Running Head: REPORT

**Innovation in Design**

**[Name of Institute]**

**[Name of Student]**

**[Date]**

Table of Contents

[Introduction 4](#_Toc154762402)

[Critique of PEST and SWOT methodologies 5](#_Toc154762403)

[Understanding PEST and SWOT 5](#_Toc154762404)

[Unveiling the Strengths 6](#_Toc154762405)

[Extracting the Weaknesses 7](#_Toc154762406)

[Value Proposition 8](#_Toc154762407)

[Real-World Relevance 10](#_Toc154762408)

[PEST Analysis, Narrative within Report 12](#_Toc154762409)

[Political 12](#_Toc154762410)

[Economical 12](#_Toc154762411)

[Social 12](#_Toc154762412)

[Technological 13](#_Toc154762413)

[Key Issues 13](#_Toc154762414)

[SWOT Analysis, narrative within report 13](#_Toc154762415)

[Overview of Balfour Beatty 13](#_Toc154762416)

[SWOT Analysis 14](#_Toc154762417)

[Strengths 14](#_Toc154762418)

[Weaknesses 14](#_Toc154762419)

[Opportunities 14](#_Toc154762420)

[Threats 14](#_Toc154762421)

[Learning from Failure 15](#_Toc154762422)

[Diagram 15](#_Toc154762423)

[Narrative 15](#_Toc154762424)

[Benefits 16](#_Toc154762425)

[Limitations 16](#_Toc154762426)

[Action Plan 17](#_Toc154762427)

[Sustainability 17](#_Toc154762428)

[Technology Integration 17](#_Toc154762429)

[Market Diversification 17](#_Toc154762430)

[Risk Management 18](#_Toc154762431)

[Conclusion 18](#_Toc154762432)

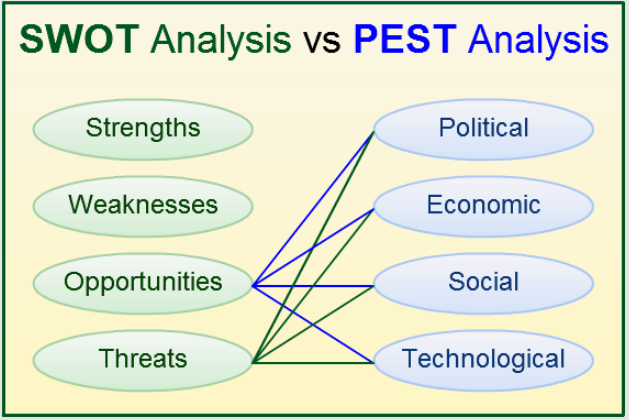
[REFERENCES 20](#_Toc154762433)

**Innovation in Design**

# Introduction

This report explores all strategic methodologies to improve innovation in the chosen construction organisation. Using the PEST and SWOT frameworks is crucial for detailed analysis. These frameworks are useful tools for fostering an innovative culture, adapting to changes, and minimising the impact of potential threats. This study examines SWOT and PEST analysis limitations in innovation-focused strategic planning. The study also considers a company from construction sector and conducts a SWOT analysis to identify potential innovation hotspots. The suggested framework meticulously and consciously outlines how the organisation might improve its innovation activities, including product creation and operational procedures, to provide a credible blueprint. A thorough analysis of different methodologies will reveal their inherent potential as catalysts of additional innovation in order to push the company's strategic direction (Liang, et al., 2020). PEST and SWOT analysis methodologies cover a lot of material. This method emphasises systematisation and learning from mistakes. This project aims to create a feedback loop that integrates lessons learnt into future planning. These phenomena helped to create a culture that values evolution and the ability to learn and adapt. The construction sector must emphasise innovation in order to maintain growth and stay ahead of the pack (Lutfullaevich, 2020).

# Critique of PEST and SWOT methodologies



*Source: Pinterest*

## Understanding PEST and SWOT

Discover the PEST and SWOT analysis essential principles and methodologies. Useful strategic tool PEST analysis may help businesses identify macroenvironmental factors that may affect their operations. This analysis covers politics, economics, society, technology, and any relevant external factors. SWOT analysis examines a company's internal landscape, focusing on the microenvironment (Yu, 2020). This study examined both internal and external factors that affect the organization's strengths and weaknesses in order to identify potential opportunities and threats. This analysis helps understand an organisation's strategic position. One benefit of PEST analysis is the ability to detect external factors that benefit a firm.

This analytical approach may reveal both attractive opportunities and potential threats by assessing political, economic, social, and technological factors (Mainali, et al., 2021). It fails to account for these factors' complexity and changeability. SWOT analysis uses internal and external factors to identify strengths, weaknesses, opportunities, and risks. Firms can adapt to changing external conditions by using internal strengths and weaknesses to solve crucial problems. Bias affects data interpretation. Techniques must collaborate. PEST research helps firms identify and assess workplace indicators. SWOT analysis examines all corporate aspects. The study's findings suggest that companies may benefit from favourable events, adapt to changing environmental conditions, and avoid potential hazards. Strategic planning methods have inherent limitations, such as subjective biases and simplicity (Nigussie, d.n.m).

## Unveiling the Strengths

SWOT and PEST analysis methodologies may help an organisation flourish. Studying how external factors affect strategic decision-making improves PEST analysis. Organisations can adapt strategies. Insight helps uncover opportunities, make wise decisions, and prevent poor ones (Liang, et al., 2020). Broad SWOT analyses cover internal and external issues. SWOT analysis may help a corporation understand its surroundings. Scholars appreciate the analytical framework's internal and external examination. Ahmadi et al. (2019) reported that many companies assess their internal and external strengths, weaknesses, opportunities, and threats using SWOT. This analytical strategy helps managers grab opportunities, eliminate weaknesses, and maximise strengths. Evaluation of strengths and weaknesses is essential before creating and implementing success strategies. To adapt growth strategies, this strategy plan evaluates external opportunities and threats. Multiple perspectives on internal and external issues can help a firm prosper. PEST and SWOT ("Strengths, Weaknesses, Opportunities, and Technological Factors") enable organisations evaluate external factors (Lutfullaevich, 2020).

The PEST Framework and analytical tools evaluate global environmental factors. Company SWOT analysis identifies strengths, weaknesses, opportunities, and threats. This analytical tool helps scholars and practitioners evaluate organisations. Helps pick and execute strategies. SWOT analysis. Political, economic, social, and technological factors can impact an organization's strategic goals, according to PEST. Report aids business strategy. It may reveal future threats and opportunities. Businesses must handle internal and external issues to compete. Company SWOT analysis assesses opportunities, threats, weaknesses, and strengths. This study evaluates corporate, market, and competitor strengths and weaknesses. Company success may depend on long-term strategies. Assessing market strengths, weaknesses, opportunities, and threats helps companies make strategic decisions. Management assesses internal and external issues using PEST and SWOT. Business analysts assess strengths, weaknesses, external opportunities, and threats. Multiple SWOT and PEST examinations assist managers spot corporate issues. PEST and SWOT assist experts and students evaluate. Gao et al. argue proactive corporate strategic decision-making boosts quality and efficiency.

Organisations should take advantage of opportunities, fix weaknesses, and maximise potential. Business demands agility and reactivity. Companies may strategically utilise data to traverse complex market dynamics and make goal-promoting decisions. Corporations may encourage innovation. An organization's ability to actively participate in the innovation process creates a culture of change and new ideas. The challenges companies face need strategic thinking and adaptation. Awaluddin et al. (2021) invest in cognitive ability for strategic decision-making.

## Extracting the Weaknesses

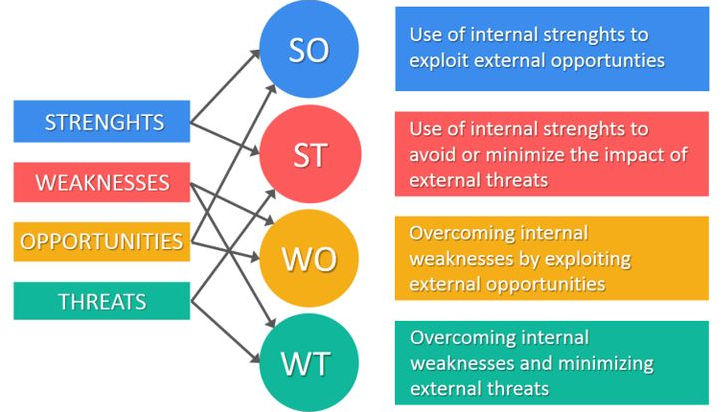
Organisational planning requires PEST/SWOT analysis. All internal and external variables using the tool affect a company's strategic investments, assesses social, economic, technological, and political factors. Understanding such framework’s strengths and weaknesses increases their efficacy (Liang, et al., 2020). The PEST Analysis cannot assess firm capability or all macroenvironmental elements. This process is difficult because of the surroundings and external factors that impact it. Traditional PEST analysis has the potential to ignore the subject's dynamic nature (Awaluddin, et al., 2021). This viewpoint is outdated because it fails to recognise global change. The subjective evaluations and data quality bias potential of SWOT analysis. SWOT analysis has the potential to produce biases or inconsistencies. Subjectivity in SWOT analysis has the potential to compromise its impartiality. Its potential might have a significant impact on strategic choice.

SWOT analysis concerns have the potential to obfuscate and hamper long-term strategic objectives (Yu, 2020). Both methodologies have limitations when building strategies from findings. Internal factors dominate SWOT analysis. Companies assess the potential impact of external factors using PEST. These findings hinder goal-setting. Limitations include not offering comprehensive advice on how to adapt the methodologies and strategies employed in this study to real-world circumstances. PEST and SWOT might reveal organisational or project-impacting factors. Data overload might prevent decision-makers from seeing significant issues or strategic imperatives (Mainali, et al., 2021). Any potential priority might inhibit strategic analysis. Broaden strategic planning's limitations. Evaluating several factors and dimensions demonstrates this organisational approach's faults and limitations. Research methodologies gain from qualitative assessments and other views. Potential weaknesses in a company's Application may be vital to detect. Above strategy exploits firm strengths by fostering critical thinking by acknowledging and mitigating its limitations. This study approach has PEST and SWOT limitations. By recognising and resolving any inherent limitations, organisations may enhance their analytical methodologies. Utilise a mix of methodologies while mitigating their limitations to increase the efficacy and usability of strategic planning (Nigussie, d.n.m).

## Value Proposition

From numerous views and strategic insights that encourage innovation, PEST and SWOT methodologies present a full framework for analysis. Since these frameworks admit their limitations, their application can encourage proactive change and innovation (Mainali, et al., 2021). Only by PEST analysis can one appreciate the impact of macroenvironmental factors on organisational dynamics. Its ability to locate and examine superfluous data increases innovation (Liang, et al., 2020). Companies may detect patterns, potential disruptions, and regulatory change using PEST. Integration of political, economic, social, and technological factors simplifies analysis. Organisations may increase their ability to adapt to external changes and capture new opportunities by setting the groundwork for innovation via the application of foresight methodologies.

SWOT analysis examines internal and external factors, fostering innovation. The aforementioned strategy allows firms the ability to analyse their internal and external SWOT (Awaluddin, et al., 2021). These recommendations stimulate company innovation. Multiple strategic management frameworks incorporate SWOT analysis. It assesses and utilises an organization's key strengths and weaknesses with the objective of grabbing opportunities and mitigating the organization's potential impact. This encourages firm development and innovation. An analysis of internal (strengths and weaknesses) and external (opportunities and threats) factors may aid companies. For potential methodologies, PEST and SWOT analysis are relevant frameworks. This strategy aligns adaptive tactical strategies to strategic ambitions (Tao and Huang, 2021).



*Source: Pinterest*

The potential impact of external factors on an organization's operations and strategic decisions is explored through PEST analysis. SWOT analysis assesses the company's primary factors. Companies may enable evolution and new outcomes by merging analytical methodologies. The cooperation is increasing these areas to help organisations profit on external opportunities, fix internal weaknesses, and identify latent opportunities. Methodologies simplify proactive change management strategies (Gao, et al., 2023). Businesses may utilise PEST analysis to analyse and adapt to market developments. A company may use successful strategies to address external threats. SWOT illustrates that internal and external forces have the capacity to hinder an organization's progress. Identifying vulnerabilities and threats helps organisations manage and reduce risks. This study outlines ways firms might improve their perception to better understand and respond to unexpected opportunities and threats. According to the study, value propositions affect firm’s strategy (Liang et al., 2020).

Before making major decisions, businesses should evaluate opportunities, threats, and weaknesses, political, economic, social, and technological factors. These technologies allow a company assess internal and external factors. These frameworks highlight internal and external aspects, which can aid in understanding a company's operations and strategy. PEST analysis may aid businesses in identifying political, economic, social, and technological issues that could affect their sector. A complete SWOT evaluation examines an organization's internal and external circumstances. Both studies help companies understand the many aspects that impact client decisions. Businesses must consciously enhance their operational and technological capacity to keep up with the need for innovation within the company. The aforementioned methodologies create excellence while also fostering a culture of constant development. Many analytical frameworks assist businesses make strategic management decisions. SWOT and PEST analysis impress businesses (Gao, et al., 2023). After establishing PEST, this report investigates how external variables might change a company's strategy. Firms may improve strategy with frameworks. SWOT analysis evaluates a company's performance using internal and external factors. Using operational threats and strengths, Awaluddin et al. (2021) examine the organization's strengths and weaknesses.

SWOT analysis can assist comprehends the company's competitive position and make strategic decisions that boost performance and sustainability. These findings reveal potential benefits for firms, notably in strategic decision-making and ability to adapt to unpredictability. Organisational strengths include innovation, failure learning, and strategic failures. Iterative approaches fostering new habits and adaptive strategies boost organisational learning. PEST and SWOT methodologies aid firms in understanding their strategic environment, fostering innovation and change. These factors create a firm culture of innovation and change. The strategic integration of these methodologies, despite their inherent limitations, boosts an organization's ability to stimulate innovation, adapt to changing business conditions, and prosper in them (Mainali, et al., 2021).

## Real-World Relevance

The utilisation of SWOT and PEST analysis is crucial for the organisational innovation and prosperity. Companies examine socioeconomic issues impacting operations using PEST. Investment in political, economic, social, and technological elements may help businesses understand their environment (Ahmadi, et al., 2019). Their capacity to adapt to external difficulties and opportunities is increased by this strategy. Scholars explore how global wars, economic restrictions, and government changes affect society. Business limitations greatly affect economic activity and market dynamics. Government actions change social, political, and economic conditions. Company strategies and market access must address trade restrictions and sustainability. A company may change significantly for these reasons. The impact of global economic crises and currency change on consumer behaviour and market ability needs adaptive strategies. Demographic, cultural, and societal change effect market strategies and product innovation (Lutfullaevich, 2020).

Due to their impact on client behaviour, businesses must understand these complex factors. Businesses may better serve their target markets by monitoring and adapting to change in client preferences. Companies must consider culture, population growth, and customs. Adapt to disruptive innovation and technological loss, which change operations. Blockchain and AI facilitate product and process innovation (Mainali, et al., 2021). SWOT analysis helps companies discover strengths and weaknesses. Defining the company's individuality will provide a competitive lead. This might be a well-known brand or talented personnel. Markets with high unmet consumer demand or rapid expansion may provide attractive business opportunities. Businesses can adapt to threats such as new technology that change operations and intense competition with defensive innovation. The company decides how to use these strategies. Rapid technological advances, uncertain markets, and shifting client tastes require constant change (Zhao, et al., 2021). PEST and SWOT help strategic management. This analysis may assist companies understand industry-specific legislative changes, economic trends, social shifts, and technological breakthroughs. Their limitations may reveal development opportunities and threats.

PEST and SWOT evaluations help organisations adapt to and prosper in today's fast-changing technological environment. Healthcare must adapt to political change, technological innovation, and customer demand change. Market volatility, technological innovation, and regulation have little impact on the impact of evaluations on financial company strategies (Geng, et al., 2023). Value may grow if a company prioritises sustainability, digitises, and puts consumers first. Companies may adapt to market changes, technological improvements, and client preferences by reflecting on innovation strategies. SWOT and PEST evaluations are crucial in today's culture because of their extensive application in many organisations and ability to adapt. Accelerated change and technological disruptions need strategic goals and innovation. Businesses must embrace innovation and adapt their strategies to survive in these difficult times (Zhao, et al., 2021).

# PEST Analysis, Narrative within Report

Companies do a PEST analysis for fostering innovation. This is how companies and businesses must investigate the field's external factors.

# Political

Sustainability and political environment really matters. Green energy and environmental ability policies impact industrial innovation. R&D funding and innovation awards are two policies fostering technological growth (Mainali, et al., 2021).

## Economical

Global market volatility increases economic issues. This research examines the intricate relationships between exchange rate changes, firm suspensions, and economic downturns in modern society. R&D, project capabilities, and investment depend on economic complexity. Sector innovation will depend on its ability to operate within economic restrictions (Tao and Huang, 2021).

## Social

Related factors encourage innovation and social change. Customer demand for sustainable products, social responsibility, and ethical business practices drives market innovation. Demographical and lifestyle changes affect new product and service demand. Innovation strategies must show flexibility and ability to adapt (Yu, 2020).

## Technological

New technology fosters industry innovation, everyone agrees. IoT, blockchain, and AI may promote revolutionary innovation by developing quickly (Awaluddin, et al., 2021). Integrating these technologies into operations and services may provide the sector an edge. Understand the sector's ability to foster innovation by leveraging new technology and market demands.

## Key Issues

PEST analysis demonstrates that key factors have a substantial impact on sector innovation. These include sustainability-focused laws, economic volatility, shifting consumer tastes, and rapid technological improvements. Problem-solving and innovation need strategic integration of several strategies. This involves responding to economic, consumer, and technological changes. Sustainability matters. The sector's resolve to address these challenges will affect its ability for innovation and market competitiveness (Tao and Huang, 2021).

# SWOT Analysis, narrative within report

## Overview of Balfour Beatty

About forty thousand people work for Balfour Beatty, a large construction company. The company has the ability to handle design-build projects, general contracting, and risky construction sites. After a major impact, the construction firm serves public and private customers nationally. The firm competes with Skanska, Mitie, Fluor, Arup, Bechtel, Kiewit, Kajima, Webuild, Mota-Engil, VolkerWessels, and Keller (Geng, et al., 2023).



## SWOT Analysis

### Strengths

Balfour Beatty's strengths include project management and experience. Building large infrastructure projects is fast and efficient. They distinguish out in the market owing to their distinct background and experience (Mainali, et al., 2021). To sustain and strengthen its present strengths, the corporation needs invest in cutting-edge technological innovation. Encouraging and maintaining a high quality of project execution excellence in the workplace. Also important is preserving the company's innovation culture. Companies must grow their market or acquire new skills to compete (Tao and Huang, 2021).

### Weaknesses

Balfour Beatty was involved, but delays and cost overruns show weaknesses. Bechtel or Skanska may have more money or PR strategies. These weaknesses may be rectified with a reliable project monitoring system and rigorous analysis of past mistakes. Benchmarking against industry leaders and project execution and risk management best practices has the ability to address weaknesses and increase competitiveness (Awaluddin, et al., 2021).

### Opportunities

Balfour Beatty helped PEST research find opportunities. Environmental legislation reform and sustainable collaboration can lead to greatness. Rapid growth is due to technological improvements, especially in digital building and renewable energy (Nigussie, d.n.m). To leverage on emerging trends and enhance market presence and financial success, the company should spend in the following areas.

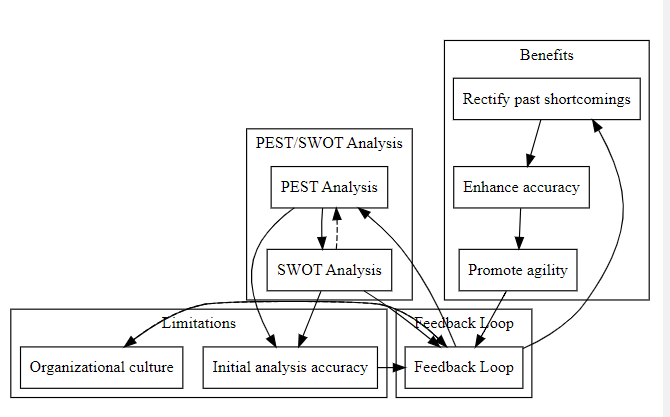
### Threats

Economic downturns may impact financial ability. Geopolitical factors may have an impact on regulatory change, which may complicate the project. Balfour Beatty, the subject of the analysis, should diversify its project portfolio across industries and locations to decrease risks. Balfour Beatty can mitigate industry or regional losses by diversifying its business. Balfour Beatty's ability to adapt to market change should be increased (Nigussie, d.n.m). Flexible and proactive strategies can help Balfour Beatty manage market volatility and its repercussions. Balfour Beatty must track geopolitics. Balfour Beatty may learn from geopolitics to adapt their strategies. This global dynamics experience will help Balfour Beatty spot risks and opportunities. To reduce risks, Balfour Beatty should diversify their project portfolio, increase market flexibility, and watch geopolitical changes (Zhao, et al., 2021).

# Learning from Failure

By learning from prior actions and decisions, PEST and SWOT feedback loops foster continuous growth.

## Diagram



## Narrative

Failures can help firms develop effective strategies and grow. In PEST and SWOT evaluations, feedback loops help. Iterative loops—reintroducing strategic initiative outcomes into analysis—improve strategic planning accuracy and effectiveness.

## Benefits

Organisations can assess their prior strategies using PEST and SWOT analysis. Organisations may improve their strategies by evaluating deviations, failures, and undesirable consequences. Research shows iterative learning improves assessment and decision-making accuracy and consistency. Feedback loops improve organisation flexibility (Ahmadi, et al., 2019). These iterative methodologies' ability to adapt quickly allows changing strategies as PEST factors do. A SWOT analysis can swiftly repair vulnerability so the feedback loop can reduce negative repercussions and enhance dynamic adaptability.

## Limitations

Several factors reduce feedback loop effectiveness. First-time PEST and SWOT studies must be thorough. Erroneous object assessments or inadequately stated key features might create feedback loops that reinforce bad judgements or strategies. Later loop iterations may cause issues during analysis. Effective feedback loops demand a culture of error-learning. Failures are opportunities for growth, not guilt or punishment (Xu, et al., 2022). This kind of thinking must be supported by the organisational culture. The feedback cycle's potential is constrained without a cultural revolution. If the initial analysis was correct and the company prioritises learning from failures, feedback loops can enhance PEST and SWOT ratings. Feedback loops have the potential to improve strategies, decision-making, and the ability to adapt in the ever-changing business landscape if implemented correctly and supported by a culture of continuous learning (Geng, et al., 2023).

# Action Plan



## Sustainability

Discussion must incorporate sustainability now. The new sustainability task force promotes green building, provides green technological resources, and buys sustainable goods. This project will start with a task force and guide all operations. In-depth research and technological assessments will be conducted to determine the sustainability and potential of sustainable methodologies. Successful pilot projects will prove these sustainable strategies' durability (Mainali, et al., 2021).

## Technology Integration

Companies need IoT, AI, and linked building technologies to compete. Employees must master these technologies. The suggested plan needs a thorough study of technology, necessary training courses, and simple integration into current initiatives to promote their use (Awaluddin, et al., 2021).

## Market Diversification

Focusing on growing or emerging markets is helpful for fostering and maintaining growth. Careful market and project viability assessments will spur growth. The projects in selected markets assess the initiatives' viability and development potential (Liang, et al., 2020).

## Risk Management

Implement proactive risk mitigation strategies and improve risk assessments to promote resilience. A thorough risk assessment will guide tactical and backup strategies. This study evaluates economic downturn- and political issue-resolution strategies using simulations. Implementation comprises numerous phases for systematic change management. Each phase demands careful preparation, implementation, and evaluation to foster new ideas and manage transformational risks. Balfour Beatty intends to become a worldwide leader that solves key problems and adapts to changing customer expectations(Yu, 2020).

# Conclusion

PEST analysis shows Balfour Beatty's external impact. Current political and social climate has raised environmental awareness and driven corporations to adopt sustainability measures. This help is based on the idea that businesses can greatly decrease environmental issues and beautify the landscape. Businesses are adopting sustainability strategies to meet the changing environmental agenda and create a greener future. Technological advances have an impact on the sector's trajectory and offer innovation opportunities. The contemporary research necessitates growth strategies with the ability to adapt to threats from economic and geopolitical changes. This article analyses Balfour Beatty's complex internal environment using SWOT. The company has strengths like the ability to handle projects, but also weaknesses like project delays.

Individuals and businesses can use their strengths to promote sustainability, technological integration, and market development. Strengthening risk management strategies reduces weaknesses and threats. The strategic action plan emphasises innovation to ease concerns. Market growth, firm integration, ensuring sustainability ability, and mitigating risk are the plan's major aims. Good implementation creates a culture of innovation, flexibility, and change management. Why is Balfour Beatty doing well after massive growth? SWOT, PEST, and strategic analysis may disclose. If it capitalises on external opportunities and integrates its strengths with outside innovations, the business may lead the market. Balfour Beatty's focus to overcoming difficulties, seizing opportunities, and fostering an innovation culture has resulted in steady growth and an industry-leading position.

# REFERENCES

Ahmadi, M.R., Maleki, D. and Ahmadi, A., 2019. SMC-SPMV: A new strategic management model for cloud computing based on SWOT/PESTEL multi view. *African journal of engineering research*, *7*(1), pp.17-32.

Awaluddin, R., Suhardi, D. and Djuniardi, D., 2021, March. Company Position Analysis Using Porter's Value Chain and PEST (Political, Economic, Socio-Cultural, Technological) In PT. West Java International Airport. In *UNISET 2020: Proceedings of the 1st Universitas Kuningan International Conference on Social Science, Environment and Technology, UNiSET 2020, 12 December 2020, Kuningan, West Java, Indonesia* (p. 159). European Alliance for Innovation.

Gao, Y., Casasayas, O., Wang, J. and Xu, X., 2023. Factors affecting the blockchain application in construction management in China: an ANP-SWOT hybrid approach. *Architectural Engineering and Design Management*, *19*(6), pp.665-680.

Geng, J., Huang, Y., Li, X. and Zhang, Y., 2023. Overcoming Barriers to the Adoption of Recycled Construction Materials: A Comprehensive PEST Analysis and Tailored Strategies. *Sustainability*, *15*(19), p.14635.

Liang, H., Zheng, J., Wang, Q. and Chen, Y., 2020, November. Research on Development Strategy of “Internet+ Traditional Chinese Medicine” Based on PEST-SWOT Model. In *2020 International Conference on Public Health and Data Science (ICPHDS)* (pp. 232-236). IEEE.

Lutfullaevich, Y.G., 2020. Risk analysis of foreign direct investments in innovative projects: case of uzbekistan. *Asia Pacific Journal of Business Review*, *5*(1), pp.11-19.

Mainali, B., Mahapatra, K. and Pardalis, G., 2021. Strategies for deep renovation market of detached houses. *Renewable and Sustainable Energy Reviews*, *138*, p.110659.

Nigussie, A., Application of SWOT Analysis in Construction Projects.

Tao, M. and Huang, Y., 2021, April. Research on the innovation and development of internet education platform based on SWOT-PEST analysis paradigm. In *2021 International Conference on Internet, Education and Information Technology (IEIT)* (pp. 557-560). IEEE.

Xu, K., Xu, W., Liu, C., Liu, Y., Yang, F., Sheng, M. and Cao, M., 2022, October. Research on the development path of new power system based on SWOT-PEST analysis. In *2022 Asian Conference on Frontiers of Power and Energy (ACFPE)* (pp. 387-393). IEEE.

Yu, T.G., 2020. Dementia Response Technology Development Strategy through PEST-SWOT Analysis. *International journal of advanced smart convergence*, *9*(1), pp.185-192.

Zhao, S., Zhang, P. and Li, W., 2021. A study on evaluation of influencing factors for sustainable development of smart construction enterprises: Case study from china. *Buildings*, *11*(6), p.221.