

## Evaluation of the societal impacts of space

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### Project highlights:

This project is STEM-based but the student will become part of SPEAR (Space Exploration Analysis and Research) cluster which is a cross-faculty initiative between STEM and The OU Business School.

1. Year 1 - Perform a literature review to evaluate the use of capitals in other public policy settings, focusing on their application to the space sector, and design an evaluation framework. Preliminary alignment to SDGs.
2. Year 2 – Create a survey and engage (via interviews or other engagement methods, e.g. evidence cafes) with a sample of relevant stakeholders to create indicators/evidence of those capitals. Analyse in the context of international commitments to SDGs. Present initial findings to a national or international conference.
3. Year 3 – Evaluate and present results to stakeholders as part of a sensitivity analysis. Submit an international conference/paper and journal article. Write up and submit thesis.

Students should have a strong background in social sciences, with a keen interest in science and technology underpinning space-exploration.

### Project description:

The evaluation of the benefit of space-related activities has traditionally been undertaken using only economic measures. Indeed, the Organisation for Economic Cooperation and Development (OECD) defined the space economy as (OECD, 2009):

“...the full range of activities and the use of resources that create and provide value and benefits to human beings in the course of exploring, understanding, managing and utilising space.”

As the global space economy expands, however, there are additional factors that both challenge and complement it, including environmental sustainability, emerging of new space-faring nations, increase in commercial actors and global economic slowdown. To this end, evaluating space activities using only financial means largely omits many societal benefits that are less tangible.

One method for addressing this is the capitals approach, which has been increasingly used in studies evaluating public policy programmes (Nussbaum, 2011; Thomas and McElroy). Capitals (Bourdieu, 1985) may include, *inter alia*: cultural/symbolic capital; educational capital; environmental capital; financial capital; human capital; organisational capital; social capital and technological capital. A similar benefit mapping activity has been undertaken as part of a wider study into the socio-economic benefits and disbenefits of the European Space Agency E3P programme (BEERS) and preliminary work with SaxaVord, the UK Space Port in Shetland, is underway to establish benefits of this activity, focusing on financial, infrastructure and other direct benefits.

The purpose of this studentship is to evaluate the categories of societal benefits that arise from particular space exploration programmes by defining and applying a capitals approach that focuses on the less tangible benefits that are traditionally difficult to measure, including social capital, environmental or natural capital and cultural capital. The student will review the use of the capitals approach in evaluation studies in both space and non-space contexts and on this basis define the capitals in the context of the space sector. These will then be aligned to the Societal Development Goals (SDGs) to identify wider benefits that are intrinsically built into international policy.

#### **References:**

1. OECD (2012) OECD Handbook on Measuring of the Space Economy, Paris; Organisation for Economic Co-operation and Development, p.9.
2. Nussbaum, M. (2011). Creating Capabilities: The Human Development Approach. Cambridge, MA: Harvard University Press
3. Thomas, M.P. and. McElroy, M.W. (2016) The MultiCapital Scorecard: Rethinking Organizational Performance, Vermont: Chelsea Green Publishing,
4. Bourdieu, P (1985) Distinction: A Critique of Taste, Oxford: Oxford University Press.