

Harnessing Global Standards for Technological Leadership: A Comparative Study of the UK and Other Leading Nations

PI: Professor Cher Li

Affiliation: Aston Business School

OVERVIEW

Technical standards play a crucial role in shaping global technology markets, influencing innovation, trade and competitiveness. This research finds that while the UK has a credible presence in international standards development organisations (SDOs), particularly in telecommunications services and enterprise technologies, it remains less active in several strategically important technology areas such as semiconductors and hardware standards. The report highlights the importance of standards participation as both a source of technological influence and a driver of innovation and recommends stronger policy support to expand UK engagement.

HIGHLIGHT

Despite growing policy interest in standards as a strategic tool, there has been limited evidence on how UK participation compares internationally. To address this gap, the study created a unique dataset covering more than 2.6 million firm-year observations across 19 international technology standards organisations between 1997 and 2025. The analysis combines membership information with data on company performance, innovation activity and public funding support.

PURPOSE

The research examines how well the UK is positioned within the global standards system compared with the United States and China, and what this means for innovation and industrial policy. Standards development organisations create the technical rules that enable interoperability and influence the direction of emerging technologies.



INNOVATION &
RESEARCH
CAUCUS

[Click to view full project](#)



Delivered with
ESRC and
Innovate UK

FINDINGS

The research shows that the United States remains the dominant participant in international standards development, accounting for more than 80% of total participation across the UK, US and China. China has rapidly expanded its involvement, particularly in technology-focused organisations linked to 5G, semiconductors and wireless technologies. The UK maintains a meaningful presence but is stronger in services-oriented and enterprise standards than in hardware-focused areas.

The study also finds that UK participation is concentrated among larger, innovation-intensive firms, particularly those operating in technology and telecommunications sectors. Participation is geographically clustered around London and the South of England, with lower levels of engagement in many other regions.

Importantly, standards participation appears to generate business benefits. After controlling for firm characteristics, participation is associated with increased employment and significantly higher innovation activity, measured through patent families. Firms receiving Innovate UK support are also more likely to engage in standards development activities, suggesting a valuable link between innovation funding and standards participation.

Evidence from US firms indicates that participation can strengthen a company's position within global supply chains. Organisations involved in standards development gain more business connections and become more influential within international production networks. These advantages are strongest for firms with strong research and development capabilities.

DISCUSSION / IMPLICATIONS

The findings suggest that participation in standards development should be viewed as a strategic component of innovation policy rather than a purely technical activity. Standards help determine future markets, shape technology adoption and create opportunities for firms to influence global rules and capture value from innovation.

For the UK, maintaining leadership in areas such as 5G and emerging 6G technologies should be a priority. The report also highlights the need to strengthen participation in semiconductor, computing and hardware-related standards where UK representation is relatively weak despite national ambitions in these sectors.

The study recommends establishing a dedicated Standards Participation Fund to help innovative SMEs and scale-ups overcome the costs of engagement. It also calls for greater investment in standards linked to artificial intelligence, clean energy and health data, where the UK possesses strong research capabilities and future opportunities for international leadership.

Improving participation in international standards organisations could help convert the UK's scientific strengths into greater technological influence, stronger innovation performance and enhanced competitiveness in future global markets.