

# Societal Impact Highlights



**Researcher:** Sandro Mendonça  
**Research Group:** Economics

## **Case study:** Innovation in the field of innovation indicators

### **Summary**

Sandro Mendonça has examined the potential role of new indicators of innovation, in a paper published in 2004 *Research Policy*, the leading journal on science and technology studies. Mendonça and colleagues argued that trademarks were an underappreciated source for understanding change in the economy and that this indicator could uncover innovation in sectors like services or traditional industries. This paper has been used by public policy institutions and has remained the leading methodological reference in this area. It has been used to justify the opening up of the innovation indicator portfolio so as to highlight developments that are not captured with standard science and technology statistics like R&D spending or patents. Today the trademark indicator features regularly in reports by institutions such as the OECD or the National Science foundation in the US.

### **Underpinning research**

The study of new indicators of innovation is a research program that has thrived for the past decades. This is linked to the concept of “Schumpeterian competition”, that is, the view that competition is a continuous but disruptive renewal process in which new products and processes are tentatively introduced and ripple through the economy. Competition, so argued Joseph Schumpeter, is more than setting prices and quantities. It is about searching and sorting genuine novelty. Economic growth is therefore also a process of variety accumulation that is perpetually negotiated at the microlevel between entrepreneurs and users.

Sandro Mendonça and co-authors Tiago Santos Pereira (of the University of Coimbra) and Manuel Mira Godinho (Lisbon University) published their original 2004 paper as claim that trademark applications capture differentiation initiatives by economic agents in ways that established indicators do not. R&D spending, which is a measure of efforts into firm or national competitiveness, only counts formal investment into science and technology inputs. Patents, a popular metric of innovative output, are also geared towards pointing to inventions that are heavy on artefact tinkering or sophisticated engineering. Both R&D and patents have blind spots as they are tilted towards sensing changes in larger firms in high-tech sectors.

Trademarks, on the contrary, held the promise of allowing for a broader concept of innovation. One that accommodated softer dimension of change. This point was made almost simultaneously by Schmock (2003), which published a sector-based paper on German marks, and Mendonça et al. (2004), which used national and international markets to link trademarking and innovation in a variety of industries. The Mendonça paper came out from insights on a report delivered to the Portuguese patent office in 2003. When that study was started trademarks were not mentioned in any standard work as an empirical tool. By 2009 a research paper by the OECD was giving credence to these findings.

## **References to the research**

Key research article:

- Sandro Mendonça, Tiago Santos Pereira and Manuel Mira Godinho (2004), "Trademarks as an indicator of innovation and industrial change", *Research Policy*, Volume 33, Issue 9, November, pp. 1385-1404. doi:10.1016/j.respol.2004.09.005.

Other work:

- Policy report: Mendonça (ed.) (2011), *Estudo sobre o contributo das marcas para o crescimento económico e para a competitividade internacional*, INPI: Lisbon.
- Book chapter: Mendonça. S. (2012), "Trademarks as a telecommunications indicator for industrial analysis and policy", in A.M. Hadjiantonis and B. Stiller (eds), *Telecommunication Economics*, Lecture Notes in Computer Science 7216, pp. 33-41.

## Details of the impact

The results of Sandro Mendonça's (2004) research have impacted the empirical literature of the economics, policy and management of innovation and technical change. Further research corroborated the initial insight that trademarks could be connected to product innovation. Developments of this approach started to be published by authors in UK, the Netherlands, Italy, France, the US and elsewhere. The research agenda has been subsequently unfolded to cover a number of niches, including recently: cosmetics, traditional medicine, shadow banking, venture capital, start-ups, etc.

Showing that valid insights could be extracted from trademarks at the firm, industry and country level helped to establish the legitimacy of this indicator in official, non-academic circles. The notion seems to have sunk in that there are key non-technological aspects to innovation. The area of industrial and innovation policy has made the most out of this potential. The trademark indicator helps policy analysts to complement existing approaches and marshal new evidence toward object of analysis that were only poorly covered before by quantitative evidence

The Mendonça et al. (2004) paper was referred to early on in two policy reports, one presented to the US Senate and the other a research paper at the OECD:

- United States International Trade Commission (2008), Industrial Biotechnology: Development and Adoption by the U.S. Chemical and Biofuel Industries, Washington, DC.: USITC;
- OECD (2009), Trademarks as an Indicator of Product and Marketing Innovations, Paris: OECD.

The original work (Mendonça et al., 2004) keeps on being referred to in more recent policy reports, for instance:

- OECD (2012), OECD Internet Economy Outlook, Paris: OECD.
- OECD / The World Bank (2014), National Intellectual Property Systems, Innovation and Economic Development, Paris: OECD.

This approach has been also extensively used to understand the dynamics of developed countries (UK, Germany, France, Sweden, South Korea) but is also been deployed to study developing and emerging economies (China, India, Vietnam, Indonesia, Colombia, Mexico, Angola, Tunisia, etc.).

Today international organizations specialized in intellectual property rights policy regularly feature the new indicator. Such is the case with several reports of the World Intellectual Property Organization:

- WIPO (2011), World Intellectual Property Report: The Changing Face of Innovation, Geneva: WIPO. <http://bit.ly/1Mkmod3>

“Beyond patents, business models and firm strategies tend to rely on complementary protection of trademarks, designs and copyright, although this trend and the complementarity to patent use are harder to quantify.” (p. 53)

“Trademark demand increased from just below one million registrations per year in the mid-1980s to 3.2 million trademark registrations by 2009.” (p. 54)

- WIPO (2014), An “Algorithmic Links with Probabilities” Concordance for Trademarks for Disaggregated Analysis of Trademark and Economic Data, Geneva: WIPO. <http://bit.ly/1MW9PK>

“In Mendonça et al (2004), the authors suggest several ways in which trademarks can be used to analyze certain relevant aspects of innovation and industrial change. They encourage greater studies that use trademark data and explain how trademark-based indicators can provide a partial measure of innovative firm output, international patterns of specialization, links between technology and marketing, as well as the evolution of firm organization and structure.” (p. 4)

Private operators have also used the trademark insights. For instance, the International Chamber of Commerce launched in 2011, during the 6th Global Congress on Counterfeiting and Piracy, the report:

- Intellectual Property: Powerhouse for Innovation and Economic Growth. <http://bit.ly/1Nn51Z5>

In this report (with a footnote leading to a reference to Mendonça et al. 2004) it is said:

“Beside their quality and consumer-protection functions described below, trademarks also have been shown to be useful complements to other forms of IP protection, and positively linked with innovative activity and growth in firms that use them.” (p. 24)

Influential institutions at the national level regarding performance economic monitoring and research evaluation have provided reasons to use trademarks. This can be said about the National Science Foundation in the US:

- NSB (2012), Science and Engineering Indicators, Washington, DC: NSF.  
<http://1.usa.gov/1L6DbOV>

“Firms use trademarks to launch new products and services, promote their brand, signal novelty, and appropriate the benefits of their innovation. Trademarks enable companies to establish exclusive identities for their new goods and services and to distinguish their products from those of competitors. Trademarks are considered a downstream indicator of innovation, showing the efforts of firms to build brand equity in new products and services.” (p. 6-54).

### **Sources to corroborate the impact**

- WIPO (2011, 2014), World Intellectual Property Report: The Changing Face of Innovation, Geneva: WIPO. (p.53-54)  
<http://bit.ly/1Mkmod3>
- NSB (2012), Science and Engineering Indicators, Washington, DC.: NSF. (p. 6-54)  
<http://1.usa.gov/1L6DbOV>
- International Chamber of Commerce (2011), 6th Global Congress on Counterfeiting and Piracy, Intellectual Property: Powerhouse for Innovation and Economic Growth. (p.24)  
<http://bit.ly/1Nn51Z5>