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INVESTMENT, WORKPLACE INNOVATION AND SUSTAINABILITY IN SCOTLAND: PATHWAYS TO PRODUCTIVITY

EXECUTIVE SUMMARY

This collaborative research project between Scottish Enterprise (SE) and the Productivity Institute's (TPI) Scotland Forum at the University of Glasgow (UoG) investigates the role of investment, workplace innovation and sustainability in promoting Scotland's regional productivity. Focused on an outcome of inclusive growth, the project aims to evaluate how targeted investments can unlock long-term economic potential.

Scotland's productivity landscape is deeply uneven. While Edinburgh records the highest GVA per hour worked (£49), Highland and Island regions are up to 70% lower, and only 6 of 23 regions exceed the national average. Moreover, more than 50% of recent Scottish graduates are *underemployed*, digital uptake among SMEs and Scotland's MNCs is limited, and only 7.3% of Scots engage in early-stage entrepreneurship.

To address these challenges, the project asks three central questions:

1. *How is investment distributed across regions, and how does it influence innovation?*
2. *How do workplace innovation practices mediate the link between investment and productivity?*
3. *How does a focus on sustainability goals shape investment and innovation priorities?*

Using a mixed-methods approach – combining stakeholder interviews, regional economic data, and place-based case studies, the study will analyse:

- Green energy investments like Coire Glas and Ardersier Port
- Organisational innovations such as the FITwork programme and Fair Work practices
- Strategic frontier projects like Orbex Spaceport, Sumimoto's Nigg factory, and the Edinburgh DDI programme

Findings will contribute to a policy-relevant framework for regional economic development, helping shape future strategies by; 1) Mapping investment models and outcomes; 2) Identifying innovation levers that boost productivity; 3) Proposing regional productivity dashboards and planning tools.

The project will culminate in a final report, targeted policy briefings, and dissemination workshops aimed at translating research into action.

INTRODUCTION

Scotland stands at a crossroads in its economic development. Despite world-class educational institutions, abundant natural resources, and a strong rhetorical policy commitment to inclusive growth and sustainability, Scotland continues to face persistent regional inequalities, skills mismatches, and stagnating productivity. As global economic uncertainties intensify and post-industrial transitions reshape the labour market, Scotland's capacity to deliver regionally balanced and innovation-led growth is increasingly important.

The proposed collaborative research project between the Productivity Institute's Scotland Forum at the University of Glasgow and Scottish Enterprise, aims to investigate the role of investment, workplace innovation and sustainability in driving regional productivity across Scotland. It seeks to understand how investment intersects with workplace innovation and sustainability priorities to generate positive and inclusive economic outcomes. Anchored in empirical case studies and leveraging data from established datasets such as the FAME database and the Fraser of Allander (along with SE data), this study aims to provide a policy-relevant framework for guiding future investment and productivity strategies.

RESEARCH AIMS AND QUESTIONS

The overarching aim of the study is to explore how investment, workplace innovation and sustainability goals can be leveraged to promote regional productivity gains. In doing so, it moves beyond aggregate measures of economic performance to examine the institutional and organisational conditions under which investment translates into long-term development.

Three primary research questions underpin the proposed study:

1. **Mapping the current landscape of investment across Scotland's regions, with a focus on innovation outcomes**

   "What is the current distribution and nature of investment across Scotland's regions, and how is this investment linked to regional innovation outcomes?"

2. **Explore how workplace innovation practices mediate the relationship between investment and productivity**

   "In what ways do workplace innovation practices – such as skills development, organisational change, fair work practices, and technology / AI adoption – mediate the relationship between investment and productivity outcomes?"

3. **Investigate the role of sustainability in guiding investment strategies and innovation priorities**

   "How does targeting sustainability goals influence investment strategies and shape innovation priorities within Scottish regions and/or industries?"

FRAMING PRODUCTIVITY: MEASURES AND PROXIES

Assessing productivity outcomes across regions and sectors requires a nuanced approach. While GVA/hr worked remains a principal measure of labour productivity, it fails to gully capture underlying conditions such as skills utilisation, innovation capability, and institutional support for workplace reform.

For this reason, this project will incorporate both 'direct measures' (GVA/hour, output per worker) and 'proxy indicators' to trace productivity shifts. Some suggestions for these proxies are:

- **Graduate underemployment:** Over 50% of recent Scottish graduates are employed in non-graduate roles, signalling poor alignment between higher education outputs and regional labour markets.
- **Business formation and scale-ups:** Scotland has 150 fewer firms per 10,000 people compared to England, with a TEA (Total Early-Stage Entrepreneurial Activity) rate of 7.3% vs 10.1% in England and 12.4% in Ireland.
- **Digital adoption:** Uptake of AI and digital tools is typically concentrated in urban clusters, with rural and peripheral regions lagging significantly.
- **Fair work certification and workplace innovation:** Uptake of government-backed Fair Work standards has improved retention and morale in several sectors, offering an indirect gauge of innovation readiness.

These indicators enable a multi-dimensional understanding of productivity that aims to integrate economic output with social and institutional resilience.

REGIONAL AND SECTORAL FOCUS

Scotland's economic geography is marked by stark disparities in productivity, levels of investment, and innovation. While Edinburgh, bolstered by its finance, R&D, and digital sectors, records the highest GVA/hr (£49), Highland and Island regions register just £28.6 in the same metrics – a productivity gap of nearly 70%. Only six of Scotland's 23 regions exceed the national average for productivity, reflecting deep-seated structural inequalities.

This research project adopts a **place-based development lens**, concentrating on the following regional clusters:

Region	*Focus*
Edinburgh and Southeast	Anchored in the ambition to become the "data capital of Europe"; leads in digital innovation and high GVA output
Glasgow City Region	Excellent higher education, high graduate output, precision medicine etc., but severely underperforms in productivity measures due to legacy industrial structures, and skills mismatches
Northeast and Aberdeen	Transitioning from oil dominance to renewables, represents a test case for sustainable reindustrialisation and

	workplace innovation through re-skilling and organisational change
Highlands and Islands	Major renewable infrastructure projects and blue economy potential; presents unique challenges and opportunities for inclusive investment
South of Scotland and Borders	Emphasising agri-food systems, green economy projects, rural entrepreneurship, exemplifies grassroots innovation models.

These sectoral priorities also align with those identified in the *From Growth to Good* strategy and include:

- Green energy (hydrogen, offshore wind and hydro)
- Digital and creative industries (gaming, digital diagnostics, film industry etc.)
- Precision medicine (biotech and life sciences)
- Agri-food and rural enterprise
- Financial services and data-driven innovation

METHODOLOGICAL APPROACH

The project will adopt a **mixed-methods, interdisciplinary framework** to understand the nuanced ways investment influences regional productivity through the channels of innovation and sustainability. The complexity of Scotland's regional economies, along with the diverse types of investments and policy mechanisms involved necessitates this approach.

1. **Qualitative**

- **Case Study Design:** Regional case studies will anchor the analysis, examining how investment, workplace innovation and sustainability targets interact with local institutions, firms, and labour markets. Each case will explore one or more of the study's RQs.
- **Stakeholder Interviews:** Semie-structured interviews will be conducted with:
    - Local and regional economic development agencies (SOSE, HIE etc.)
    - Innovation hubs and accelerators (Glasgow Innovation Hub, TechScalers etc.)
    - Sector leaders in green energy, space tech, life sciences, and creative industries (Scottish Power / SSE, Abla Orbital, EnteroBiotix, STV, Halon etc).

2. **Quantitative**
    - **Regional Productivity Metrics:** Analysis of GVA/hr, employment by sector, graduate retention, business density etc., will be mapped against investment data.
    - **Proxy Indicators:** Data on digital adoption, training uptake, SME R&D intensity, Fair Work practices where 'direct' productivity data either isn't available or can be supplemented.

3. **Conceptual Mapping**

A thematic could be used to cross-analyse the relationship between:

- Type of investment (public/private/blended)
- Form of innovation (technological/organisational/workplace-based)
- Sector and region
- Outcome (productivity growth, employment quality, sustainability targets)

CASE STUDIES: THREE PILLARS IN PRACTICE

To bring empirical depth to the research, several case studies will be selected across contrasting Scottish regions and sectors. These will reflect Scotland's geographic and sectoral diversity, and serve to illustrate the effectiveness of investment, workplace innovation and sustainability in driving productivity and innovation.

Below details some identified case studies related to the project's RQs:

1. **Sustainability: Green Energy Transitions**

Project	*Coire Glas Pumped Hydro, Highlands*
Lead Firm	SSE Renewables
Investment	£1.5 billion (largest electricity storage project in UK)
Focus	Energy resilience; engineering jobs; high-value, high-productivity infrastructure
Productivity Relation	Capital-intensive project with spillover effects on construction, engineering training, and energy security

Project	*Port of Ardersier Offshore Wind Hub, Moray Firth*
Investor	SNIB (£50 million loan)
Potential partners to target	Port operators; offshore OEMs; local training colleges
Focus	Infrastructure and workplace change through repurposing, high-skill job creation and training
Productivity Relation	Sustainability alignment with net-zero targets and renewable energy capacity building

Suggested stakeholders to approach:

- SSE (for Coire Glas strategy and workforce planning)
- Ardersier Port Authority
- Local colleges offering renewable energy training (e.g., North Highland College UHI)

2. **Workplace Innovation: Fair Work and Organisational Change**

Programme	*FITwork*
Lead	University of Strathclyde

Focus	Toolkits for productivity through better employment practices
Case firm	Matthew Algie (featured in FDF case studies for Fair Work First compliance)

Example Region	*South of Scotland*
Community Innovation	Glentrool community-led rural services
Support agency	SOSE
Practice	Participatory governance and inclusive innovation

Suggested stakeholders to approach:

- University of Strathclyde FITwork team
- Matthew Algie (coffee roaster with proven Fair Work strategy)
- Glentrool and SOSE
- Employers transitioning to AI or hybrid work models

3. **Strategic Investment: Frontier Technology and Regional Clusters**

Case	*Orbex Space Tech, Sutherland Spaceport*
Investment	Regional and SE support
Sector	New space economy
Focus	Placing a remote region at the heart of Europe's commercial space launch sector
Innovation link	Investment in high R&D, high-value employment, technology in the rural economy

Case	*Sumimoto Electric, Nigg*
Investment	£350 million subsea cable manufacturing facility
Sector	Advanced manufacturing linked to renewables
Focus	Long-term infrastructure, export potential, upskilling

Case	*Edinburgh Data-Driven Innovation (DDI) Programme*
Investment	£660 million with a £1.5 billion City Region Deal
Output	Digital innovation centres, data science training, new business-university partnerships
Focus	Education, data economy, SME digital readiness

Suggested stakeholders to approach:

- Orbex leadership or project managers at Sutherland Spaceport
- Sumimoto Electric UK management
- University of Edinburgh / DDI programme office
- Local SMEs connected to the DDI hubs

POTENTIAL DATA SOURCES

A diverse range of data sources will support both qualitative insights and quantitative tracking:

Source	*Use Case*
FAME Database	Firm-level financial and investment patterns (esp. SMEs and scale-ups)
Fraser of Allander	Labour market analyses; macroeconomic policy trends
Scottish Gov / ONS	GVA; employment trends; regional data
TPI Data Lab	Capital flows; regional investment tracking
SNIB Annual Reports	Strategic investment focus; sectoral funding
Fair Work Monitor (Scottish Gov)	Uptake of fair employment practices tracker
SE, HIE, SOSE	Regional strategy documents and outcomes evaluations (simple coding looking for keywords etc.)
FITwork Toolkit	Evidence on organisational change and productivity effects

EXPECTED CONTRIBUTIONS AND POLICY IMPLICATIONS

The research in this project is designed to be evidence-driven and action-oriented, with an aim to inform policy, practice and investment strategies in Scotland's regions. By analysing the interrelationship between investment, workplace innovation, and sustainability across Scotland's diverse regions, the project aims to offer valuable contributions and practical knowledge to Scotland's academia, enterprise support systems, and policy.

1. Policy-Oriented Investment Framework

The project will develop a **taxonomy** of investment models – mission-led; public-private; regional development deals etc – evaluating how each impacts productivity

outcomes across Scotland's regions and sectors. This aims to provide policymakers and enterprise support networks with tools to compare models and prioritize investments based on inclusive growth potential.

2. Regional Productivity Blueprint

Drawing on regional case studies and sectoral strengths, the project will build upon a place-based productivity framework, detailing how different combinations of 1) investment types; 2) innovation mechanisms; 3) sustainability criteria, contribute to long-term regional economic resilience.

This will support local and national authorities – including SE, SOSE, and SG – in targeting resources to areas of greatest impact.

3. Insights on Workplace Innovation

By identifying workplace innovation as a "productivity multiplier", the project will highlight how organisational practices (e.g., skills training, Fair Work, digital / AI adoption) bridge the gap between capital input and economic output. These findings will assist enterprise agencies and employers in refining support strategies and employment programmes.

4. Data-Driven Recommendations

The project will assemble and interpret a broad dataset – including GVA, labour market participation, business density, digital adoption rates, and sustainability investments – to create a dashboard of regional innovation readiness. This tool could be updated annually to track progress and guide future interventions.

5. Stakeholder-Engaged KE

Findings will be disseminated through:

- Policy briefings (targeted at local authorities, SE, HIE, SOSE)
- Stakeholder workshops with business leaders
- Publications and toolkits
- A final public report summarising case study outcomes and strategic recommendations

CONCLUSION

Scotland possesses the foundational ingredients for a thriving, inclusive, and sustainable economy. However, the current landscape is marred by fragmented investment, regional inequality, and underutilised talent.

This project recognises that productivity is not a narrow economic metric, but a reflection of how effectively a society mobilises its resources – human, institutional, environmental and financial – toward shared goals. By examining productivity outcomes through the lenses of investment, workplace innovation and sustainability, we reposition productivity not as an output, but as an outcome of deliberate and inclusive strategic design.

The findings will aim to support Scotland's regions in moving from strategy to delivery, ensuring its regions grow productively, fairly, and resiliently.