

BUILDING FUTURE FIT ORGANISATIONS

Construction sector
performance measurement
Learning lessons and finding opportunities

CASE STUDY European construction sector

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Project background

This case study is part of a BRANZ-funded project which aims to inform the development of a performance measurement framework for the New Zealand construction sector. In this research we analyse a number of international and cross-sectoral performance measurement systems. In each case study we seek to understand why performance is measured, how and what is measured, how the system is implemented, and how effective the system is at monitoring and driving performance improvement in the sector. We have synthesised lessons from across the case studies to develop guidance for the New Zealand construction sector on how to curate and implement an effective construction sector performance management system.

This is one of the case studies that contributes to this project.

The full report is available at <https://www.branz.co.nz/pubs/research-reports/er55/>.

Acknowledgements

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We are also grateful for the time and insight offered by industry practitioners, peak body representatives, government officials, and researchers that have contributed to this research. We hope that this project contributes toward a more sustainable and resilient future for the construction sector.

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Case study: European construction sector

1. Introduction

The European construction sector observatory (ECSO), an initiative set up in 2015 under COSME (EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (SMEs)), does comparative assessments on the construction sector – 27 EU countries and the UK (European Commission, 2020a).

The aim of the ECSO is to keep European policymakers and stakeholders up to date on market conditions and policy developments.

2. Objectives

The European construction sector observatory has three main objectives (European Union, 2020a):

1. Monitor market conditions and trends, as well as national/regional strategies and progress towards the 5 priorities of construction 2020 (which broadly focuses on the promotion of favourable market conditions for sustainable growth in the construction sector (European Commission, 2020b)):
 - **Financing and digitalisation (Stimulating favourable investment conditions)**
 - Especially for energy efficient investments in the renovation of buildings and for research and innovation in a smart, sustainable, and inclusive environment
 - **Skills and qualifications (Improving the human capital basis)**
 - Workforce and management training for job creation through up-skilling and apprenticeships to meet demands for new competencies
 - **Resource efficiency (Improving energy and resource efficiency)**
 - Focusing on low emission construction, recycling and valorisation of construction, and demolition waste
 - **Regulatory framework (Strengthening the internal market for construction)**
 - Emphasis on reducing the administrative burden for enterprises and particularly SMEs
 - **International competition (International competitiveness of EU construction firms)**
 - Encouraging the uptake of Eurocodes and promoting the spread of new financial tools and contractual arrangements in non-EU countries.
2. Encourage knowledge sharing and the replication of good practice.
3. Raise awareness on policy measures and initiatives impacting the construction value chain.

3. Measures

The measures used to meet these objectives utilise data already collected through various other measurement systems such as Governments, Eurostat, OECD, Industry White Paper, World Bank, World Economic Fund and various European Commission initiatives including the Single Market Scoreboard, SBA Factsheets, and European Innovation Scoreboard. Analysis of data also utilises economic institutes such as banks, Market Economic, Monkey Charity, CIB, university finance societies along with media articles and industry surveys. A list of these data sources can be found in Appendix 1.

The majority of the indicators are quantitative, lagging, and nationally collected statistics with the analysis focused on how effective government policies and initiatives are and where future policies, schemes, funding and initiatives may improve indicator performance. For example, productivity analyses measure labour productivity in the broad construction sector, and as well as at subsector level to see which subsectors are performing better than others. They then analyse where government initiatives (e.g. funding and programmes) have had positive developments in labour productivity, and what future initiatives are in the pipeline, and how they will impact labour productivity going forward. Qualitative surveys are used for some measures (e.g. government survey looking at the appeal of a career within the construction sector), albeit not often.

Comparative assessments of indicators are profiled in several different ways:

1. **Country fact sheets** profile the construction industries in each country: providing an analysis of key figures, macro-economic indicators, economic drivers, issues and barriers, innovation, the national/regional policy and regulatory framework, and the current status and national strategy to meet construction 2020 objectives.
2. **Analytical reports** provide a wide analysis of the socio-economic and environment performance of the EY construction sector as a whole and recommendations for possible strategies to increase the sector's competitiveness. These reports are grouped into thematic objectives (5 Priorities of Construction 2020) and identifies issues and provides background information to formulate policy recommendations related to the socio-economic and environmental performance of the construction sector.
3. **Trend papers** are analytical reports that describe specific aspects of the main trends in the construction sector, as well as relevant good practice examples from a policy and industry perspective.
4. **Policy measure factsheets** identify and analyse specific policy measures that are being implemented in each EU country to stimulate construction sector employment, growth and opportunities. Policy measure factsheets are organised by thematic objectives (5 Priorities of Construction 2020) and identify the process of implementation and monitoring, the likely socio-economic effects on the various actors in the construction sector and the environmental impacts on society.

4. Country factsheets

Each country factsheet provides an analysis of key measures/indicators (refer Table 1) and discusses the reason behind various data trends and relationships (European Commission, 2020c).

For a full list of indicators and measures see Appendix 2.

Table 1: Country factsheet layout

Report section	Analysis
In a nutshell	<ul style="list-style-type: none"> • Number of enterprises • Production • People employed • House prices • Housing shortages • Infrastructure funding • Policies • Labour shortages • Sustainable construction and energy efficiency
Key figures	<ul style="list-style-type: none"> • Construction market • Productivity • Turnover and Profitability • Employment
Macro-economic Indicators	<ul style="list-style-type: none"> • Economic development • Demography and employment • Public finance • Entrepreneurship and access to finance
Economic drivers	<ul style="list-style-type: none"> • Business confidence • Domestic sales • Export of construction-related products and services • Access to finance in the construction sector • Access to housing • Infrastructure
Issues and barriers	<ul style="list-style-type: none"> - Company failure - Trade credit - Late payment - Time and cost of obtaining building permits and licenses - Skills shortage - Sector and sub-sector specific issues
Innovation	<ul style="list-style-type: none"> - Innovation performance - Eco-innovation and digitalisation
National/regional policy and regulatory framework	<ul style="list-style-type: none"> - Policy schemes - Insurance and liability related regulations - Building regulations
Current status and national strategy to meet construction 2020 objectives	<ul style="list-style-type: none"> - Investment conditions and volumes - Skills - Resource efficiency/sustainable construction - Single market - International competitiveness

5. Analytical reports

Each analytical report provides an analysis of the thematic objectives of the EU Construction 2020 strategy. The report layout and typical analysis are listed in Table 2. This provides an indication of the breadth of analysis possible with the ECSO data (European Commission, 2020a).

Table 2: Analytical report contents

Report section	Analysis
Stimulating favourable investment conditions	<ul style="list-style-type: none">• Investment landscape in construction and the construction sector• Drivers for investment in construction• Obstacles to investment in the construction sector• Policy initiatives
Improving the human capital basis	<ul style="list-style-type: none">• Demographics• Employment in construction• Level of education• Skill shortages• Drivers• Obstacles• Policy initiatives
Improving energy and resource efficiency	<ul style="list-style-type: none">• State of energy and resource efficiency• Drivers of energy and resource efficiency• Obstacles to energy and resource efficiency• Policy initiatives
Strengthening the internal market for construction	<ul style="list-style-type: none">• Characteristics of the internal market• Drivers of the internal market for goods and services• Obstacles to the internal market• Policy initiatives
International competitiveness of EU construction firms	<ul style="list-style-type: none">• Internationalisation of construction companies• Internationalisation opportunities• Obstacles to internationalisation• Policy initiatives

6. Effectiveness

The country factsheets mainly highlight 1) how each country is performing compared to previous years, 2) what the key issues are for each country currently and in upcoming years (e.g. labour shortages), and 3) what government actions are in place to mitigate these issues. While most measures are lagging, the analysis of various measures linked with government initiatives helps to highlight key issues for the future and where government initiatives are helping or falling short. For example, through the analysis in the UK country factsheet report, two key issues were highlighted for the UK housing market: increasing house prices and housing shortage. The report highlighted how many houses needed to be built each year to address these issues, how much funding the government was allocated to address needs, and what gaps there were between need and funding (e.g. the number of houses need to be built is significantly higher than the government's current target). Overall it gives an overview of the current standing of how construction within a country is performing based of government mandated statistics with commentary on how and whether government initiatives are meeting the needs of key issues.

The analytical factsheets use the ECSO data to provide an overview of how the European union as a whole is doing towards their thematic objectives (e.g. Stimulating favourable investment conditions). It either highlights key improvements or issues in meeting these objectives but provides no commentary on where improvements should be made in detail. For example, these reports highlight the most common barriers to investment are linked to regulatory uncertainty, fragmented markets, poor public planning and project preparation capacity as well as financing obstacles.

The ESCO provides a wealth of data that allows EU and country specific analysis of trends. This provides a powerful policy tool. How successful and timely it is in identifying issues and driving policy changes is yet to be seen.

7. References

European Commission (2020a). Internal Market, Industry, Entrepreneurship and SMEs: European construction sector observatory. Retrieved from https://ec.europa.eu/growth/sectors/construction/observatory_en

European Commission (2020b). Internal Market, Industry, Entrepreneurship and SMEs: Construction sector competitiveness. Retrieved from https://ec.europa.eu/growth/sectors/construction/competitiveness_en

European Commission (2020c). European Construction Sector Observatory - Country profile United Kingdom. Retrieved from https://ec.europa.eu/growth/sectors/construction/competitiveness_en

Appendix 1: Data sources for country factsheet UK

- Government documents
- European Commission
- Eurostat
- Bank of England
- World Economic Fund/Forum
- World Bank Group
- Markit Economics
- Europa
- The Money Charity
- BBC/Telegraph/Independent
- QBE
- Construction Global
- Faithful & Gould
- CITB
- HM Treasury
- DLA Piper
- Construction Products Association
- Construction Index
- Durham University Finance Society
- Doka UK, CITB and Experian Research
- Exporting is Great
- Lexology
- Eversheds
- Sustainable Homes UK
- BREEAM
- House of Commons.

Appendix 2: Country factsheet (UK example)

Indicator	Measures	How measures are assessed/References
Key figures		
Construction market	<ul style="list-style-type: none"> • Number of enterprises • Production (volume index of production) • Gross value added 	<ul style="list-style-type: none"> • Assessed by subsectors and regions • Eurostat 2019
Productivity	<ul style="list-style-type: none"> • Labour productivity (GDP per hour worked is calculated as a real output per unit of labour input (measured by the total number of hours worked) rather than per person employed) 	<ul style="list-style-type: none"> • Assessed by subsectors and against Government Policies • Eurostat 2019
Turnover and profitability	<ul style="list-style-type: none"> • Turnover (total of all sales) • Gross operating surplus • Gross operating rate (indication of sector profitability) • Construction costs • Construction cost index (cost of labour, materials and plant and overheads) • Input prices for materials 	<ul style="list-style-type: none"> • Assessed by subsector/material • Eurostat 2019
Employment	<ul style="list-style-type: none"> • Total workforce • % of Migrant workforce • Employment by specific occupation (included self-employed workers) 	<ul style="list-style-type: none"> • Assessed by subsector, region, and organisation size • Eurostat 2018/19
Macroeconomic indicators		
Economic development	<ul style="list-style-type: none"> • GDP change • Consumer price inflation • Inflation rate 	<ul style="list-style-type: none"> • Assessing reasons behind change (e.g. private consumption growth)
Demography and employment	<ul style="list-style-type: none"> • Total population • Migration • Working age population • Ageing population • Unemployment rate • Youth unemployment 	
Public finance	<ul style="list-style-type: none"> • Government expenditure • General government deficit • Government gross debt • Global competitiveness report rank 	<ul style="list-style-type: none"> • Assessed as % of GDP • Ranking of Global Competitiveness Report indicators • Government expenditure

Entrepreneurship and access to finance	<ul style="list-style-type: none"> • European commission rank for Entrepreneurship and access to finance • Number of procedures to start a business • How long it takes to complete the process 	<ul style="list-style-type: none"> • European commission 2019 SBA Fact Sheet • E.g. established business ownership rate and strength of legal rights index
Economic drivers		
Business confidence	<ul style="list-style-type: none"> • Consumer confidence indicator • Industry confidence indicator • Construction confidence indicator • Investment ratio • Investment per worker • Future business activity (next 12 months) 	
Domestic sales	<ul style="list-style-type: none"> • Most domestically sold construction products • Domestic sale value • Changes in product value • Share in construction product domestic sales 	<ul style="list-style-type: none"> • Assessed by products • PRODCOM 2019
Export of construction-related products and services	<ul style="list-style-type: none"> • Most exported construction products • Value of exports • Changes in product value • Share in construction product export sales • Exported construction services • Imported construction services • Trade deficit 	<ul style="list-style-type: none"> • Assessed by products • PRODCOM 2019
Access to finance in the construction sector	<ul style="list-style-type: none"> • Lending/funding/access to finance for SMEs (e.g. bank loaning) • Net lending 	<ul style="list-style-type: none"> • Government schemes • National Federation of Builders (NFB) • E.g. government launched an online tool to enable SMEs to check when large businesses pay their suppliers • Also supply chain financing, project bank accounts, home building fund

Access to housing	<ul style="list-style-type: none"> • Number of households • Population spread • Mean equivalised net income • House price index • Outstanding residential loans • Mortgage interest rates • Residential construction activities (number of dwellings completed) • Housing deficit • Percent of income spent on housing • Home ownership (mortgage/no mortgage) • Home ownership rate (income) • Share of tenants • Housing affordability issues • Housing cost overburden rate • Overcrowding rate • Sever housing deprivation rate 	<ul style="list-style-type: none"> • Assessed by region, city vs non-city, age demographics, income levels • Property market • Eurostat 2019 • ECB MFI Interest Rate Statistics 2018
Infrastructure	<ul style="list-style-type: none"> • Global Competitiveness Report ranking for Infrastructure and break down of their indicators • Efficiency of infrastructure • Quality of infrastructure 	<ul style="list-style-type: none"> • Global Competitiveness Report
Key issues and barriers in the construction sector		
Company failure	<ul style="list-style-type: none"> • Company births • Company deaths • Insolvencies • Bankruptcy 	<ul style="list-style-type: none"> • Assessed by sub-sectors
Trade credit	<ul style="list-style-type: none"> • OECD ranking of high-income countries in terms of getting trade credit • Domestic credit • Trade covered by trade credit policies • Trade credit as financing practice in supply chain • Other sources of finance compared with trade credit • Trade credit risk • Applications for trade credit • Availability of trade credit 	<ul style="list-style-type: none"> • OECD ranking of high-income countries • SAFE Report 2018
Late payment	<ul style="list-style-type: none"> • Payment record • Outstanding invoices • Causes for late payment • Payment method and timeframe • European Payment Risk Index • Cash retention value • Cash retention reasons 	<ul style="list-style-type: none"> • Survey conducted by European Payments Industry White Paper 2018 • European Payment Risk index • Assessed by sub-sector and organisation size (SMEs etc)

Time and cost of obtaining building permits and licenses	<ul style="list-style-type: none"> • World Bank's Doing Business ranking for 'dealing with construction permits' • Number of procedures to obtain building permits and licenses • Time length to obtain permits and licenses • Cost of process • Number of procedures, time length and cost compared to the OECD high-income average • Licensing requirements 	<ul style="list-style-type: none"> • World Bank's Doing Business Report 2019 • OECD ranking of high income countries
Skills shortage	<ul style="list-style-type: none"> • Job vacancies • Number of tertiary students in engineering, manufacturing and construction • Adult participation in education and training • Labour shortages • Skilled workers reaching retirement age in the next ten years • Job creation in the next 5 years • Annual need (including non-construction professionals) • Appeal of a construction career in young adults • Availability of skilled workers • Skilled shortage gap • Annual need of skilled workers • Subsector growth performance 	<ul style="list-style-type: none"> • Assessed by subsectors, roles • Construction Industry Training Board (CITB) • UK Government Surveys • National Federation of Builders (NFB)
Sector and sub-sector specific issues	<ul style="list-style-type: none"> • Material efficiency • Waste production • Waste recovery • Climate and Energy • Carbon emissions 	
Innovation		
Innovation performance	<ul style="list-style-type: none"> • Ranking on European Innovation Scoreboard for innovation performance • Strengths and weaknesses according to the scoreboard (see below) • Human resources: includes three indicators and measures the availability of a high-skilled and educated workforce. Captures new doctorate graduates, population 25-34 with completed tertiary education and population 25-64 involved in education and training. • Attractive research systems: three indicators and measures the international competitiveness of the science base by focusing on international scientific co-publications, most cited publications, and foreign doctorate students. • Innovation-friendly environment captures the environment in which enterprises operate and includes two indicators, broadband penetration among enterprises and opportunity-driven entrepreneurship, measuring the degree to which individuals pursue entrepreneurial activities as they see new opportunities. • Finance and support include two indicators and measures the availability of finance for innovation projects by venture capital expenditures, and the support of governments for research and innovation activities by R&D expenditures in universities and government research organisations. • Firm investments include three indicators of both R&D and Non-R&D investments that firms make to generate innovations and the efforts enterprises make to upgrade the ICT skills of their personnel/ 	<ul style="list-style-type: none"> • European Innovation Scoreboard 2018 • Assessed by subsectors

	<ul style="list-style-type: none"> • Innovators includes three indicators measuring the share of firms that have introduced innovations onto the market or within their organisations, covering both product and process innovators, marketing and organisational innovators, and SMEs that innovate in-house. • Linkages includes three indicators measuring innovation capabilities by looking at collaboration efforts between innovating firms, research collaboration between the private and public sector, and the extent to which the private sector finances public R&D activities. • Intellectual assets capture different forms of Intellectual Property Rights (IPR) generated in the innovation process, including PCT patent applications, trademark applications and design applications. • Employment impacts measures the impact on employment and includes two indicators measuring employment in knowledge-intensive activities and employment in fast-growing firms in innovative sectors • Sale impact measures the economic impact of innovation and includes three indicators measuring exports of medium and high-tech products, exports of knowledge-intensive services and sales due to innovation activities • Business enterprise R&D expenditure (BERD) • Total R&D personnel (FTE) • Construction related patent applications 	
Eco-innovation and digitalisation	<ul style="list-style-type: none"> • Digital tools available • E.g the Quality tracker to improve the quality of outcomes in the construction industry 	<ul style="list-style-type: none"> • Royal Institute of British Architects (RIBA), Chartered Institute of Building (CIOB) and Royal Institution of Chartered Surveyors (RICS) 'the Quality Tracker'
National and regional regulatory framework		
Insurance and liability related regulations	<ul style="list-style-type: none"> • Penetration of insurance • Employers liability insurance • Professional indemnity insurance • Contractors all risk cover • Product liability insurance that covers risks caused by products • Contractors all-risk insurance • Collateral warranty • Terrorism insurance 	<ul style="list-style-type: none"> • Government policies, laws, acts
Current status and national strategy to meet Construction 2020 objectives		
Investment conditions and volumes	<ul style="list-style-type: none"> • Total investment by the broad construction sector • Total investment in construction • Investment index • Household renovation spending 	<ul style="list-style-type: none"> • Eurostat 2019 • AMECO 2019 • Assessed by subsectors and what the investments were in
Skills	<ul style="list-style-type: none"> • Apprenticeship levies • Training hubs • Reforms to Vocational Educational and Training (VET) • Students enrolled in VET • Employment rate of VET students • Highlights labour shortages and skills gaps 	<ul style="list-style-type: none"> • Government Policies

Resource efficiency/Sustainable construction	<ul style="list-style-type: none"> • Energy saving measures and targets • Energy consumption (final and primary) • New tools to evaluate sustainability • E.g. Sustainable Development Commission (SDC) free online tool 2017 	<ul style="list-style-type: none"> • EU Energy Efficiency Directive • Government policies, schemes, funding, regulations and standards
Single market	<ul style="list-style-type: none"> • Score of the EU Single Market Scoreboard • Internal market information system • Public procurement • Transposition of law • Infringements • Technical regulations information system • Points of single contact • Postal services • Trade in goods and services • Foreign Direct Investment (FDI) • Proportion of goods and services government purchases from SMEs • Trade integration in the single market (Scoreboard - % GDP) • E.g. horizontal authorisation schemes in place/system of building inspections as a quality and safety control mechanism • Construction workforce demographics – e.g % foreign-born • Employment on-site foreign labour • How many of skilled workers are from abroad 	<ul style="list-style-type: none"> • EU Single Market Scoreboard • European commission SBA Factsheet
International competitiveness	<ul style="list-style-type: none"> • Global Competitiveness Index ranking • Internationalisation of SMEs (SMEs that export internationally) • Number of export procedures for business • Trade gap between total exports and total imports for construction products and materials • Availability of export finance • Availability of export insurance • Industry partnerships that enable international competitiveness 	<ul style="list-style-type: none"> • Global Competitiveness Index