
	Residual	390,552	25	15,622		
	Total	1095,543	27			

a. Dependent Variable: NPM

b. Predictors: (Constant), OPEX/REVENUE, EBITDA/CAPEX

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	765,032	2	382,516	28,934	<,001[b]
	Residual	330,511	25	13,220		
	Total	1095,543	27			

a. Dependent Variable: NPM

b. Predictors: (Constant), OPEX/REVENUE, NET EARNINGS/CAPEX

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	27,124	6,444		4,209	<,001		
	EBITDA/CAPEX	1,170	,319	,460	3,667	,001	,905	1,105
	OPEX/REVENUE	-,551	,130	-,530	-4,224	<,001	,905	1,105

a. Dependent Variable: NPM

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	20,954	6,463		3,242	,003		
	NET EARNINGS/CAPEX	3,627	,802	,580	4,520	<,001	,734	1,363
	OPEX/REVENUE	-,387	,133	-,373	-2,909	,007	,734	1,363

a. Dependent Variable: NPM