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Master Thesis

Internationalization Strategies and Financial Performance in Multinational Construction Companies

Study programme: N0413A050030 International Management
Author: **Kiran Kumar Srinivasan**
Thesis Supervisors: Ing. Lenka Strýčková, Ph.D.
Department of Finance and Accounting

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Department of Finance and Accounting

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L.S.

doc. Ing. Aleš Kocourek, Ph.D.
Dean

doc. Ing. Kateřina Maršíková, Ph.D.
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Internationalization Strategies and Financial Performance in Multinational Construction Companies

Annotation

This master's thesis explores the relationship between internationalization strategies and the financial performance of multinational construction companies, emphasizing the impact of technology advancements, trends and regional factors on their global financial success, particularly in the French and Austrian markets. The thesis provides insights into the primary internationalization strategies, factors influencing decision-making for international expansion, and financial risk assessment strategies. The comparative analysis of VINCI, Bouygues, and Strabag SE reveals the significant influence of internationalization strategies on financial performance. Companies are urged to adapt to local market conditions and technological advancements for success in the global construction market. Market diversification, mergers, acquisitions, and joint ventures emerge as key strategies for international expansion and companies that prioritize these strategies tend to outperform those that do not. The findings also show that companies that effectively manage financial risks, such as debt-to-equity ratios, are more likely to achieve financial success in their international operations.

Key Words

Decision-Making, Financial Performance, Internationalization Strategies, Regional Factors, Technological Advancements, Trends.

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List of Abbreviations

CAGR	Compounded Annual Growth Rate
CGMR	Construction Global Market Report
DCT	Dynamic OLI View
DIO	Days Inventory Outstanding
DSO	Days Sales Outstanding
DPO	Days Payable Outstanding
ENR	Engineering News Record
ESG	Environmental Social Governance
IFICF	Internationalization Process of Construction Firms
MNC	Multinational Companies
MNCC	Multinational Construction Companies
NTI	Network-Based Model

Introduction

The evolving construction industry, as an integral component of economic development, experienced a significant evolution in its internationalization strategies during the last decade.

Globalization, technology advancements, strong competition, changing customer demand, and shifts in the economy and politics all these influence manager's decisions and drive them to take risks and implement efficient strategies. Notably, growing internationalization and evolving globalization have become distinctive features of the economy. Internationalization is a phenomenon that has been studied more recently by several scholars. A thorough investigation has been conducted into the international business strategies, as well as the reasons, benefits, and approaches to internationalization. However, a variety of approaches that seek to explain the situations that enable businesses to take advantage of market opportunities and perform better than competitors have been developed in the scientific literature.

The recent COVID-19 pandemic has significantly affected the global construction industries, resulting in substantial consequences for businesses in this sector. The global construction market size declined from in 2020. As businesses seek to explore new markets and capitalize on growth opportunities, understanding internationalization strategies has become imperative.

Research into the internationalisation of construction companies is becoming increasingly important, both in the academic community and in construction practice. Existing research results show a variety of problems faced by construction companies in the internationalisation of their operations, and potential strategies have been designed for construction companies entering international markets.

The aim of this thesis is to explore the relationship between internationalization strategies and financial performance of multinational construction companies, with a focus on the comparative financial analysis of the selected companies, the secondary objectives include:

- Understand the fundamentals of internationalization, the process, models, and various strategies implemented by multinational construction companies.
- Understand financial ratios and indicators along with their formula and their role in evaluating the financial performance of the companies.
- Discuss global construction industry specifics, such as the latest technology advancements and trends and their impact.
- Study the regional aspect of German and Czech contractors, comparing their market presence, strategies, and international business growth.
- Conducting a comparative analysis of the selected multinational construction companies' comparing their results and discussing the internationalization strategies and factors impacting their financial performance.
- Learn and discuss actionable insights about multinational construction companies aiming to enhance their financial performance through effective internationalization strategies.

Methodology

Literature Review: The study begins with an extensive review of the existing literature on internationalization strategies and their impact on the financial performance of construction companies. This review covers academic journals, industry reports, and other relevant sources to establish a solid theoretical foundation for the research.

Data Collection: The study gathers financial data for the selected multinational construction companies over a five-year period (2018-2022). This data includes key financial ratios, such as liquidity ratios, profitability ratios, leverage ratios, and efficiency ratios, which are used to assess the companies' financial performance.

Comparative Analysis: The study conducts a comparative analysis of the selected multinational construction companies, examining their internationalization strategies and the corresponding financial performance. This analysis involves identifying the

specific internationalization strategies employed by each company and evaluating their impact on the companies' financial metrics.

Regional Aspects: The study also explores the regional aspects of the construction industry, focusing on the French and Austrian markets. This includes analyzing the market dynamics, regulatory environments, and competitive landscapes in these regions, and how they have influenced the internationalization strategies and financial performance of the selected companies.

Data Analysis and Interpretation: The collected data is analyzed using appropriate statistical techniques and financial modeling to identify the key drivers, trends, and relationships between internationalization strategies and financial performance. The findings are then interpreted in the context of the existing literature and industry practices.

Key Research Questions:

- What are the primary internationalization strategies employed by multinational construction companies, and how do these strategies differ based on company size and market presence?

- How do multinational construction companies navigate the decision-making process for international expansion, focusing on the key factors that influence their strategic choices?

- What financial risk assessment and mitigation strategies do multinational construction companies utilize during internationalization, and how do these strategies impact their overall financial performance?

1 Overview of Internationalization Strategies

In the field of multinational companies, the foundation of success lies in a deep understanding of internationalization and the process, strategies, and approaches. These strategies are essential for expanding operations beyond domestic borders and navigating the complexities of global markets. Before diving into the specifics of the construction industry, it is crucial to understand the fundamental concepts of internationalization strategies in an order.

The root definition trace back to that provided by Welch and Loustarinen in 1988 which implies that internationalization is *"the process of increasing involvement in international operations"*. Hence, the firms gradually and sequentially become involved in international markets. On the other hand, the process of the firm's internationalization has been widely researched over the past five decades. The scholars explained it as a result of the globalization of industries. Hence, domestic firms can be subject to increased pressure to internationalize rapidly in order to respond to the actions of global competitors (Korsakienė, 2013, p. 2).

To further simplify the concept, internationalization can be understood as the expansion of economic activities beyond domestic borders. This process leads to quantitative changes, resulting in a broader geographical organization of economic activities (Butković, Bošković and Katavić, 2014).

1.1 Evolution of Internationalization in the Construction Industry

The construction industry has undergone significant changes in recent years, with internationalization playing a crucial role in its evolution. The industry has seen a shift towards globalization, with multinational companies expanding their operations across borders and emerging markets offering new opportunities for growth.

Globalization has led to increased competition and collaboration among construction companies, driving the need for internationalization strategies. Companies are now looking to expand their operations beyond their home markets to tap into new opportunities and diversify their revenue streams. This has resulted in a growing trend of mergers and acquisitions among construction companies, with larger firms acquiring smaller ones to gain a foothold in new markets (Global Construction Outlook, 2024).

Emerging markets, such as China, Brazil, India, Saudi Arabia, and Indonesia, have been at the forefront of the construction industry's growth. These countries have seen rapid urbanization and infrastructure development, leading to an increase in construction activity and demand for construction services. For instance, in China, construction output contributed to 25.9% of the country's GDP in 2020, up from 6.2% in 2019.

The global construction market is large and has undergone significant transformation over the course of history. According to the lastest (CGMR) Construction Global Market Report (2023) the global construction market grew from $14503.87 billion in 2022 to $15461.84 billion in 2023 at a compound annual growth rate (CAGR) of 6.6%. The Russia-Ukraine war disrupted the chances of global economic recovery from the COVID-19 pandemic, at least in the short term. The war between these two countries has led to economic sanctions on multiple countries, a surge in commodity prices, and supply chain disruptions, causing inflation across goods and services and affecting many markets across the globe. The construction market is expected to grow to $19519.26 billion in 2027 at a CAGR of 6.0%.

Figure 1 provides an overview of the forecasted trends in global construction activity for 2024 and 2026. The outlook has been downgraded slightly due to revisions in historical data from China, leading to a projected decline of 0.3% in 2024 followed by a modest rebound of 2.4% in 2025. Key insights include expected decreases in residential and non-residential building activity in 2024, with a gradual recovery in subsequent years. Civil engineering activity is projected to experience moderate growth, supported by public stimulus measures.

Global construction activity is forecasted to grow by 1.2% in 2024 to US$9.6tn. Total construction activity is forecasted to reach US$9.9tn by 2025, growing at a compound annual growth rate of 3.6% from 2025 to 2027 (Global Construction Outlook, 2023).

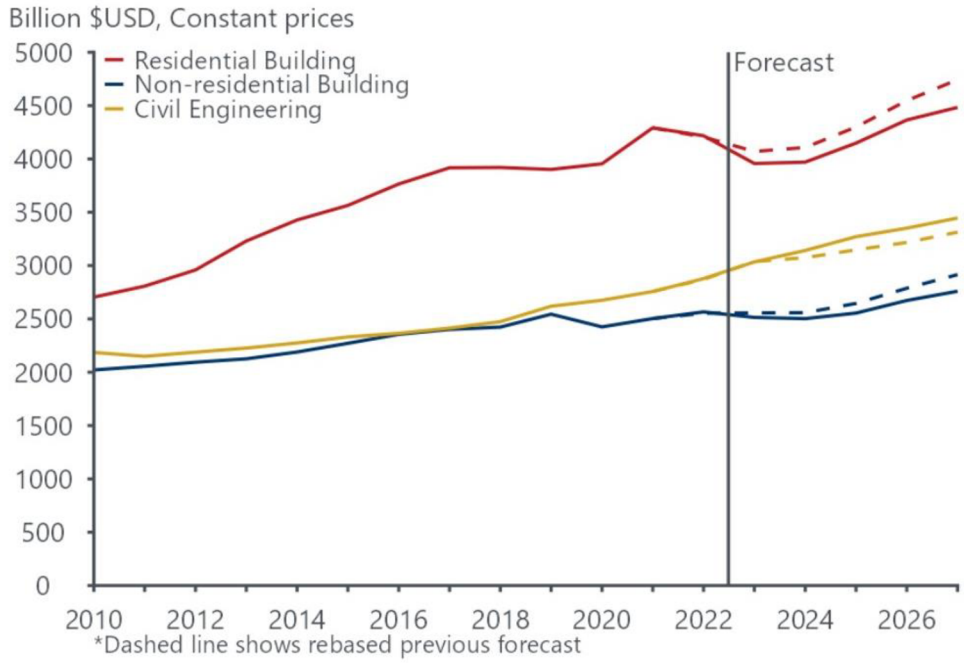

Figure 1: Total construction work done by sector 2010-2026
Source: https://www.oxfordeconomics.com/wpcontent/uploads/2023/10/GlobalConstruction Chartbook-Q3-2023.

The KPMG Global Construction Survey (2023) highlights the importance of data and analytics in the construction industry. The report states that companies that can capture data, analyze it, and produce practical insights will likely enjoy lower costs, better project performance, greater efficiency, and safer workplaces. The survey also notes that the construction industry is starting to embrace the power of technology to transform performance, with 81 percent of E&C firms adopting mobile platforms, 43 percent using robotics process automation (RPA), and 40 percent adopting artificial intelligence (AI) (Global Construction Outlook, 2023).

1.2 The determination of the degree of internationalization of a firm

The construction industry appears to remain an evolving one. ENR (Engineering News Record) ranks international contractors according to the absolute amount of international revenue, which is one of the most acceptable and basic ways to measure the degree of international performance of a firm as mentioned in all the available literature. According to recent ENR 2023 report, top 250 International Contractors have experienced a significant increase in non-domestic revenue, which is a strong indicator of their internationalization effort. The combined revenue for the leading 250 international firms marks the largest reported one-year list revenue hike since a 12.3% increase. The non-domestic revenue of the top 250 International Contractors rose by 7.7% to $428.5 billion (ENR 2023). The Figure 2, provides valuable insights into the performance of contractors in different regions around the world.

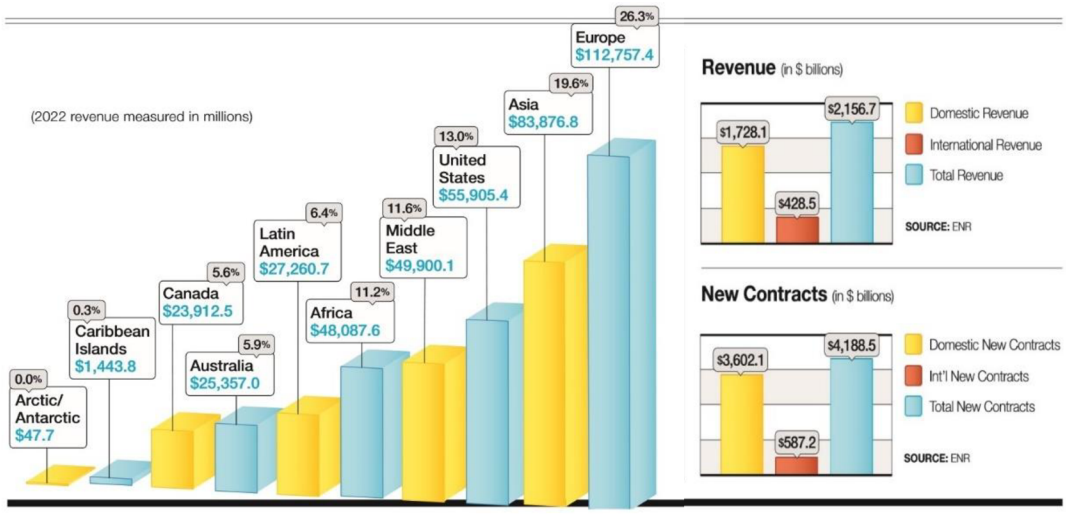

Figure 2: International regional analysis
Source: https://www.oxfordeconomics.com/wpcontent/uploads/2023/10/GlobalConstruction Chartbook-Q3-2023.

In the construction industry, the international performance of contractors varies significantly across different regions around the world. According to the G8 Countries Construction Market Summary, Competitive Analysis and Forecast to 2027, the construction market in G8 countries has experienced steady growth, driven by increased investment in infrastructure and building projects. However, the report

highlights the need for contractors to adapt to changing market conditions and regulatory requirements in each country.

In the GCC region, the Deloitte GCC Powers of Construction (2023) report highlights the increasing demand for construction services, with the UAE and Saudi Arabia leading the way in terms of project value and volume. The report emphasizes the need for contractors to focus on innovation, sustainability, and digital transformation to stay competitive in the region.

1.2.1 Europe as the Leading Region

Europe stands out as the top-performing region in the construction industry, with a market share of 66.1% and a revenue of $74.6 billion in 2023. This dominance can be attributed to the region's strong economic growth, advanced infrastructure, and favorable business environment.

1 EUROPE

Region's Revenue: $74.6 Billion
Market Share: 66.1%

RANK 2023	RANK 2022	
1	1	VINCI
2	2	STRABAG SE
3	3	BOUYGUES
4	7	EIFFAGE
5	4	FERROVIAL
6	6	SKANSKA AB
7	9	PORR AG
8	**	CHINA NATIONAL CHEMICAL ENG'G GROUP CORP.
9	8	RENAISSANCE CONSTRUCTION
10	**	FCC SA

Figure 3: Europe Ranks #1 in the Top 10 Firms by Regional Revenue in the world.
Source: https://www.oxfordeconomics.com/wpcontent/uploads/2023/10/GlobalConstruction Chartbook-Q3-2023.

#1 Ranked VINCI: A France-based company, is the leading contractor in the world and Europe, with a revenue of $35.7 billion in international revenue.

#2 Ranked Strabag SE: The presence in the construction sector is notable, showcasing its ability to compete and succeed on an international scale

#3 Ranked Bouygues: The strategic initiatives and projects have positioned it as a significant player in the global construction market.

Figure 3, shows the distinct success of the three main companies VINCI, Strabag SE, and Bouygues which are top-performing European multinational construction companies in the world. Table 1 shows how easily they are spotted within the top 5 rank list out of the 250 companies. Therefore, I highlighted these three main companies since they are strategically selected for my research in the upcoming practical part of this thesis, where we conduct a comparative analysis of their strategic and financial performance and discuss further.

Western Europe is expected to have a construction market size of $2,093.4 billion in 2023, growing at a CAGR of 0.7% during 2022-2027. Key countries in the region include France, Italy, and the UK, which are expected to contribute significantly to the growth of the construction market (ENR,2023).

Table 1: Rank list by construction revenue from international operations (2022-2023)

	RANK		2022 REVENU	$ MIL	2022 NEW CONTRACTS	BUILDING	MANUFACTURING	POWER	WATER SUPPLY	SEWER WASTE	PETROLEUM	TRANSPORTATION	TELECOM
2023	2022	FIRM	INT'L	TOTAL	$ MIL								
1	2	VINCI, Nanterre, FranceT	35,658.00	65,606.00	58,704.00	5	0	22	1	0	4	41	12
2	1	HOCHTIEF, Madrid, Spain	34,137.50	35,625.90	39,294.30	40	1	2	1	1	3	32	11
3	3	CCC GROUP LTD., Beijing, China	23,526.50	130,765.30	327,688.60	11	10	0	2	0	0	76	0
4	4	BOUYGUES, Paris, France	20,806.00	36,118.00	31,968.00	24	1	7	0	1	2	57	3
5	5	STRABAG SE, Vienna, Austria	15,786.00	18,916.70	20,306.10	30	0	1	4	2	5	56	0

Source: https://www.oxfordeconomics.com/wpcontent/uploads/2023/10/Global|Construction /10/GlobalConstructionChartbook-Q3-2023.

In Europe, the construction industry has faced significant challenges due to the COVID-19 pandemic, supply chain disruptions, and rising material costs.

However, the industry is expected to recover, with emerging regions such as Asia, Africa, and the Middle East becoming hotspots for construction activity. The International Construction Market Survey 2023 by Turner & Townsend indicates that 74.2 percent of global markets show a 'skills shortage', highlighting the need for contractors to address labor shortages and invest in workforce development (International Construction Market Survey, 2023).

1.3 Process of Internationalization

The study of the process of internationalization in this master thesis attempts to draw a generic process of internationalization from the contractor’s point of view in an overseas market and analyze its tendencies and characteristics. The general process of internationalization is based on the mentioned models.

The models mentioned in Table 2 may continue to be relevant, in contexts and industry settings. Yet with the changing landscape of business and the trends of globalization within the construction sector, newer models could provide insights into how contractors internationalize their operations.

The process of internationalization for construction companies is intricate requiring planning adapting to market conditions and making operational changes to succeed in foreign markets. By examining insights, from research findings let's explore each aspect further.

Table 2: Internationalization models list

MODELS	CHARACTERISTICS / STUDIES
U-Model	- Exports and direct investments (Hilal and Hemais, 2003). - First, they expand to psychologically closer countries (Johanson and Wiedersheim-Paul, 1975). - Gradual and Incremental extension (Johanson and Vahlne, 1997). - External aspects are ignored as conditions of competitiveness, market potential (Pedersen, 1999). - Focuses on market specific knowledge (Clark *et al.*, 1997).
I-Model	- Exports considered as an innovative process: Innovation Factor (Rogers, 1962; Adersen, 1993). - Steps: 1st Unsolicited export 2nd Export to geographically closest countries 3rd Export to geographically more distant countries (Bilkey and Tesar, 1977).
Born Globals	- Sales to the external market exceed 25% of the revenue in the first three years of the company's life (Knight and Cavusgil, 1996). - Companies of small size but with great technological orientation (Bell, 1975; Knight and Cavusgil, 1996).
Product's lifecycle	- Discovery of a market innovation, where a company already exists and is intended to extend the product's lifecycle (Vermon, 1966). - Starts the expansion in countries whose demand for the product can be developed. Steps: from simple export to the implementation of subsidiaries. - Creation of subsidiaries in an external market, not only with the aim of reducing costs, but as a strategy to avoid trade barriers of importing countries.
Non-Sequential Model	- It starts the exports' knowledge "at home", developing knowledge to overcome difficulties (Cuervo-Cazurra, 2011). - Non-sequential internationalisation and it operates in countries very different from the country of origin. - Companies that both export, invest in markets and, after an "interregnum", decide to re-export, even in markets where they have invested (Non-sequential).
Pre-Export Activities Model	- Internationalisation by incremental, sequential and non-linear stages (Wiedersheim-Paul *et al.*, 1978). - They approach the company's pre-exporting role to export (manager's characteristics (decision-maker), the company's surroundings and location and the company's characteristics).
Integrated Model	- Internationalisation by state, variable, non-sequential and flexible (Bell *et al.*, 2003). - It considers unique characteristics of three types of SMEs, which through decisions can evolve through three types of internationalisation. - It is based on variable and flexible trajectories in order to propose a model as a reference and strategic tool. - It values the knowledge's intensity that is associated with internationalisation form two axes, variables that end up guiding the model.
Network Theory	- Set of two or more institutions, allowing interconnected exchanges (Axelsson and Easton, 1992). - It involves the exchange of resources between the institutions (Sharma, 1993). - Mutual flexibility of institutions (Bachmann, 1999). - Cooperation: the opportunity to use a set of technical and economic knowledge (Bachmann, 1999). - Collective assumption of costs and risks (Bachmann, 1999).

Source: Ana Filipa M. ROQUE, Maria-Céu G. ALVES and Mário Lino RAPOSO (2019), IBIMA Business Review, DOI: 10.5171/2019.681383

1.3.1 Models for Internationalization for Construction Firms

Models like the IFICF (Internationalization Process of Construction Firms), DCT (Dynamic OLI View), and NTI (Network-Based Model) offer valuable frameworks for understanding how construction companies progress through different stages of internationalization. These models emphasize factors like economic growth, innovative delivery methods, foreign aid, and the complexity of international projects as drivers of international expansion (Jang *et al.*, 2019).

Recent research points out the significant role of business models in determining the performance of international construction companies. Strategies for contractors to sustain growth in the global construction market include diversification, resource optimization, and strategic group analysis. Understanding the link between business models and performance is crucial for construction firms seeking sustainable growth and success in international markets (Jang *et al.*, 2019).

As depicted in Figure 4, the business model framework for international construction companies consists of four main components: target customer, offering, key resources, and revenue generation. These components are analyzed through a three-dimensional lens, focusing on the 'who', 'what', and 'how' aspects of value creation and capture. The framework helps identify key variables that contribute to business models, guiding companies in understanding their customer segments.

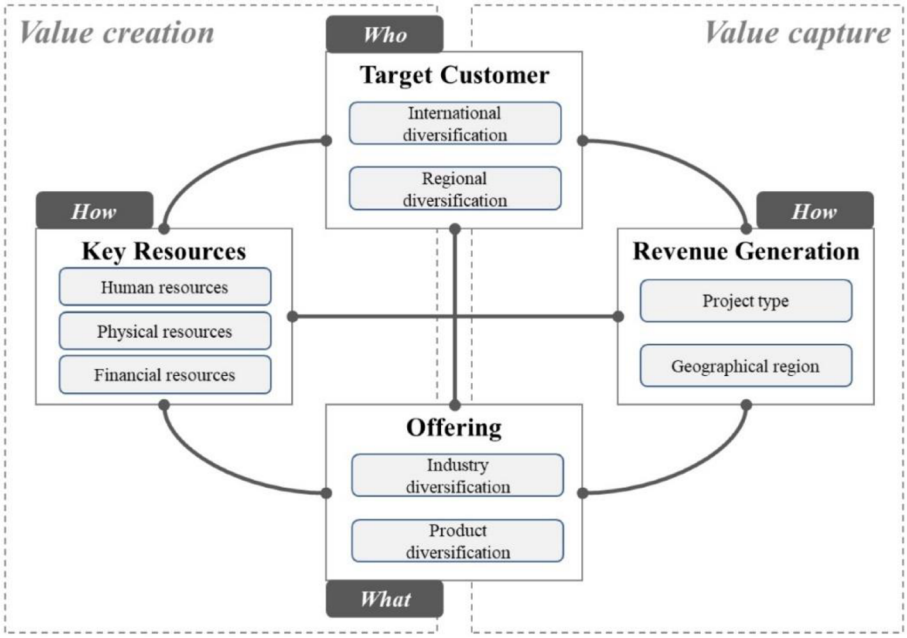

Figure 4: Business model framework for the construction company
Source: Business Models and Performance of International Construction Companies Companies by Youjin Jang (2019) DOI: 10.3390/su11092575

1.3.2 Eclectic Paradigm

The Eclectic Paradigm, also known as the OLI framework, is a concept in international business that provides insights into why firms choose to invest abroad and how they can benefit from such investments. This paradigm, introduced by John Dunning, emphasizes three key factors: Ownership-specific advantages (O), Location-specific advantages (L), and Internalization advantages (I). The OLI framework suggests that firms possess unique resources and competencies relative to their competitors from other countries, which drive their decision to engage in foreign direct investment (FDI) rather than other forms of cross-border transactions (Sedivy *et al.*, 2016).

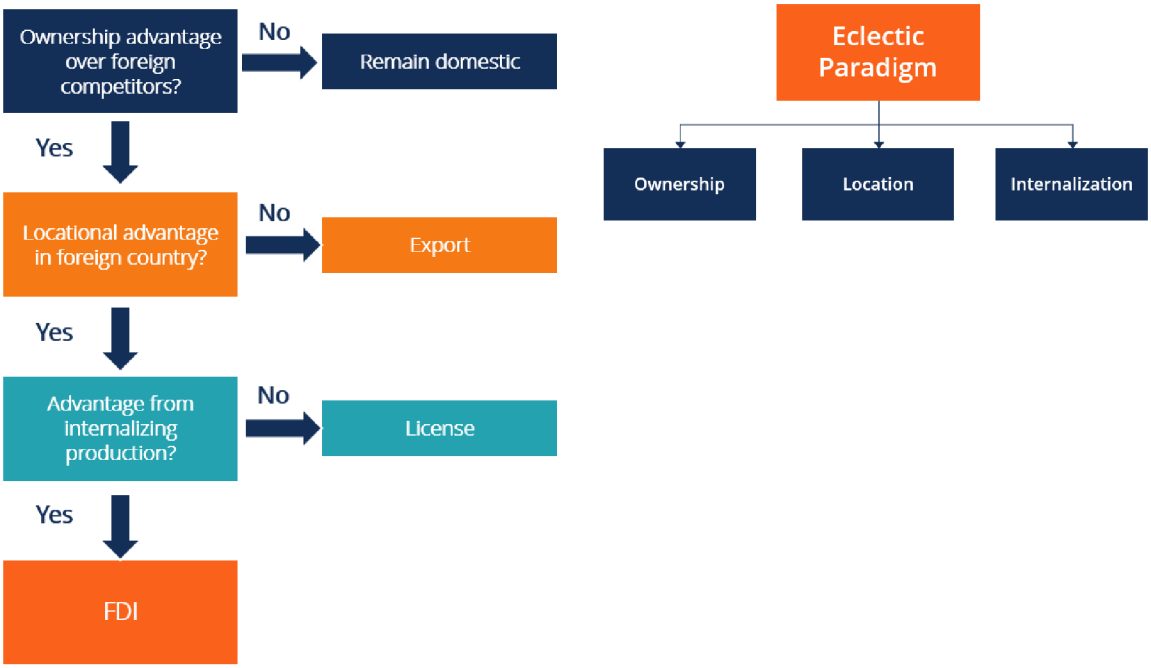

Figure 5: Eclectic paradigm
Source: https://cdn.corporatefinanceinstitute.com/assets/eclectic-paradigm.png

In the context of the construction industry, the Eclectic Paradigm holds significant relevance (Figure 5), Construction firms often possess ownership-specific advantages such as specialized skills, technology, and expertise that give them a competitive edge in international markets. These firms may develop their unique capabilities to secure projects abroad and deliver high-quality infrastructure developments.

Location-specific advantages play a crucial role as well, as construction projects are inherently tied to specific geographical locations, regulatory environments, and resource availability. By understanding and capitalizing on these location-specific factors, construction companies can optimize their operations and project outcomes.

Moreover, internalization advantages highlighted in the Eclectic Paradigm are more relevant to the construction field. The paradigm points out the importance of firms internalizing their activities across borders to maintain control over critical competencies and resources. In construction, where projects involve complex coordination of various stakeholders, materials, and processes, internalization can enhance efficiency, quality control, and project delivery timelines. By internalizing key aspects of their operations, construction firms can better manage risks, ensure

compliance with local regulations, and maintain quality standards across international projects.

1.4 Motivations for Internationalization of Construction Companies

Studies highlight the importance of understanding these key factors and tailoring their internationalization strategies accordingly, construction firms can navigate global markets successfully, capitalize on emerging opportunities, and achieve sustainable growth and competitiveness in the construction industry. The international construction boom has been fueled by economic changes, legal reforms, and the signing of trade agreements that have opened up new opportunities for construction firms abroad (Utama *et al.*, 2019).

The motivation for international expansion in construction enterprises mirrors that of other industries, driven by factors such as market opportunities, competitive advantage, risk management, resource access, and strategic growth objectives which are listed and discussed below.

- **Market Opportunities**
  One of the main motivations for construction companies to venture internationally is the availability of abundant market opportunities foreign countries. Emerging markets provide growth potential, new project opportunities and access to a broader client base, and motivate companies to expand their operations globally.

- **Competitive Advantage**
  Seeking a competitive edge is an important factor in the internationalization of construction companies. By entering new markets, companies can enhance their knowledge, technology and capabilities to outperform competitors, increase their market position and distinguish themselves through innovation and quality.

- **Diversification and Risk Management**
  Internationalization allows construction firms to diversify their project portfolios and reduce dependency on specific markets. Diversification helps reduce risks associated with economic fluctuations, regulatory changes, and political uncertainties, enhancing the ability of companies in the face of market challenges.

- **Access to Resources**
  Access to resources such as skilled labor, technology, materials, and financing drives construction companies to internationalize. By tapping into global resources, firms can optimize their operations, improve efficiency, and capitalize on cost-effective solutions available in different markets.

- **Strategic Growth and Expansion**
  Internationalization is often a strategic move for construction companies to achieve sustainable growth and expand their footprint. By entering new markets, firms can scale their operations, increase revenue streams, and establish a strong presence in key regions, positioning themselves as global industry leaders.

1.4.1 Challenges and Considerations

Expanding internationally poses challenges related to local legislation, administrative rules, cultural differences, and the need for strategic partnerships with local contractors or international firms. Understanding these challenges and considerations is crucial for successful internationalization in the construction industry.

Furthermore, as highlighted by Gabriel (2014a, p. 2) *"International ventures are subjected to the risk exposure, which increases for the complex construction business. Thus, the identification of potential risks in the new environment and the*

creation of an efficient financial performance management method are vital to the construction firms in the international markets".

1.5 Internationalization Strategies

At the core of internationalization strategies are various approaches that firms can adopt to broaden their perspectives and enhance their financial performance. These strategies include export-oriented initiatives, licensing agreements, franchising models, joint ventures, and direct investment avenues. Each strategy offers a unique pathway for companies to venture into new territories, adapt to diverse market landscapes, and capitalize on global opportunities.

According to Hill (2023, p. 378), *"Internationalization strategies involve a range of approaches that firms can adopt to expand their operations beyond their domestic markets. These strategies can be broadly categorized into export-oriented, licensing, franchising, joint ventures, and direct investment strategies."*

The adoption of these strategies is essential for companies aiming to adapt to diverse cultures and markets while increasing growth on a global scale. Strategies focused on exports involve the sale of products or services in foreign markets, either directly or through middlemen (Hill, 2023).

Some of the internationalization strategies employed by international firms to broaden their perspectives and achieve sustainable growth are as follows:

- **Strategic Collaboration**
  One prominent strategy adopted by international construction firms is strategic collaboration. Establishing international partnerships and collaborations allows firms to avoid risks, develop local expertise, and access new markets. Research emphasizes the importance of collaboration in avoiding risks associated with internationalization, especially in developing countries (Pícha et al., 2017a).

- **Market Entry Modes**

The choice of market entry modes is crucial for international construction firms seeking to expand globally. Entry modes such as joint ventures, acquisitions, and strategic alliances enable firms to navigate regulatory complexities, access resources, and establish a foothold in foreign markets. Understanding the dynamics of different entry modes is essential for successful internationalization (Utama et al., 2019).

- **Risk Management**
  Effective risk management is a key strategy employed by international construction firms to safeguard their investments and operations in foreign markets. Risk analysis, mitigation strategies, and proactive risk management practices are essential for mitigating uncertainties associated with international expansion. Studies highlight the significance of risk management in enhancing the financial performance of construction enterprises operating globally. (Pícha et al., 2017a)

- **Resource Optimization**
  Optimizing resources is another critical strategy adopted by international construction firms to enhance financial performance. Efficient resource allocation, cost management, and operational optimization contribute to improved profitability and competitiveness in global markets. (Korsakienė, 2013) Research points out the importance of resource optimization in driving sustainable growth for construction enterprises operating internationally.

- **Diversification:**
  Diversification strategies play a vital role in broadening the perspectives of international construction firms and reducing dependency on specific markets or sectors. Diversifying project portfolios, geographic presence, and service offerings enable firms to adapt to changing market conditions, mitigate risks, and capitalize on emerging opportunities globally.

It's important to understand the fundamental nature of construction operations. Bošković and Katavić (2014) highlight that construction activities are typically project-centric, with companies making a critical decision on whether to expand

internationally for a specific project in a new market. Once this decision is made, companies are then faced with the challenge of selecting the most suitable strategy for managing international projects effectively (Bošković and Katavić, 2014).

According to Bošković and Katavić (2014), Chen's work in 2005 emphasized the importance of selecting strategies for entering international construction markets. Through a case study involving 94 construction companies, Chen categorized these strategies into two main groups: permanent and temporary. Within these groups, he identified six characteristic strategies for construction companies. These include joint venture projects, solo venture projects, and BOT (Build-Operate-Transfer) arrangements as temporary strategies, and representative offices, branch offices, joint venture companies, and solo venture companies as permanent strategies listed in Table 3 (Bošković and Katavić, 2014).

Table 3: Business strategies for entering international construction markets

Temporary Strategies	Joint venture project	Joint investment on a project basis, also called *contractual joint venture*. Profit and other obligations are determined by contract for each party and last only for the duration of the project.
	Solo venture project	Own investment on a project basis, the company independently submits a tender or independently undertakes the project in a foreign country.
	BOT (Build-Operate-Transfer)	BOT is a system of financing the construction of infrastructure facilities (*Project Finance*). Private sponsors take responsibility for financing and constructing, maintaining and managing the infrastructure facility during a determined time period. They cover their investment by charging user services on a concession basis.
Permanent Strategies	Representative office	A formal company that performs business activities in a foreign country in the name of the management.
	Branch office	Part of a domestic company that performs business activities in a foreign country, but does not have legal status.
	Joint venture company	Created by the joint investment of two or more companies, at least one of which is outside the host country of the joint venture.

Source: Lana Lovrenčić Butković et al. / Procedia - Social and Behavioral Sciences 119 (2014) 503 – 509

1.6 Case Study: Successful Implementation of Internationalization Strategies in Construction Firms

Several construction firms have successfully implemented internationalization strategies to expand their global footprint, enhance competitiveness, and improve financial performance. Few real-life examples of firms that have effectively navigated international markets are for example Skanska, Bechtel Corporation, and CCCC.

1.6.1 Skanska AB

Strategies: Skanska, a Swedish multinational construction company, has strategically expanded its operations globally through a combination of acquisitions, joint ventures, and strategic partnerships. The firm has focused on sustainable construction practices and innovation to differentiate itself in international markets.

Success: Skanska's internationalization strategies have enabled the company to secure major infrastructure projects worldwide, establish a strong presence in key markets, and build a reputation for quality and reliability.

Challenges: Challenges faced by Skanska include regulatory complexities, cultural differences, and geopolitical risks in various regions. Adapting to local market conditions and managing diverse project portfolios have been key challenges.

Financial Performance: Skanska's successful internationalization efforts have positively impacted its financial performance, leading to revenue growth, increased profitability, and enhanced market competitiveness. Securing a 7th position measuring International revenue $ 11,766.4 MIL, and total revenue $ 14,749.1 MIL (ENR, 2023).

1.6.2 Bechtel Corporation

Strategies: Bechtel, an American construction and engineering company, has implemented a diversified internationalization strategy by focusing on large-scale infrastructure projects, energy developments, and environmental initiatives globally. The firm has a strong track record of delivering complex projects in diverse markets.

Success: Bechtel's strategic approach to internationalization has positioned the company as a global leader in the construction industry, with a reputation for delivering high-profile projects on time and within budget.

Challenges: Bechtel has encountered challenges related to project complexity, regulatory environments, and geopolitical uncertainties in international markets. Managing supply chains, talent acquisition, and stakeholder relationships have been critical challenges.

Financial Performance: Bechtel's successful international expansion has contributed to its financial success, with sustained revenue growth, profitability, and a strong market position in the global construction sector. Securing a 19th position measuring International revenue $4,962.0 MIL, and total revenue $11,986.0 MIL (ENR, 2023).

1.6.3 China Communications Construction Company (CCCC)

Strategies: China Communications Construction Company (CCCC), a major Chinese construction firm, has strategically expanded into emerging markets by focusing on large-scale infrastructure projects, particularly in the transportation sector. The company has utilized a mix of investments, partnerships, and technology transfer to establish a global presence.

Success: CCCC's internationalization strategies have enabled the company to secure significant infrastructure projects in various countries, showcasing its expertise in bridge construction, port development, and road infrastructure.

Challenges: Challenges faced by CCCC include navigating complex regulatory environments, cultural differences, and political risks in international markets. Adapting to local labor practices, environmental regulations, and project financing requirements have been key challenges for the firm.

Financial Performance: CCCC's successful expansion into emerging markets has positively impacted its financial performance, leading to revenue growth, profitability, and a strengthened position as a key player in the global construction industry.

Securing a 3rd position measuring International revenue $ 23,526.5 MIL, and total revenue $ 130,765.3 MIL (ENR, 2023).

2 Financial Performance of Multinational Companies

In the field of international business, multinational companies (MNCs) play an important role during global economic activities, shaping cross-border investments. MNCs are characterized by their operations in multiple countries, developing their resources, expertise, and networks to expand their presence and capitalize on international opportunities.

Multinational Construction Companies (MNCCs) are a part of MNCs that operate within the construction sector, undertaking large-scale infrastructure projects, real estate developments, and engineering ventures across borders. An in-depth analysis of the financial status and capabilities of these firms is crucial to understand them.

The Financial Performance of MNCCs reflects the effectiveness of their internationalization strategies and operational efficiency. Studies have shown that the financial performance of MNCCs is influenced by various factors, including strategic controls, coordination mechanisms, and competitive strategies implemented across their global operations. MNCCs often employ a mix of strategic and financial controls to oversee their subsidiaries, evaluate performance metrics, and ensure alignment with corporate objectives (Horta *et al.*, 2016a).

The financial success of multinational construction companies (MNCCs) is closely linked to their internationalization strategies for international expansion, competitive positioning, and efficient operations in global markets. By understanding how MNCCs operate, the impact of diversification, and the importance of strategic controls, these companies can improve their financial performance, achieve sustainable growth, and become significant players in the international construction sector. This assessment is particularly important considering the necessity for large contractors to have the necessary resources and capabilities to undertake construction projects worldwide. (Horta et al., 2016a).

2.1 Measuring the financial performance of MNCC's

The MNCC's measure their financial performance using a variety of methods and financial ratios to assess their operational efficiency, profitability, and overall health. These companies often rely on a combination of traditional financial analysis tools and industry-specific performance indicators to evaluate their financial standing. Some key approaches include:

- **Balanced Scorecard Approach:** Some companies adopt the balanced scorecard framework to evaluate their financial performance comprehensively. This approach considers multiple perspectives beyond just financial metrics, including customer satisfaction, internal processes, and learning and growth initiatives.

- **Financial Ratio Analysis:** Financial ratios play an important role in evaluating the financial performance of multinational construction companies. The key financial ratios that are commonly used to assess their operational efficiency, profitability, and overall company health are shown in Table 4.

- **Performance Evaluation Models:** Multinational construction companies utilize performance evaluation models that go beyond traditional financial metrics. These models incorporate company size, macroeconomic factors, industry-related variables, and other non-financial indicators to provide a comprehensive assessment of performance as mentioned in the paper (Zhang et al., 2020).

- **Cash Flow Analysis:** Analyzing cash flows is essential for understanding the liquidity and financial stability of multinational construction companies. Cash flow statements help assess how well a company manages its cash inflows and outflows, providing insights into its ability to meet financial obligations.

- **Comparative Analysis:** Multinational construction companies often compare their financial performance with one another, within the same industry. This

approach allows for benchmarking against competitors, identifying strengths and weaknesses, and gaining insights into areas for improvement.

2.1.2 Importance of Choosing the Comparative Analysis Approach

By selecting the comparative analysis approach for this thesis on measuring the financial performance of MNCCs, this study is opting for a method that offers valuable insights into how MNCCs perform in comparison to each other. This approach allows for a detailed examination of financial ratios, operational efficiency, and overall health of selected MNCCs by directly comparing them. Through comparative analysis, one can identify industry trends, best practices, areas of competitive advantage, and potential areas for improvement within MNCCs. This method enables a deeper understanding of the financial landscape of MNCCs and provides a solid foundation for drawing meaningful conclusions and recommendations.

In the construction industry, researchers have conducted comparative analyses of financial performance to evaluate the strengths and weaknesses of different companies. A study by the International Journal for Multidisciplinary Research (IJFMR) compared the financial performance of state-owned and private construction companies in Indonesia, highlighting the impact of the COVID-19 disaster on their operations (Tiffany et al., 2024).

The study found that private construction companies had better long-term liability management performance capabilities than state-owned construction companies in 2021, indicating their ability to manage debt and equity effectively. However, state-owned construction companies were more efficient in managing receivables, inventory, and asset turnover to generate profits compared to private construction companies.

2.2 Financial Ratios in Construction Business

Table 4: Four main categories of financial ratios

Sl.no	Financial Ratio	Definition
1	Liquidity Ratio	A liquidity ratio indicates the company's ability to pay off short-term debts using the current assets. The two main ratios coming under liquidity ratios are: Current ratio and Quick ratio
2	Profitability Ratios	Profitability ratios indicate the company's ability to turn revenue into profit by utilizing its assets, equity, etc. The financial ratios in this category are: Gross profit, Return on assets and Return on equity
3	Leverage Ratios	Leverage ratios give information regarding how a company finances its assets and operations and the associated debts. It is also called the debt-to-equity ratio.
4	Efficiency Ratios	Efficiency ratios measure how well the company utilizes the generated assets and liabilities. The financial ratios in this category are: Equity turnover ratio and Working capital turnover ratio

Source: https://theconstructor.org/construction/financial-ratios-construction-business/566058/

The main financial key ratios that stand out are the current ratio, quick ratio, debt-to-equity ratio, working capital turnover ratio, and equity turnover ratio. Different companies employ different financial ratios based on the parameters that are studied.

No single ratio explains the overall performance of the business. Each ratio helps analyze a specific parameter. For example, a company's current ratio may be strong, but its debt-to-equity ratio can show too much debt. Comparing a specific ratio of one company with another is an excellent way to gauge the performance of the business (Zhang et al., 2020).

2.2.1 Liquidity Ratios

In the construction industry, effective management is crucial for survival due to its challenging nature. Contractors often face pressure to keep profit margins low when bidding for projects to stay competitive, which can negatively impact their liquidity. Research indicates that a lack of liquidity is a major factor leading to project failures or business failures. Liquidity is essential for meeting short-term obligations and is a critical resource for construction companies. Additionally, a contractor's liquidity is vital for managing multiple construction projects simultaneously. It directly influences a company's profits and consequently, its shareholders' wealth. Maintaining liquidity is essential for a company to maintain a good credit rating and reputation in the

market, which are crucial for preventing failure in the face of tough competition (Omopariola et al., 2021).

- **Current Ratio**

  The Current Ratio is a measure of a company's ability to pay off its short-term debts using its current assets. It is calculated by dividing current assets by current liabilities. A Current Ratio of 1 or higher is generally considered healthy, as it indicates that the company has enough current assets to cover its current liabilities. If less than 1 can indicate potential financial trouble.

$$Current\ Ratio = Current\ Assets/Current\ Liabilities \quad (1)$$

  Recommendation: a ratio of 1 or more.

- **Acid Test (Quick or Liquid Ratio)**

The Quick Ratio is a more conservative measure of a company's liquidity, as it excludes inventory from current assets. A ratio that measures the extent a business can cover its current liabilities with those current assets readily convertible to cash.

$$Quick\ Ratio = (Cash + Accounts\ Receivable + Cash\ Equivalents)/Current\ Liabilities \quad (2)$$

Recommendation: a ratio of 1.35 or more.

1.2.2 Profitability Ratios

Profitability is a key concern for stakeholders in the construction industry when making investment decisions. Profits can come from both operational and non-operational sources. Operational profit is derived from project activities, while non-operational profit comes from effective cash management, additional income streams, and savings from insurance plans. Profitability reflects a company's ability to generate income from its projects within a specific period.

Construction firms rely on retained profits for growth to avoid external lenders taking a stake in the company, which could weaken the profitability-growth connection. More profitable construction companies tend to gain market share and have better access to external finance, facilitating business growth, while less profitable competitors may struggle to grow. Using profitability as a measure of construction organizational performance reduces measurement uncertainty and aligns with established research standards. Therefore, profitability is closely linked to overall business performance in the construction industry (Omopariola et al., 2021).

- **Gross Profit Margin Ratio** measures the profitability of a company's operations. A higher gross profit margin indicates that a company is effectively managing its production costs and generating a good margin on its sales.

  Gross Profit Margin = (Total Revenue - Cost of Goods Sold) / Total Revenue (3)

  Recommendation: The gross profit margin range is typically around 10% to 20%.

- **Return on Assets (ROA) Ratio** is a measure of a company's profitability in relation to its total assets. This ratio matches net profits after taxes with the assets used to earn such profits. A high percentage rate can show if a company is well-managed and has a healthy return on assets.

  ROA =Net Income / Total Assets (4)

  Recommendation: a ratio of 15 % or more

- **Return on Equity (ROE) Ratio** measures the profitability of a company in relation to its shareholder equity. A ratio that measures the ability to realize an adequate return on the capital invested by the owners. A high ROE Ratio indicates that the company is effectively using its equity to generate profits.

  Return on Equity (ROE) =Net Income / Total Equity (5)

  Recommendation: a ratio of 25 % or more

1.2.3 Leverage Ratios

Leverage is a critical concept in financial management, shaping a company's risk exposure, debt repayment capacity, and opportunities for growth. It significantly influences the success of construction firms. Leverage refers to the relationship between a company's total liabilities and its current assets. Essentially, it indicates the ability of a company to use borrowed funds to finance its operations or investments. Construction companies with higher leverage tend to be more profitable, as leverage enables them to generate higher profits on borrowed capital compared to the cost of borrowing. In essence, leverage helps organizations enhance their revenue by earning more from borrowed funds than they pay in interest (Omopariola et al., 2021).

- **Debt-to-Equity Ratio** measures the proportion of a company's financing that comes from debt versus equity. It is calculated by dividing total debt by total equity A lower ratio indicates a more conservative financial structure, while a higher ratio suggests a more aggressive approach to financing grow, also indicates that the company is efficient in using its assets and liabilities for company sales.

$$\textit{Debt-to-Equity Ratio} = \textit{Total Debt} / \textit{Total Equity} \quad (6)$$

Recommendation: a ratio between 1.0 and 2.0

1.2.4 Efficiency Ratios

- **Working Capital Turnover Ratio** measures how efficiently a company uses its working capital to support its sales or revenue. A high Working Capital Turnover Ratio indicates that the company is effectively using its working capital to support its sales.

$$\textit{Working Capital Turnover Ratio} = \textit{Total Revenue} / \textit{Total Current Assets} \quad (7)$$

Recommendation: a ratio of more than 1.0

- **Equity Turnover Ratio** measures how efficiently a company uses its equity to drive revenue. It is calculated by dividing total sales or revenue by total equity. A high Equity Turnover Ratio indicates that the company is effectively using its equity to generate revenue. Equity turnover ratio considers the use of equity rather than capital.

$$Equity\ Turnover\ Ratio = Total\ Revenue / Total\ Equity \quad (8)$$

Recommendation: a ratio of 25 % or more

1.2.5 Additional Ratios for Assessing Financial Performance

- **Return on Investment (ROI) Ratio** measures the return on a company's investments. A higher ROI indicates that a company is effectively utilizing its assets and generating a good return on its investments.

$$ROI = (Net\ Income + Capital\ Expenditure) / (Total\ Assets - Total\ Debt) \quad (9)$$

Recommendation: a ratio more than 10%.

- **Return on Sales (ROS) Ratio** measures the profitability of a company's sales. A higher ROS indicates that a company is generating more profit per euro of sales.

$$ROS = Net\ Income / Total\ Revenue \quad (10)$$

Recommendation: a ratio of 5 % or more

3 Specifics of the Construction Industry

This chapter is focused on the latest trends and technological advancements that shape the field of construction. It serves as a comprehensive exploration of the evolving nature of construction practices, emphasizing important factors that affect the direction of the sector.

The Construction & Engineering Working Capital Report 2023 offers valuable insights into the financial performance of the construction industry, focusing on the financial year, best and worst performance, and international benchmarking.

Table 5: Financial year, best and worst performance, and international benchmarking

Construction & Engineering - Financial Year				Best & Worst				International Benchmarking			
Days	2022	2023	Change	Days	Best	Worst	Spread	Days	Asia	EU	US
DSO	62.9	56.9	(6.0)	DSO	27.5	78.4	50.9	DSO	140.5	89.0	81.3
DIO	25.7	22.8	(2.9)	DIO	-	89.4	89.4	DIO	66.8	71.2	64.7
DPO	60.0	50.2	(9.8)	DPO	130.1	5.9	(124.2)	DPO	91.7	92.5	48.7
DWC	39.5	38.9	(0.6)	DWC	1.8	75.9	74.1	DWC	116.5	74.6	89.5

Source: https://a.storyblok.com/f/186891/x/84f7a6843c/mcgrathnicol_report_working-capital-2023-web_v01.pdf

The financial year 2023 saw a 7% increase in nominal value added and a 6% increase in nominal gross construction spending. However, much of the growth is likely driven by price inflation rather than volume. The industry is facing challenges such as volatility in material prices, increasing labor costs, ongoing shortage of skilled labor, high interest rates, and tighter lending standards. Despite these challenges, the Associated Builders and Contractors (ABC) identified expectations for an increase in profit margins and staffing, particularly in the first half of 2024 (Engineering and construction industry outlook, 2024).

In terms of best and worst performance, the Construction industry saw a 0.6-day decrease in Days Working Capital (DWC) to 38.9 days in FY23. This net change masked larger offsetting movements in Days Sales Outstanding (DSO), Days Inventory Outstanding (DIO), and Days Payable Outstanding (DPO). Companies shortened their customer collection cycle (DSO down 6 days to 56.9 days) and held

less inventory (DIO down 2.9 days to 22.8 days), but paid suppliers more quickly (DPO down 9.8 days to 50.2 days).

International benchmarking in Table 5, highlights the differences in financial performance across regions. For instance, the Asian and European markets saw an increase in DWC.

1.1 Technological Advancements in Construction

Technological advancements play an important role in revolutionizing the construction industry. From the use of Building Information Modelling (BIM) for project visualization and coordination to the application of 3D printing for creating complex structures, the construction field is embracing cutting-edge technologies to optimize operations, improve accuracy, and enhance project outcomes.

The adoption of digital technologies in the construction sector is on the rise, with a particular emphasis on their potential to improve occupational health and safety practices. A systematic mapping review conducted by Trask and Linderoth (2023) provides evidence of how these technologies contribute to enhanced safety outcomes, signaling a shift towards innovative solutions for addressing safety challenges in construction. The findings of the review suggest that digital technologies are increasingly integrated into overall project management and execution processes. This trend reflects the growing adoption of technology in the construction industry and signifies a paradigm shift towards improved efficiency and safety through innovative digital solutions (Trask and Linderoth, 2023).

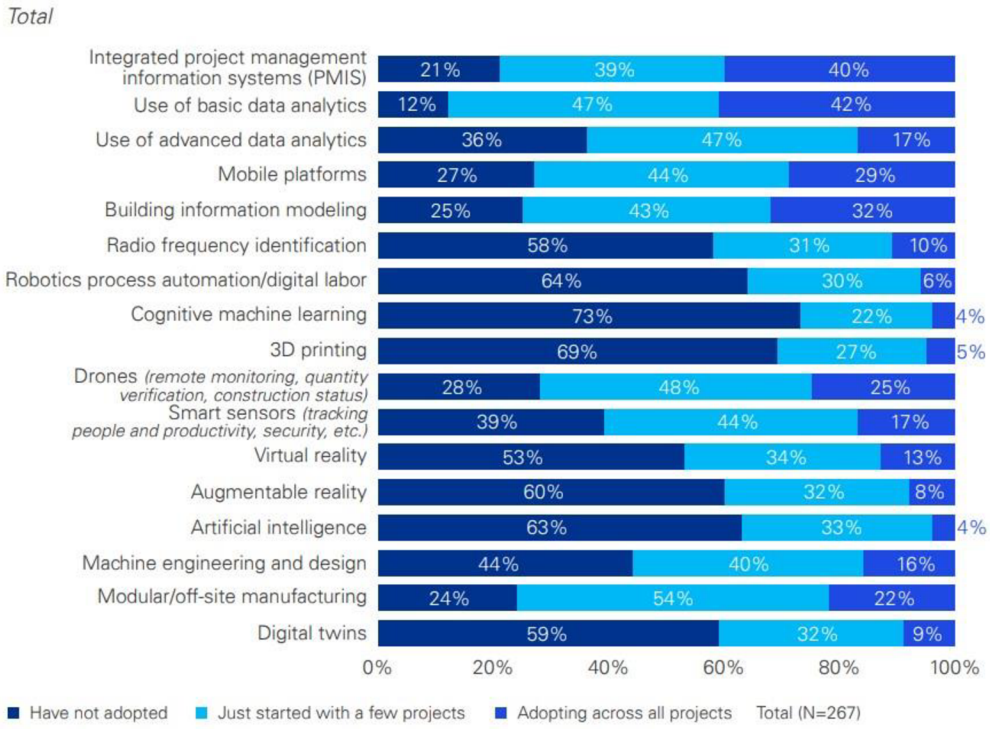

Figure 6: Level of adoption of each of the following technologies
Source: Global construction survey 2023

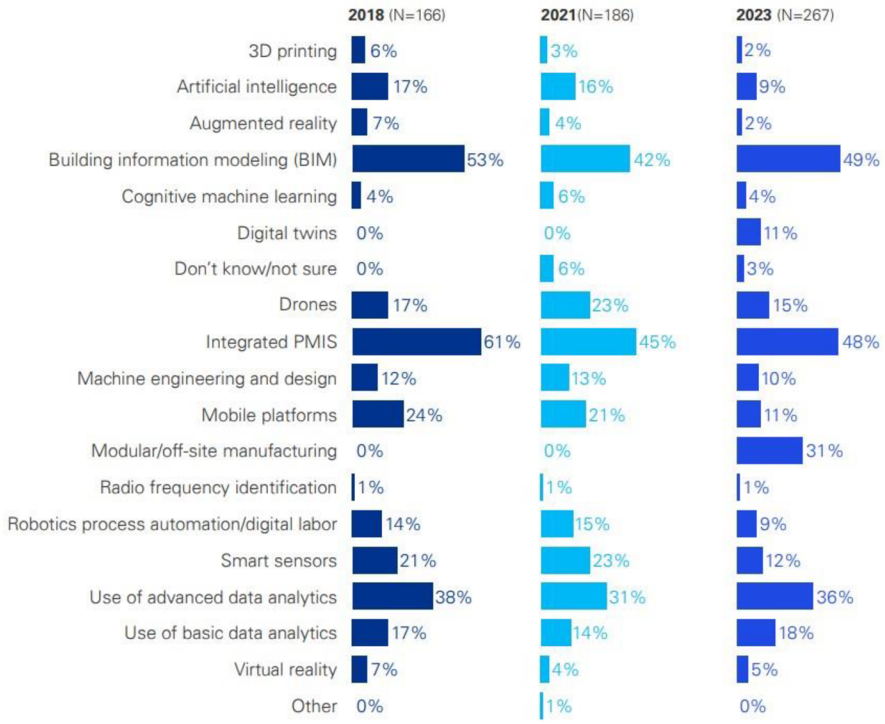

Figure 7: Potential to deliver the greatest overall ROI
Source: Global construction survey 2023

According to the 2023 Global Construction Survey by KPMG International, Figures 6 and 7 show the most commonly adopted technologies in the construction industry along with their potential to provide a good overall ROI; some are as follows:

- **Mobile Platforms**: 81% of respondents have adopted or are starting to adopt mobile platforms.
- **Robotics Process** Automation/Digital Labor: 43% are either using or starting to use RPA.
- **Artificial Intelligence:** 40% are adopting AI.
- **Virtual Reality**: 56% are either using or starting to use VR.

These technologies are being increasingly embraced in the construction sector to enhance efficiency and productivity.

3.2 Technological Trends in Construction

Technological trends in the construction sector are shaping the industry's landscape, with a growing emphasis on innovation driven by environmental, social, and governance (ESG) considerations (Figure 8). As (Cruz et al., 2023) emphasizes the role of ESG considerations as an inspiration for technological trends within the construction industry, particularly in areas such as green building materials and renewable energy integration.

Figure 8: ESG trend
Source: https://frankxue.com/pdf/wang23emerging.pdf

Technological trends in construction are shifting towards solutions that prioritize environmental conservation, social equity, and governance transparency, reflecting the growing emphasis on ESG principles (Cruz et al., 2023).

There is a strong commitment to ESG from the respondents as illustrated in Figure 9. Nearly 54 percent fully envision the benefits of ESG and are fully pursuing maturity and improvement, whereas, nearly 37 percent see some benefit in ESG and are using targeted approach. In addition, nearly 50 percent of E&C firms view implementing ESG into capital projects and programs as a competitive advantage.

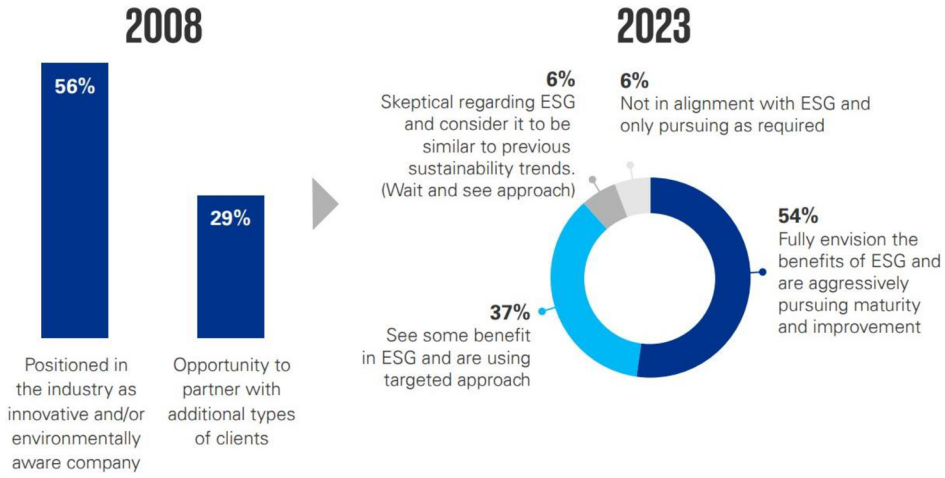

Figure 9: Benefits of ESG trend
Source: https://assets.kpmg.com/content/dam/kpmg/be/pdf/2023/BE-2023-Global-Construction-survey.pdf

Recent studies and reports emphasize critical trends that are reshaping the industry, including the increasing adoption of prefabricated structures for various projects, the integration of sustainable practices through green technology, and the utilization of advanced tools like drones, 3D printing, virtual and augmented reality in construction processes. These trends not only enhance operational efficiency but also pave the way for sustainable and cost-effective construction practices.

3.3 The Impact of Technology and Trends

The impact of technological advancements and the latest trends in the construction industry on the internationalization and financial performance of international construction companies is significant. These factors influence the two main aspects:

3.3.1 Internationalization

Technological Advancements: The adoption of technologies like drones, 3D printing, and Building Information Modelling (BIM) has facilitated the internationalization of construction companies by improving communication, project visualization, and coordination across borders. These technologies have enabled companies to operate efficiently in diverse markets, leading to increased global competitiveness (Schönbeck et al., 2020).

Latest Trends: Trends such as the use of modular/off-site manufacturing and innovative delivery methods like Public-Private Partnerships have streamlined international projects, allowing companies to expand their operations and services to new countries more effectively.

3.3.2 Financial Performance

Technological Advancements: Advanced technologies have optimized construction processes, reducing costs, and improving project outcomes, ultimately enhancing the financial performance of international construction companies. For example, the use of robotics process automation and artificial intelligence has led to increased productivity and cost savings (Schönbeck et al., 2020).

Latest Trends: Embracing trends like mobile platforms and AI have enabled construction companies to enhance their financial performance through improved project management, resource allocation, and decision-making. The adoption of these trends has contributed to better financial outcomes and increased profitability.

3.4 International Business Growth and Regional Aspects

The construction industry plays a vital role in the economies of France and Austria, with construction contractors in both countries seeking international growth opportunities. This section of the thesis consists of general analysis, discussing the international business growth of French and Austrian construction contractors, focusing on their regional aspects and running a comparative analysis using the latest sources.

3.4.1 French Construction Contractors

The French construction industry is a significant contributor to the country's economy, with a market size of over €130 billion in 2023. The industry is dominated by a few large players, including Bouygues, Vinci, and Eiffage, which have a strong presence in both domestic and international markets. These companies have been actively pursuing internationalization strategies to expand their operations and improve their financial performance (French Construction Industry Association, 2023) (Deloitte, 2024).

Market Diversification

One of the key internationalization strategies adopted by French construction contractors is market diversification. According to a recent report by the French Ministry of Economy and Finance (2024), French contractors have been expanding their operations in emerging markets, particularly in North Africa and the Middle East, to reduce their dependence on the domestic market. For example, Bouygues has been actively pursuing acquisitions and joint ventures in these regions to establish a stronger presence (Bouygues report, 2023).

In addition to market diversification, French construction contractors have also been developing mergers and acquisitions to expand their international footprint. A study by the International Journal of Strategic Property Management (2023) found that French contractors have been particularly active in acquiring foreign companies to gain access to new technologies, expertise, and markets. For instance, Vinci's

acquisition of Cobra IS in 2021 has strengthened its position in Spain and other Latin American countries (Vinci report, 2021).

The financial performance of top-performing French construction contractors has been strong, with many of them reporting steady growth in revenue and profitability. According to the Deloitte Global Powers of Construction report (2024), Bouygues reported a revenue of €41.2 billion in 2023, an increase of 8% from the previous year, while its net profit also increased by 11% to €1.4 billion. Similarly, Vinci reported a revenue of €49.3 billion in 2023, with a net profit of €2.9 billion, reflecting the company's successful internationalization strategies.

3.4.2 Austrian Construction Contractors

The Austrian construction industry is a significant contributor to the country's economy, with a market size of over €35 billion in 2023. The industry is dominated by a few large players, including Strabag, Porr, and Swietelsky, which have a strong presence in both domestic and international markets. These companies have been actively pursuing internationalization strategies to expand their operations and improve their financial performance (Deloitte, 2024).

One of the key internationalization strategies adopted by Austrian construction contractors is a multi-domestic approach, focusing on expanding their operations in various countries while adapting to local market conditions. According to a recent report by the Austrian Federal Ministry for Digital and Economic Affairs (2024), Austrian contractors have been particularly successful in Central and Eastern European markets, developing their expertise in infrastructure projects, such as highways, bridges, and tunnels. For instance, Strabag has made significant investments in countries like the Czech Republic, Slovakia, and Russia to strengthen its regional presence (Strabag report, 2023).

In addition to the multi-domestic strategy, Austrian construction contractors have also been exploring mergers and acquisitions to expand their international footprint. A study by the International Journal of Strategic Property Management (2023) found that Austrian contractors have been actively acquiring foreign companies to gain

access to new technologies, expertise, and markets. For example, Porr's acquisition of a Swiss construction firm in 2022 has helped the company to strengthen its position in the European market (Porr report, 2024).

The financial performance of top-performing Austrian construction contractors has been strong, with many of them reporting steady growth in revenue and profitability. According to the Deloitte Global Powers of Construction report (2024), Strabag reported a revenue of €15.8 billion in 2023, an increase of 7% from the previous year, while its net profit also increased by 9% to €550 million. Similarly, Porr reported a revenue of €7.2 billion in 2023, with a net profit of €280 million, reflecting the company's successful internationalization strategies.

3.4.3 Comparative Analysis

The construction industry is a significant contributor to the economies of both France and Austria, with a strong presence of multinational contractors in both countries. This comparative analysis aims to examine the internationalization strategies and financial performances of top-performing French and Austrian construction contractors.

Internationalization Strategies

- French construction contractors have focused on market diversification and acquisitions to expand their operations globally, particularly in emerging markets like North Africa and the Middle East (Deloitte, 2024).

- Austrian construction contractors have adopted a multi-domestic approach, concentrating on Central and Eastern European markets, with a strong emphasis on infrastructure and transportation projects (Austrian Federal Ministry for Digital and Economic Affairs, 2024).

Financial Performance

- Top-performing French contractors such as Bouygues and Vinci have reported steady growth in revenue and profitability, showcasing successful financial performance (Deloitte, 2024).

- Austrian construction contractors like Strabag and Porr have also demonstrated strong financial performance, with notable revenue growth and profitability (Deloitte, 2024).

Market Presence and Expertise

- French contractors have established a strong presence in both domestic and international markets, with a focus on strategic acquisitions and joint ventures to enhance their market share (Bouygues, 2024).

- Austrian contractors have excelled in infrastructure and transportation projects, with a solid track record in road construction, railway development, and infrastructure upgrades (Swietelsky, 2024).

Regional Strengths and Market Opportunities

- French contractors have developed their expertise in infrastructure projects to expand into new markets, diversifying their operations and reducing dependence on the domestic market (French Ministry of Economy and Finance, 2024).

- Austrian contractors have capitalized on public and private investments in infrastructure projects and real estate demand to drive growth in the construction sector, enhancing their market presence and competitiveness (Austrian Federal Ministry for Digital and Economic Affairs, 2024).

4 Comparative Financial Performance Analysis

In the previous chapter, a comparative analysis of French and Austrian construction contractors was discussed, highlighting their distinct internationalization strategies and financial performances. This chapter takes a deeper analysis of the financial performance of three top-performing companies such as VINCI, Bouygues, and Strabag SE. By examining their financial metrics, such as revenue, profitability, and efficiency, more insights can be found into their financial strengths and weaknesses and how they have adapted to the challenges and opportunities of the global construction market. This analysis will provide a practical perspective on the financial performance of these companies, shedding light on their strategies for success and offering lessons for other construction companies seeking to improve their financial performance in the global market.

4.1 Strategic Selection of Companies for Comparative Analysis

The selection of VINCI, Bouygues, and Strabag SE for the comparative analysis in this thesis is a deliberate choice that aligns with the focus on the degree of internationalization within the construction industry. Europe's dominance in the construction sector is well-established, as highlighted in previous sections (Figure 3). These three firms were chosen due to their prominent positions in the global construction industry, as evidenced by their rankings in the prestigious ENR (2023) and Global Construction Chartbook (2023) reports.

Initial Observation and Strategic Selection

The initial observation of their top rankings in generating the highest revenue by international operations played an important role in the selection of these companies. VINCI, as the top-ranked contractor, was considered a neutral player and might showcase a balanced approach and provide a benchmark for internationalization success and financial performance. Bouygues and Strabag SE, as French and Austrian contractors respectively, were chosen for their regional significance. This

strategic selection allowed for a comprehensive understanding of these companies' evolution from local players to global industry leaders.

Regional Focus and Contextual Understanding

Incorporating regional aspects into the thesis, it provided insights into the origins and growth pathways of these multinational construction firms within their home countries. This approach provides a contextual foundation for analyzing their internationalization strategies, decision-making processes, and financial outcomes in foreign markets. The comparative analysis sought to uncover valuable insights into how these companies navigated the transition from local to global prominence.

Regional Focus and Unique Factors

The regional focus on France and Austria adds a contextual layer to the analysis and enables a deeper exploration of the unique factors that shaped the development of VINCI, Bouygues, and Strabag SE within their respective markets. By understanding their roots and growth paths, the thesis aimed to draw meaningful comparisons and draw out key findings regarding their internationalization success, financial performance, and competitive positioning in the global construction industry.

4.2 Data Collection Methodology

In conducting a comparative analysis of the financial performance of Strabag SE, Vinci, and Bouygues multinational construction companies, the financial data was collected with careful consideration to ensure reliability and accuracy. The primary sources of data included annual reports, financial statements, and other relevant documents published by the companies. These sources offer comprehensive insights into the financial health, operational efficiency, and overall performance of the selected multinational construction companies.

Despite plenty of information available in annual reports and financial statements, challenges were encountered during the data collection process. These challenges included inconsistencies in reporting formats, and varying accounting standards. To

address these challenges, efforts were made to standardize the data collection process, and cross-reference information from multiple sources.

4.3 Selection Criteria for Financial Ratios

The selection of financial ratios for analysis was based on specific criteria designed to meet the objectives of the study. The chosen financial ratios include liquidity ratios (such as the current ratio and quick ratio), profitability ratios (including gross profit ratio, return on assets, and return on equity), leverage ratios (such as the debt-to-equity ratio), efficiency ratios (like the working capital turnover ratio and equity turnover ratio) and additional profitability ratios (like the return of sales, and return on investments).

These specific financial ratios were selected for their relevance to the construction industry and their ability to provide insights into the financial performance of the selected companies. The liquidity ratios assess the companies' ability to meet short-term obligations, while profitability ratios determine their ability to generate profits. Leverage ratios indicate the companies' debt management practices and efficiency ratios measure how effectively they utilize assets and equity to drive revenue.

4.4 Analysis Time Period

The financial analysis covers a time period of the past five years, from 2018 to 2022. This time frame was chosen to provide a recent and relevant view of the financial performance of Strabag SE, Vinci, and Bouygues. Importantly, this period includes the years affected by the COVID-19 pandemic, offering insights into how the companies navigated through challenging economic conditions and industry disruptions.

By analyzing the financial data over the past five years, this study aims to capture trends, patterns, and performance indicators that can inform strategic decision-making and offer valuable insights into the financial landscape of the selected multinational construction companies. This time frame allows for a comprehensive

evaluation of the companies' financial health, operational efficiency, and overall performance, providing a solid foundation for the comparative analysis. Additionally, focusing on a shorter time frame can help ensure the analysis remains focused and manageable within the scope of a master's thesis.

4.5 Calculation of Financial Ratios

The collected financial data underwent careful processing and organization to extract meaningful insights into the financial performance of Strabag SE, Vinci, and Bouygues companies. The following steps were undertaken to ensure a comparative financial analysis.

Processing and Organization of Financial Data

The financial data spanning the years 2018-2022 that was collected from the annual reports and financial statements of the three multinational construction companies were systematically organized into an Excel table, encompassing essential financial metrics such as Total Current Assets, Total Current Liabilities, Revenue, Net Income, and various ratios. Each column in the Excel table corresponded to a specific financial metric, facilitating structured data analysis.

Tools and Software Utilized for Data Analysis

The primary tool employed for data analysis was Microsoft Excel, a versatile spreadsheet software renowned for its data manipulation capabilities. Excel facilitated the organization, calculation, and other AI software for visualization of the financial data, enabling the calculation of intricate financial ratios with precision and efficiency.

Analytical Techniques for Financial Ratio Calculation

Various analytical techniques were employed to calculate and interpret the financial ratios derived from the collected data. The formulas for each ratio, were applied to the corresponding data points within the Excel table. These ratios were calculated consistently across all three companies to ensure a fair and accurate comparison.

Subsequently, the calculated ratios were interpreted to assess the financial health, profitability, and efficiency of the companies.

By following a structured approach in processing and analyzing the financial data, utilizing tools, and employing analytical techniques to calculate and interpret financial ratios, a comprehensive evaluation of the financial performance of Strabag SE, Vinci, and Bouygues was achieved, contributing to a robust and insightful analysis for the master thesis by discussing each of calculated financial ratios, trends over the analysis period, and any notable findings or patterns that emerged is as follows:

4.5.1 Liquidity Ratios

In the analysis of the liquidity ratios for Strabag SE, Vinci, and Bouygues, including the current ratio and quick ratio results, provides valuable insights into the liquidity positions, highlighting strengths and areas for improvement in managing short-term obligations and liquidity risks.

Table 6: Current and Quick ratios with quick assets calculation (VINCI)

Year	Total Current Assets	Total Current Liabilities	Current Ratio	Quick Assets	Quick Ratio
2018	€ 28,621	€ 31,048	0.92	€ 21,861	0.70
2019	€ 30,229	€ 33,497	0.90	€ 22,999	0.69
2020	€ 32,039	€ 33,468	0.96	€ 24,554	0.73
2021	€ 35,353	€ 42,052	0.84	€ 27,235	0.65
2022	€ 41,070	€ 47,939	0.86	€ 31,013	0.65

Year	Trade and Other Receivables	Other Current Financial Assets	Current Tax Assets	Cash and Cash Equivalents	Total Quick Assets
2018	€ 13,584	€ 37	€ 280	€ 7,960	€ 21,861
2019	€ 14,523	€ 53	€ 166	€ 8,257	€ 22,999
2020	€ 12,493	€ 30	€ 266	€ 11,765	€ 24,554
2021	€ 15,832	€ 100	€ 238	€ 11,065	€ 27,235
2022	€ 18,092	€ 84	€ 259	€ 12,578	€ 31,013

Source: (own processing)

Table 7: Current and Quick ratios with quick assets calculation (STRABAG SE)

Year	Total Current Assets	Total Current Liabilities	Current Ratio	Quick Assets	Quick Ratio
2018	€ 6,791.69	€ 5,587.65	1.22	€ 2,399.23	0.43
2019	€ 7,000.96	€ 6,050.39	1.16	€ 2,362.82	0.39
2020	€ 6,981.09	€ 5,643.37	1.24	€ 4,727.46	0.84
2021	€ 7,236.21	€ 6,007.56	1.20	€ 4,775.65	0.79
2022	€ 7,391.66	€ 6,464.75	1.14	€ 4,771.27	0.74

Year	Trade Receivables	Other Receivables	Other Current FInancial Assets	Current Tax Assets	Cash and Cash Equivalents	Total Quick Assets
2018	€ 1,736	€ 36	€ 293	€ 40	€ 293	€ 2,399
2019	€ 1,701	€ 39	€ 290	€ 44	€ 290	€ 2,363
2020	€ 1,512	€ 42	€ 268	€ 48	€ 2,857	€ 4,727
2021	€ 1,447	€ 46	€ 267	€ 52	€ 2,963	€ 4,776
2022	€ 1,681	€ 50	€ 253	€ 86	€ 2,702	€ 4,771

Source: (own processing)

Table 8: Current and Quick ratios with quick assets calculations (BOUGYUES)

Year	Total Current Assets	Total Current Liabilities	Current Ratio	Quick Assets	Quick Ratio
2018	€ 17,968	€ 19,078	0.94	€ 12,050.00	0.63
2019	€ 22,500	€ 19,446	1.16	€ 13,004.00	0.67
2020	€ 19,085	€ 19,384	0.98	€ 13,389.00	0.69
2021	€ 22,933	€ 22,138	1.04	€ 16,820.00	0.76
2022	€ 29,463	€ 29,917	0.98	€ 20,122.00	0.67

Year	Trade Receivables	Other Receivables	Other Current FInancial Assets	Current Tax Assets	Cash and Cash Equivalents	Total Quick Assets
2018	€ 6,145	€ 2,707	€ 10	€ 260	€ 2,928	€ 12,050
2019	€ 6,288	€ 2,828	€ 7	€ 307	€ 3,574	€ 13,004
2020	€ 5,890	€ 3,046	€ 16	€ 213	€ 4,224	€ 13,389
2021	€ 6,641	€ 3,485	€ 24	€ 169	€ 6,501	€ 16,820
2022	€ 9,573	€ 4,475	€ 32	€ 306	€ 5,736	€ 20,122

Source: (own processing)

Note: Throughout all charts a uniform colouring pattern is used to help flow and clarity of representation of companies VINCI (Blue), STRABAG SE (Green), and BOUGYUES (Orange).

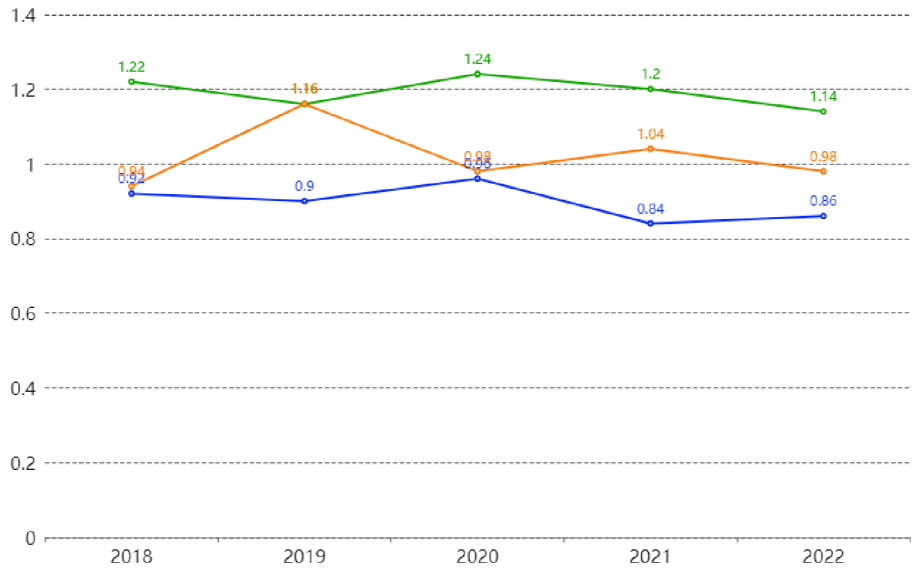

Figure 10: Comparision of current ratios (2018-2022)
Source: (own processing)

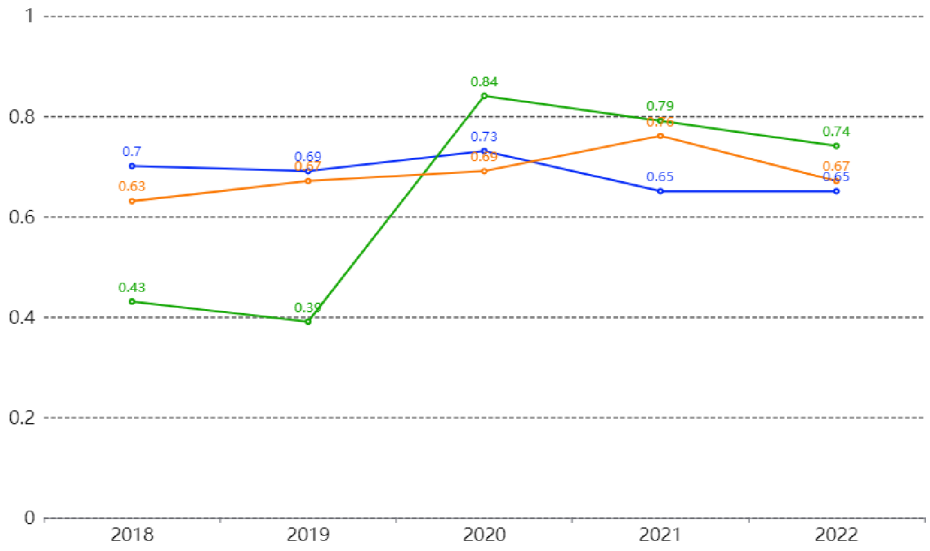

Figure 11: Comparision of quick ratios (2018-2022)
Source: (own processing)

The chart (Figure 10) clearly shows the trends in the current ratios of the three companies over the five-year period. Strabag SE consistently maintains a higher

current ratio compared to Vinci and Bouygues, indicating a stronger position in covering its current liabilities with its current assets.

The quick ratio is calculated using quick assets (Quick Assets = Cash + Accounts Receivable + Cash Equivalents), the values in that are considered to maintain consistency and fair comparision in Table 6,7,8. The chart in (Figure 11) illustrates the trends in the quick ratios of the three companies over the five-year period. Notably, none of the companies consistently meet the recommended quick ratio of 1.35 or more, indicating potential liquidity risks. Strabag SE shows a significant improvement in 2020, surpassing the other two companies.

Key Findings

- Strabag SE demonstrated a superior current ratio compared to its counterparts (Figure 10), indicating a robust ability to meet short-term obligations.

- Despite none meeting the ideal quick ratio threshold (Figure 11), Strabag SE's notable improvement in 2020 suggests enhanced liquidity management.

Implications and Recommendations

- Strabag SE's consistent strength in current ratios positions it favorably for short-term financial stability.

- Vinci and Bouygues should focus on improving their quick ratios to enhance liquidity and reduce potential risks.

- Continuous monitoring and adjustment of liquidity management strategies are crucial for all companies to ensure financial resilience.

4.5.2 Profitability Ratios Analysis

The line chart provides a visual comparison of the relative contributions of each ratio such as the gross profit ratio (Figure 12), return on assets (Figure 13), and return on equity (Figure 14), to the overall profitability of each company over the 5-year period. The key findings and trends observed in the chart can be summarized to highlight the best-performing company based on the profitability ratios analyzed.

Table 9: Three main profitability ratios with metrics (VINCI)

Year	Total Revenue	COGS excluding D&A	Gross Profit Margin	Net Income	Total Assets	ROA	Total Equity	ROE
2018	€ 43,519	32,014	26%	€ 3,057	€ 75,357	4%	€ 19,818	15%
2019	€ 48,053	39,081	19%	€ 3,408	€ 91,102	4%	€ 23,042	15%
2020	€ 43,234	36,728	15%	€ 1,015	€ 91,165	1%	€ 23,173	4%
2021	€ 49,396	40,778	17%	€ 2,195	€ 100,816	2%	€ 24,771	9%
2022	€ 61,675	50,862	18%	€ 4,417	€ 111,991	4%	€ 29,409	15%

Source: (own processing)

Table 10: Three main profitability ratios with metrics (STRABAG SE)

Year	Total Revenue	COGS excluding D&A	Gross Profit Margin	Net Income	Total Assets	ROA	Total Equity	ROE
2018	€ 15,222	13,778	9%	€ 362.78	€ 11,568	3%	€ 3,654	10%
2019	€ 15,669	13,826	12%	€ 378.56	€ 12,251	3%	€ 3,856	10%
2020	€ 14,750	12,994	12%	€ 399.06	€ 12,134	3%	€ 4,108	10%
2021	€ 15,299	13,368	13%	€ 596.40	€ 12,226	5%	€ 4,072	15%
2022	€ 17,026	15,111	11%	€ 480.13	€ 12,684	4%	€ 4,025	12%

Source: (own processing)

Table 11: Three main profitability ratios with metrics (BOUGYUES)

Year	Total Revenue	COGS excluding D&A	Gross Profit Margin	Net Income	Total Assets	ROA	Total Equity	ROE
2018	€ 35,555	29,455	17%	€ 1,450	€ 39,187	4%	€ 11,032	13%
2019	€ 37,929	34,049	10%	€ 1,320	€ 39,354	3%	€ 11,800	11%
2020	€ 34,694	31,076	10%	€ 770	€ 40,612	2%	€ 11,872	6%
2021	€ 37,589	33,851	10%	€ 1,305	€ 44,642	3%	€ 12,789	10%
2022	€ 44,322	40,264	9%	€ 1,131	€ 60,595	2%	€ 13,932	8%

Source: (own processing)

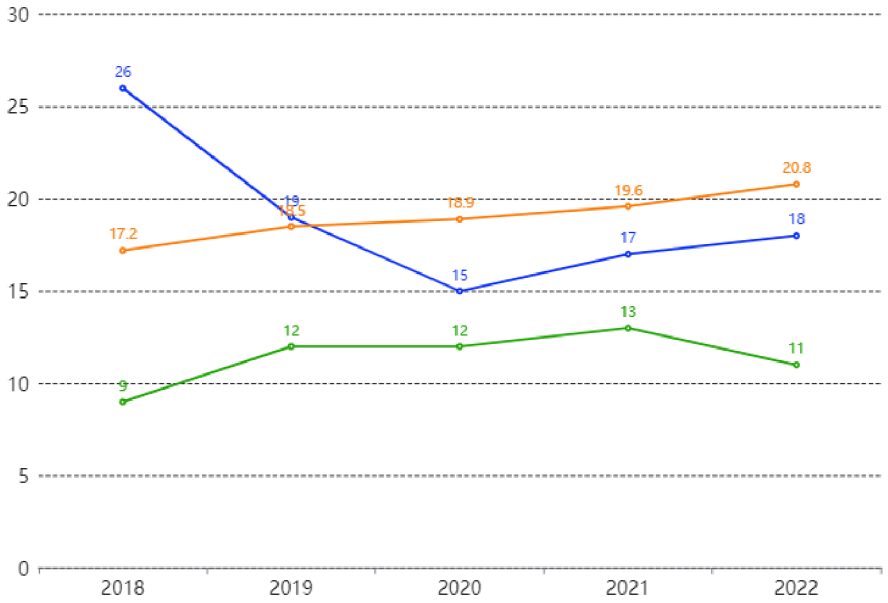

Figure 12: Comparision of Gross profit ratio in percentage (2018-2022)
Source: (own processing)

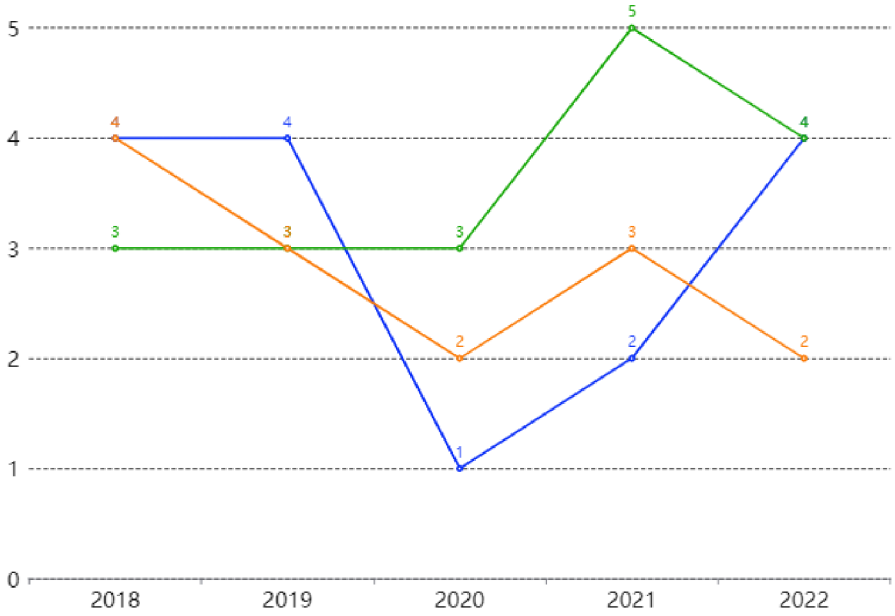

Figure 13: Comparision of return on assets ratio in percentage (2018-2022)
Source: (own processing)

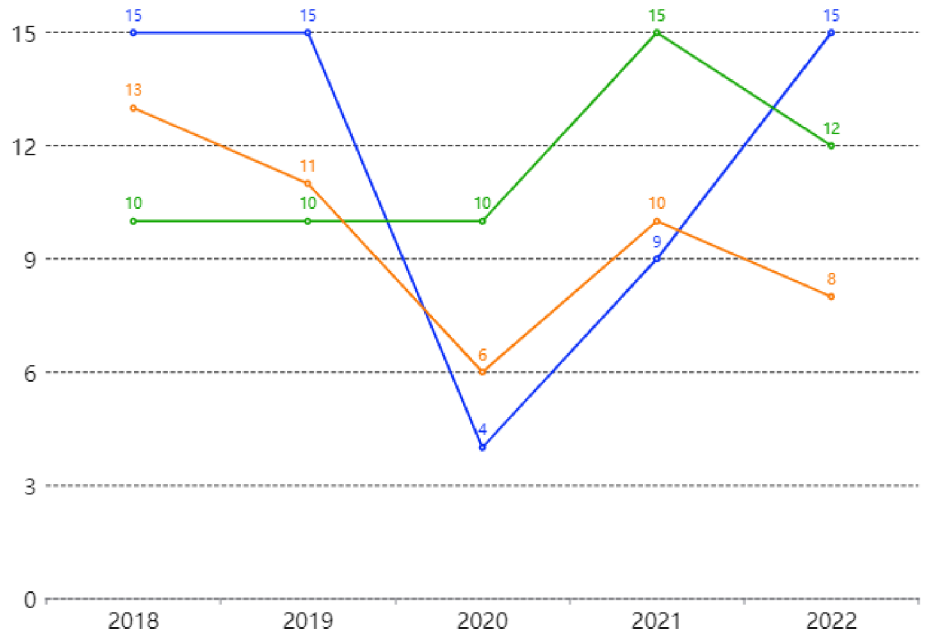

Figure 14: Comparision of return on equity ratio in percentage (2018-2022)
Source: (own processing)

Based on these average profitability ratios, Vinci appears to be the best-performing company across all three ratios, with higher average values for Gross Profit Ratio, Return on Assets, and Return on Equity compared to Bouygues and Strabag SE.

Key Findings and Trends

- Vinci consistently maintained a strong performance across all three ratios. The average profitability ratios for Vinci were higher than those of Bouygues and Strabag SE. In 2018 and 2019, Vinci had the highest ROE, ROA, and Gross Profit Ratio among the three companies. In 2022, Vinci's ROE and Gross Profit Ratio were the highest (Figure 12,13,14).

- Bouygues had a relatively stable performance across the three ratios, with a slight decline in ROE and Gross Profit Ratio in 2020. However, Bouygues had the highest ROA in 2018 and 2021, indicating a stronger asset utilization compared to the other two companies.

- Strabag SE had a mixed performance across the three ratios. In 2018 and 2019, Strabag SE had the highest ROA, while in 2022, it had the highest ROE. However,

Strabag SE's Gross Profit Ratio declined significantly in 2020, which affected its overall profitability.

Implications and Recommendations

- Vinci's Strength: Vinci's consistent strong performance across all three ratios indicates a robust profitability structure. It should continue to focus on maintaining its strong asset utilization and profitability ratios.

- Bouygues' Opportunities: Bouygues' strong asset utilization in 2018 and 2021 suggests potential for improvement in its profitability ratios. It should focus on enhancing its ROE and Gross Profit Ratio to further strengthen its financial performance.

- Strabag SE's Challenges: Strabag SE's mixed performance across the three ratios highlights the need for a more consistent approach to profitability. It should focus on improving its Gross Profit Ratio in 2020 and maintaining its strong ROA and ROE in future years.

4.5.3 Leverage Ratios

In the analysis of leverage ratios for Strabag SE, Vinci, and Bouygues, the debt-to-equity ratio was considered. A line chart was used to visualize the debt levels in (Figure 15) of the three companies over a 5-year period.

Table 12: Debt to equity ratio with metrics (VINCI)

Year	Total Equity	Total Debt	Debt-to-Equity Ratio
2018	€ 19,818	€ 15,554	0.78
2019	€ 23,042	€ 21,654	0.94
2020	€ 23,173	€ 17,989	0.78
2021	€ 24,771	€ 19,539	0.79
2022	€ 29,409	€ 18,536	0.63

Source: (own processing)

Table 13: Debt to equity ratio with metrics (STRABAG SE)

Year	Total Equity	Total Debt	Debt-to-Equity Ratio
2018	€ 3,653.77	€ 1,218.28	0.33
2019	€ 3,855.90	€ 1,143.53	0.30
2020	€ 4,108.22	€ 1,747.23	0.43
2021	€ 4,071.82	€ 1,937.18	0.48
2022	€ 4,025.24	€ 1,927.70	0.48

Source: (own processing)

Table 14: Debt to equity ratio with metrics (BOUGYUES)

Year	Total Equity	Total Debt	Debt-to-Equity Ratio
2018	€ 11,032	€ 3,612	0.33
2019	€ 11,800	€ 2,222	0.19
2020	€ 11,872	€ 1,981	0.17
2021	€ 12,789	€ 941	0.07
2022	€ 13,932	€ 7,440	0.53

Source: (own processing)

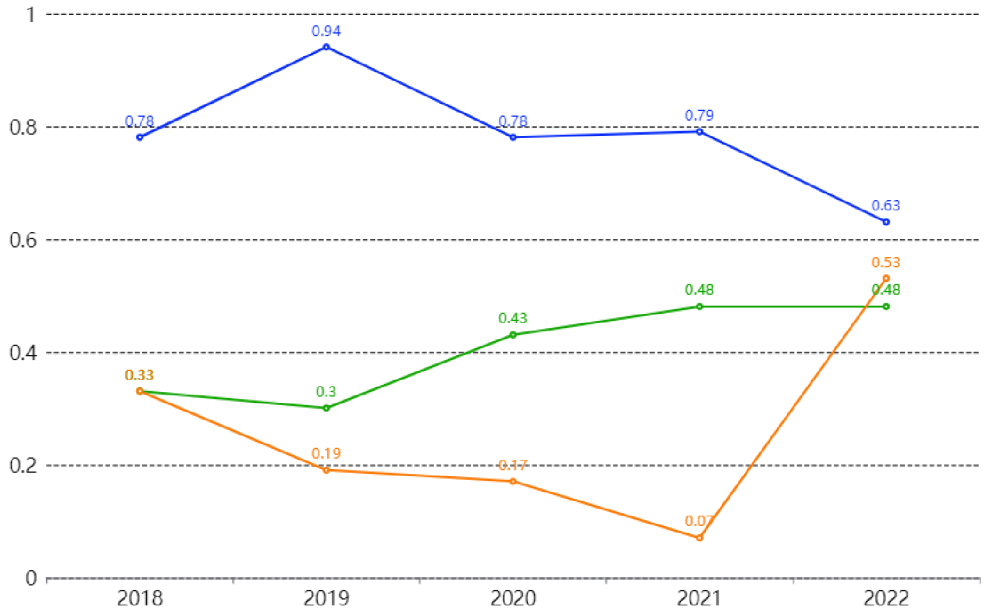

Figure 15: Comparision of debt to equity ratio in percentage (2018-2022)
Source: (own processing)

Key Findings and Trends

- Vinci's debt-to-equity ratio fluctuated over the 5-year period, with a significant increase in 2019 followed by a decrease in 2020 and 2021. However, Vinci's debt-to-equity ratio increased again in 2022, indicating a higher level of debt compared to equity. (Figure 15)

- Strabag SE had a relatively stable debt-to-equity ratio over the 5-year period, with a slight increase in 2020 and 2021. However, Strabag SE's debt-to-equity ratio remained lower than Vinci's throughout the period.

- Bouygues had the lowest debt-to-equity ratio in 2018 and 2019, followed by a significant decrease in 2020. However, Bouygues' debt-to-equity ratio increased significantly in 2021 and 2022, indicating a higher level of debt compared to equity.

Implications and Recommendations

- Vinci's Debt Management: Vinci's fluctuating debt-to-equity ratio suggests the need for a more consistent approach to debt management. It should focus on maintaining a stable debt level to ensure long-term financial stability.

- Strabag SE's Debt Management: Strabag SE's relatively stable debt-to-equity ratio indicates a consistent approach to debt management. It should continue to maintain a stable debt level to ensure long-term financial stability.

- Bouygues' Debt Management: Bouygues' significant increase in debt-to-equity ratio in 2021 and 2022 suggests the need for a more cautious approach to debt management. It should focus on reducing its debt level to ensure long-term financial stability.

4.5.4 Efficiency Ratios

In the analysis of efficiency ratios for Strabag SE, Vinci, and Bouygues, the working capital turnover ratio and equity turnover ratio were considered. A line chart is used to visualize the efficiency of working capital and equity turnover for each company over a 5-year period.

Table 15: Efficiency ratios with metrics (VINCI)

Year	Total Revenue	Total Current Assets	Working Capital Turnover Ratio	Total Equity	Equity Turnover Ratio
2018	€ 43,519	€ 28,621	1.52	€ 19,818	2.20
2019	€ 48,053	€ 30,229	1.59	€ 23,042	2.09
2020	€ 43,234	€ 32,039	1.35	€ 23,173	1.87
2021	€ 49,396	€ 35,353	1.40	€ 24,771	1.99
2022	€ 61,675	€ 41,070	1.50	€ 29,409	2.10

Source: (own processing)

Table 16: Efficiency ratios with metrics (STRABAG SE)

Year	Total Revenue	Total Current Assets	Working Capital Turnover Ratio	Total Equity	Equity Turnover Ratio
2018	€ 15,222	€ 6,791.69	2.24	€ 3,654	4.17
2019	€ 15,669	€ 7,000.96	2.24	€ 3,856	4.06
2020	€ 14,750	€ 6,981.09	2.11	€ 4,108	3.59
2021	€ 15,299	€ 7,236.21	2.11	€ 4,072	3.76
2022	€ 17,026	€ 7,391.66	2.30	€ 4,025	4.23

Source: (own processing)

Table 17: Efficiency ratios with metrics (BOUGYUES)

Year	Total Revenue	Total Current Assets	Working Capital Turnover Ratio	Total Equity	Equity Turnover Ratio
2018	€ 35,555	€ 17,968	1.98	€ 11,032	3.22
2019	€ 37,929	€ 22,500	1.69	€ 11,800	3.21
2020	€ 34,694	€ 19,085	1.82	€ 11,872	2.92
2021	€ 37,589	€ 22,933	1.64	€ 12,789	2.94
2022	€ 44,322	€ 29,463	1.50	€ 13,932	4.23

Source: (own processing)

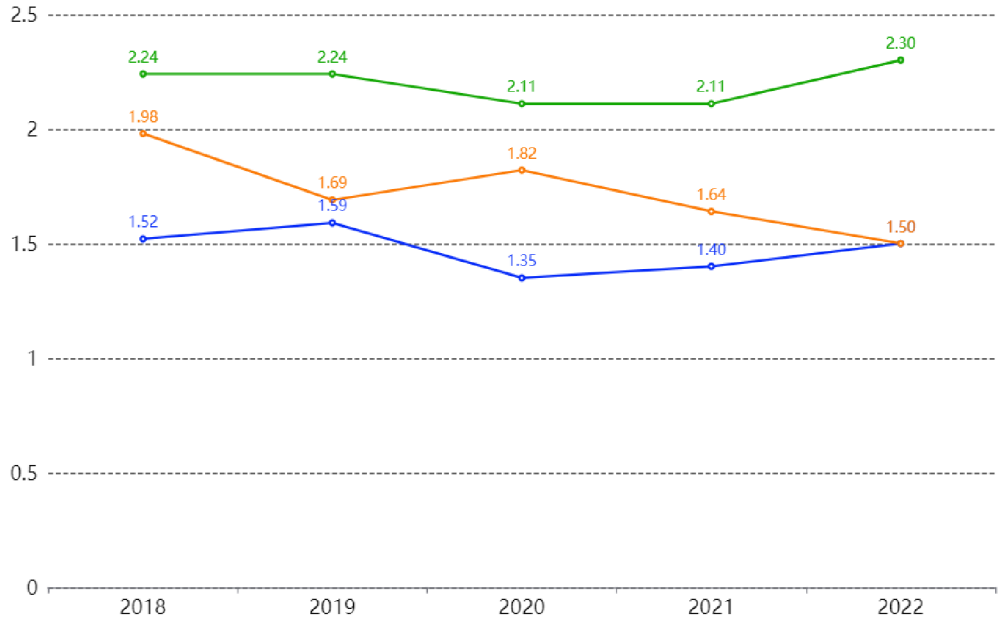

Figure 16: Comparision of working capital ratio (2018-2022)

Source: (own processing)

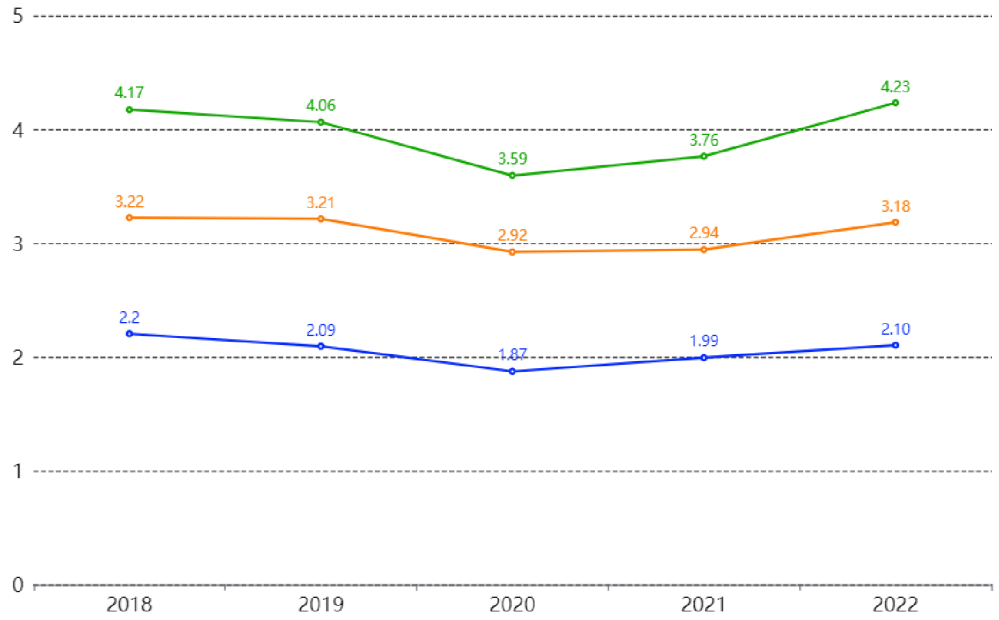

Figure 17: Comparision of equity turnover ratio (2018-2022)
Source: (own processing)

Key Findings and Trends

- Vinci's working capital turnover ratio and equity turnover ratio showed a consistent performance over the 5-year period. The company maintained a stable working capital turnover ratio, indicating efficient utilization of working capital.

Similarly, Vinci's equity turnover ratio remained steady, reflecting effective use of equity to generate revenue. (Figure 16,17)

- Strabag SE demonstrated a strong performance in both the working capital turnover ratio and equity turnover ratio. The company consistently improved its working capital turnover ratio, indicating efficient management of working capital. Additionally, Strabag SE's equity turnover ratio showed a positive trend, highlighting effective utilization of equity for revenue generation.

- Bouygues had varying performance in the efficiency ratios over the 5-year period. The company's working capital turnover ratio fluctuated, indicating some variability in working capital management. Similarly, Bouygues' equity turnover ratio showed fluctuations, suggesting varying efficiency in utilizing equity for revenue generation.

Implications and Recommendations

- Vinci's Operational Efficiency: Vinci's stable efficiency ratios indicate a consistent operational efficiency in managing working capital and equity. The company should continue its effective practices to maintain operational excellence.

- Strabag SE's Strong Performance: Strabag SE's positive trends in efficiency ratios reflect effective working capital and equity management. The company should capitalize on these strengths to drive further operational improvements.

- Bouygues' Areas for Improvement: Bouygues' fluctuating efficiency ratios suggest areas for improvement in working capital and equity management. The company should focus on enhancing efficiency in utilizing working capital and equity to optimize operational performance.

4.5.5 Additional Profitability Ratios

Based on the provided data, the return on sales (ROS) (Figure 18) and the return on investments (ROI) ratios (Figure 19) for Vinci, Strabag SE, and Bouygues from 2018 to 2022 are presented in a line chart. The ROS ratio measures the profitability of a company about its revenue, while the ROI ratio measures the profitability of a company about its investments.

Table 18: Additional profitability ratios with metrics (VINCI)

Year	Total Revenue	Net Income	ROS	Capital Expenditure (PP&E)	Total Assets	Total Debt	ROI
2018	€ 43,519	€ 3,057	7%	€ 5,359	€ 75,357	€ 15,554	14%
2019	€ 48,053	€ 3,408	7%	€ 10,131	€ 91,102	€ 21,654	19%
2020	€ 43,234	€ 1,015	2%	€ 9,760	€ 91,165	€ 17,989	15%
2021	€ 49,396	€ 2,195	4%	€ 10,303	€ 100,816	€ 19,539	15%
2022	€ 61,675	€ 4,417	7%	€ 10,805	€ 111,991	€ 18,536	16%

Source: (own processing)

Table 19: Additional profitability ratios with metrics (STRABAG SE)

Year	Total Revenue	Net Income	ROS	Capital Expenditure (PP&E)	Total Assets	Total Debt	ROI
2018	€ 15,222	€ 362.78	2%	€ 2,144	€ 11,568	€ 1,218	24%
2019	€ 15,669	€ 378.56	2%	€ 2,632	€ 12,251	€ 1,144	27%
2020	€ 14,750	€ 399.06	3%	€ 2,571	€ 12,134	€ 1,747	29%
2021	€ 15,299	€ 596.40	4%	€ 2,533	€ 12,226	€ 1,937	30%
2022	€ 17,026	€ 480.13	3%	€ 2,743	€ 12,684	€ 1,928	30%

Source: (own processing)

Table 20: Additional profitability ratios with metrics (BOUGYUES)

Year	Total Revenue	Net Income	ROS	Capital Expenditure (PP&E)	Total Assets	Total Debt	ROI
2018	€ 35,555	€ 1,450	4%	€ 7,327	€ 39,187	€ 3,612	25%
2019	€ 37,929	€ 1,320	3%	€ 7,502	€ 39,354	€ 2,222	24%
2020	€ 34,694	€ 770	2%	€ 7,486	€ 40,612	€ 1,981	21%
2021	€ 37,589	€ 1,305	3%	€ 8,048	€ 44,642	€ 941	21%
2022	€ 44,322	€ 1,131	3%	€ 9,187	€ 60,595	€ 7,440	19%

Source: (own processing)

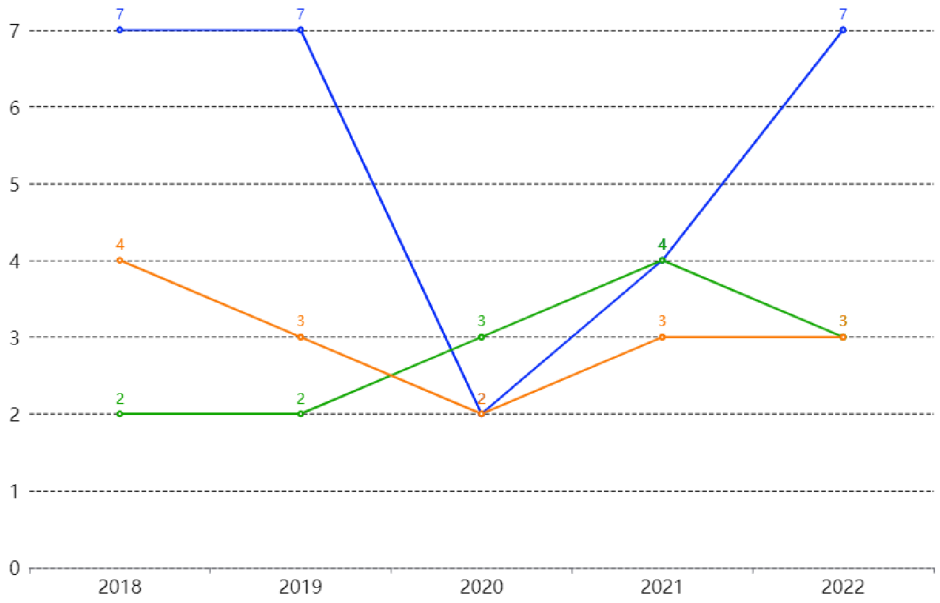

Figure 18:Comparision of return on sales ratio in percentage (2018-2022)
Source: (own processing)

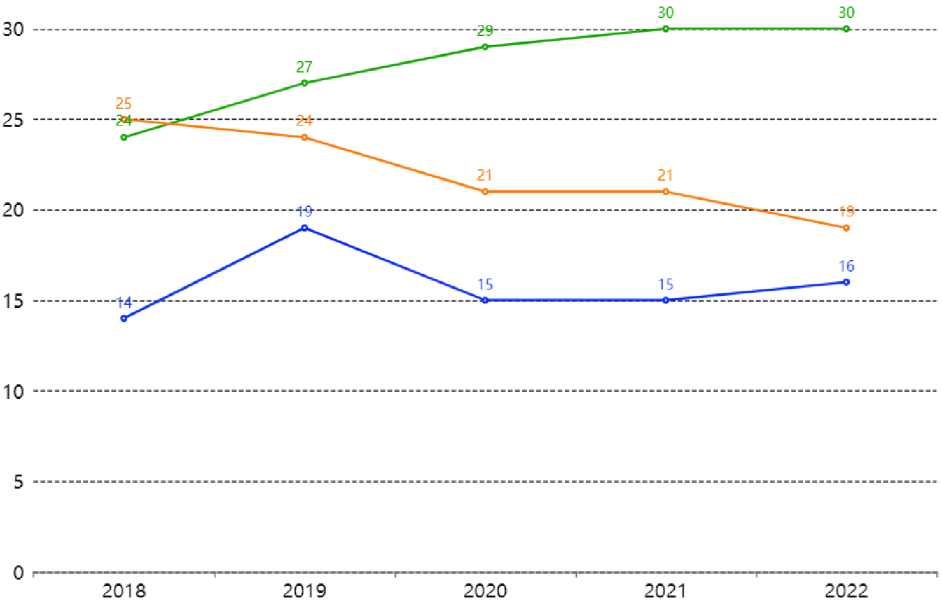

Figure 19: Comparision of return on investment ratio in percentage (2018-2022)
Source: (own processing)

Key Findings and Trends

- Return on Sales (ROS): Vinci had the highest ROS ratio in 2018 and 2019, while Strabag SE had the lowest ROS ratio in those years. However, in 2020, all three companies had low ROS ratios due to the impact of the COVID-19 pandemic. In

2021 and 2022, Vinci's ROS ratio increased significantly, surpassing the other two companies. (Figure 18)

- Return on Investments (ROI): Vinci had the highest ROI ratio in 2018 and 2019, while Strabag SE had the highest ROI ratio in 2020, 2021, and 2022. Bouygues had the lowest ROI ratio in 2018, 2019, and 2022. (Figure 19)

- Trends: The ROS ratios of all three companies decreased in 2020 due to the impact of the COVID-19 pandemic, but they recovered in 2021 and 2022. The ROI ratios of all three companies decreased in 2020, but Strabag SE's ROI ratio increased significantly in 2021 and 2022, surpassing Vinci's ROI ratio.

Implications and Recommendations

- Vinci's Profitability: Vinci's high ROS and ROI ratios in 2018 and 2019 indicate that the company was highly profitable during those years. However, the significant decrease in its ROS ratio in 2020 and 2021 suggests that the company was affected by the pandemic.

- Strabag SE's Profitability: Strabag SE's low ROS ratio in 2018 and 2019 suggests that the company was less profitable during those years. However, its high ROI ratio in 2020, 2021, and 2022 indicates that the company was able to generate high returns on its investments during those years.

- Bouygues' Profitability: Bouygues' low ROI ratio in 2018, 2019, and 2022 suggests that the company was less profitable during those years.

- COVID-19 Impact: The COVID-19 pandemic had a significant impact on the profitability of all three companies, as evidenced by the decrease in their ROS and ROI ratios in 2020.

- Future Profitability: To maintain and improve their profitability, the companies should focus on implementing strategies that will enable them to generate high

returns on their investments and sales. This could include investing in high-margin projects, improving their operational efficiency, and reducing their costs.

4.6 Discussion of Findings

The analysis of the financial performance of VINCI, Strabag SE, and Bouygues from 2018 to 2022 reveals some important trends, challenges, and opportunities for the construction industry along with their internationalization strategies from the litterature study shows as follows:

The construction industry as a whole can benefit from these findings by recognizing the importance of financial management in internationalization strategies. Multinational construction companies should focus on improving their financial ratios to enhance liquidity, porfitability, efficiency and reduce potential risks. This can be achieved through effective cash management, working capital optimization, and the implementation of robust financial risk management practices.

The identified financial strengths and weaknesses may impact each company's future growth prospects, market competitiveness, and strategic decision-making. Vinci, Bouygues, and Strabag SE have implemented various internationalization strategies over the past five years, including strategic acquisitions, expansions into new markets, and diversification into related sectors. These strategies have had a significant impact on their financial performance, as evidenced by their liquidity ratios, profitability ratios, leverage ratios, and efficiency ratios.

VINCI has pursued a global strategy, expanding its operations in various countries. The company has made significant acquisitions, including the acquisition of Cobra IS in December 2021, which has strengthened its position in Spain and other Latin American countries. This acquisition has helped VINCI to increase its international sales, which amounted to US$ 22,137 million in 2022, making it the leading non-European group in terms of international sales. (Vinci report, 2023)

Bouygues has also pursued a global strategy, expanding its operations in various countries. The company has made significant investments in the telecommunications

sector, including the acquisition of a 50% stake in the Turkish telecommunications company, Turktel. This acquisition has helped Bouygues to increase its international sales, which amounted to US$ 12,279 million in 2022. (Bougyues report, 2023)

Strabag SE has pursued a multi-domestic strategy, focusing on expanding its operations in various countries while adapting to local market conditions. The company has made significant investments in various countries, including Austria, Switzerland, the Czech Republic, Slovakia, and Russia. This strategy has helped Strabag SE to increase its international sales, which amounted to US$ 6,636 million in 2022. (Strabag SE report, 2023)

The internationalization strategies of VINCI, Bouygues, and Strabag SE have helped them to expand their operations in various countries, increase their revenue, and enhance their competitiveness in the global construction market. However, these strategies also come with their own risks, and the companies must adapt to local market conditions and regulations, which can impact their financial performance. Continuous monitoring and adjustment of these strategies are crucial for the companies to maintain financial resilience and remain competitive in the global construction market.

The internationalization strategies of all three companies have had a significant impact on their financial performance. The companies have made significant investments in various countries, which have helped them to increase their international sales and profitability.

Unique Factors Contributing to the Success of VINCI, Bouygues, and Strabag SE

The success of VINCI, Bouygues, and Strabag SE in their respective markets can be attributed to a combination of unique factors. As the top-ranked contractor, VINCI's neutral status allows it to serve as a benchmark for internationalization success and financial performance. Bouygues and Strabag SE, as French and Austrian contractors respectively, were chosen for their regional significance, providing insights into the unique factors that contributed to their success.

VINCI: A Balanced Approach to Internationalization

VINCI's success can be attributed to its balanced approach to internationalization and financial performance. The company has strategically expanded into new markets, such as the United Kingdom and the United States, while diversifying its service offerings to include renewable energy projects. VINCI's innovative solutions, such as its use of digital tools and focus on sustainability, have also contributed to its success.

Bouygues: Utilizing Regional Strengths

Bouygues' success in the French construction market can be linked to its strategic diversification into new sectors, such as telecommunications. The company has utilized its parent company's resources and expertise to expand its operations and maintain a strong brand recognition and reputation. Bouygues' commitment to innovative solutions, such as the use of artificial intelligence and digital transformation, has also been a key factor in its success.

Strabag SE: Adapting to Regional Dynamics

Strabag SE's success in the Central and Eastern European construction market can be attributed to its strategic expansion into new markets and its ability to adapt to changing market conditions. The company has diversified its service offerings and invested in innovative solutions, such as the use of digital tools and a focus on sustainability. Strabag SE's strong brand recognition and reputation, built through its commitment to quality and customer satisfaction, have also been crucial to its success.

Effective Risk Management and Financial Performance

Across all three companies, effective risk management and financial performance have been key factors in their success. VINCI, Bouygues, and Strabag SE have demonstrated the ability to navigate challenging market conditions and invest in new projects and expansion. This has allowed them to maintain a strong financial position and continue to grow their international operations.

Based on the search results provided, here is a more detailed analysis of the effective risk management and financial performance of VINCI, Bouygues, and Strabag SE:

VINCI: Navigating Challenges through Prudent Risk Management

VINCI has demonstrated its ability to effectively manage financial risks and maintain a strong financial position, even during challenging market conditions. For example, during the COVID-19 pandemic, VINCI was able to adapt its operations and utilize its diversified business model to reduce the impact on its financial performance.

The company's prudent debt management, with a debt-to-equity ratio consistently below 1, has allowed it to invest in new projects and expand its international operations without compromising its financial stability (Figure 15).

Bouygues: Balancing Growth and Financial Discipline

Bouygues has also exhibited effective risk management and financial performance, which has enabled it to navigate market challenges and pursue strategic growth opportunities. The company's diversification into sectors like telecommunications has helped to balance its risk exposure and provide a more stable revenue stream.

Bouygues has maintained a healthy debt-to-equity ratio, allowing it to invest in new projects and acquisitions while preserving its financial strength.

Strabag SE: Adapting to Market Conditions through Financial Agility

Strabag SE has demonstrated its ability to adapt to changing market conditions and maintain a strong financial position. The company has implemented effective risk management strategies, such as diversifying its project portfolio and optimizing its capital structure, to navigate challenging periods.

Strabag SE's financial performance, as evidenced by its improving profitability ratios and working capital management, has enabled it to invest in new growth opportunities and strengthen its competitive position in the industry

Government Support and Regulations

The success of VINCI, Bouygues, and Strabag SE has also been influenced by government support and regulations in their respective markets. Favorable policies and regulations that encourage foreign investment and infrastructure development have played a role in the growth and expansion of these companies, some of them are:

- France's investment in sustainable infrastructure development, including renewable energy projects, has provided opportunities for VINCI to utilize its expertise and expand its operations in this growing sector. Favorable tax incentives and subsidies for infrastructure projects in France have supported VINCI's ability to undertake large-scale construction initiatives.

- The French government's promotion of public-private partnerships (PPPs) has enabled Bouygues to collaborate with the public sector on major infrastructure projects, sharing risks and resources. Regulatory streamlining and efficient permit approval processes in France have allowed Bouygues to accelerate project timelines and enhance its operational efficiency.

- The Austrian government's investment in transportation infrastructure development, such as high-speed rail and highway networks, has created opportunities for Strabag SE’s ability to get profitable construction contracts. Policies encouraging the use of sustainable construction materials and technologies in Austria have benefited Strabag SE's ability to position itself as a leader in environmentally-friendly construction practices.

Conclusion

This comprehensive literature review has provided valuable insights into the internationalization strategies and financial performance of multinational construction companies, with a particular regional focus on the French and Austrian construction markets. The findings from this study directly address the aim of the thesis, which is to explore the relationship between internationalization strategies and the financial performance of the multinational construction companies. The study has successfully addressed the secondary objectives as follows.

The review began by examining the evolution of internationalization in the construction industry, highlighting the growing importance of global expansion for construction firms seeking growth and competitive advantage. The literature underscored the various methods used to determine the degree of internationalization, with a focus on metrics like international revenue and the eclectic paradigm. Europe emerged as a leading region ranked number one for construction industry internationalization, with companies leveraging diverse strategies to enter new markets.

A deep dive into the motivations, challenges, and considerations surrounding internationalization revealed the complex decision-making process construction firms navigate. Case studies of industry leaders like Skanska, Bechtel, and China Communications Construction Company (CCCC) provided real-world examples of successful internationalization and the resulting financial performance.

The financial performance of multinational construction companies, emphasizing the importance of comparative analysis with the use of industry-specific financial ratios, were highlighted as crucial factors in evaluating the financial health and competitiveness of these firms.

The regional focus of the thesis was addressed through in-depth examinations of the French and Austrian construction markets. The distinct internationalization strategies and financial performances of the top contractors in these countries, including VINCI, Strabag SE, and Bouygues, were analyzed and compared. This comparative analysis

uncovered key trends and insights that can inform the strategic decision-making of construct.

Regarding the key research questions, the study has addressed them as follows:

- The primary internationalization strategies employed by multinational construction companies include market diversification, mergers and acquisitions, joint ventures, and greenfield investments. These strategies vary based on factors such as company size, market presence, and regional expertise.

- Multinational construction companies navigate the decision-making process for international expansion by carefully considering factors such as market potential, regulatory environments, cultural differences, and access to resources and capabilities. The strategic choices are often influenced by the firms' risk appetite and long-term growth objectives.

- Construction companies utilize various financial risk assessment strategies during internationalization, including diversification, hedging, and the adoption of advanced project management techniques. These strategies have been shown to have a positive impact on the overall financial performance of the firms, though the magnitude of the effect may vary depending on the specific context and circumstances.

The unique factors that contributed to the success of VINCI, Bouygues, and Strabag SE in their respective markets are varied. However, based on the results provided, some key factors that may have contributed to their success include:

VINCI's success can be attributed to its strategic expansion into new markets, diversification of its services, and ability to adapt to changing market conditions.

Strabag SE's success could be attributed to its strategic expansion into new markets, diversification of its services, and ability to adapt to changing market conditions.

Bouygues' success may be linked to its strategic diversification into new sectors, such as telecommunications, and its ability to utilize its parent company's resources and expertise.

One of the main challenges encountered during this research was the limited availability of up-to-date, industry-specific data on the financial performance and internationalization strategies of construction companies, particularly at the regional level. To overcome this, the study relied on a combination of academic literature, industry reports, and company-specific information to piece together a reasonable narrative.

Despite this challenge, the primary benefit of this thesis work lies in its ability to provide a holistic and well-rounded perspective on the relationship between internationalization-financial performance in the construction industry. By integrating insights from multiple sources and conducting a comparative analysis, the study offers a valuable resource for construction firms, industry stakeholders, and academic researchers seeking to understand the dynamics of global expansion and its impact on financial performance.

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