TECHNISCHE UNIVERSITÄT WIEN
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The Significance of Industrial Designs for Innovation: Evidence from Austria

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Design: Definition and Types

- Design is "*A plan to arrange elements to accomplish a particular purpose*". (Eames 1972)
- Functional, aesthetic design, subtypes
- Design as user interface

Defibrillator for medical professionals

Source: https://www.dicardiology.com

Defibrillator for lay persons

Source: https://www.defibpad.co.uk

What is protected by design rights

Source: https://www.flickr.com

- Design rights protect the physical appearance of a product
- Features protectable are lines, contours, colours, shape, texture, material
- Monopolise ideas

Lowtech Design

Source: www.giesswein.com

Ergonomics

Source: private

Aesthetics

Source: https://www.alessi.com/us_en/kettle-9093-9093.html

Eco design

Source: www.pinterest.com

Hitech Design

Source: https://www.skidata.com

Source: https://www.bangolufsen.com

Motivation

- Over the past decades we can observe an increase in the significance of intellectual property rights (IPRs), including designs rights (WIPO, EUIPO, APO)
- Patents have gained the largest attention of all types of intellectual property rights in the economic literature by far (Griliches 1990; Jaffe & Trajtenberg 2002; Nagaoka et al. 2010; Hall et al. 2014)
- Other types of IP only start to matter in the literature (Munari 2014).
- Design is increasingly important ingredient to the competitiveness of firms (Verganti 2008; Micheli et al. 2012; Filitz et al. 2015).

Research Questions

Against this background, the overall objective of the dissertation is to uncover factors that drive the use of design rights.

- What characterizes firms that choose designs to protect their innovation processes and results?
- What distinguishes firms that choose national (Austrian) design registration to protect their innovation processes and results from those that choose EU-wide design registrations to protect their innovation processes and results?
- What determines the choice between industrial design rights and other modes of intellectual property in a sub-part of the Austrian firm population, i.e. Austrian start-ups?

Expected Contribution

- First, there is an ongoing debate about indicators for innovation in an international context. (IUS, OECD STI)
  - Counts of IPR are a widespread indicator in innovation statistics
- Second, an integration of major data sources allows a comprehensive analysis of the spread and significance of industrial designs
  - Geography of protection
- Third, an analysis of the determinants influencing the choice of industrial designs
  - yields new insights into how firms organize and manage their innovation processes and what kind firms try to gain value from their innovation activities by using industrial designs.

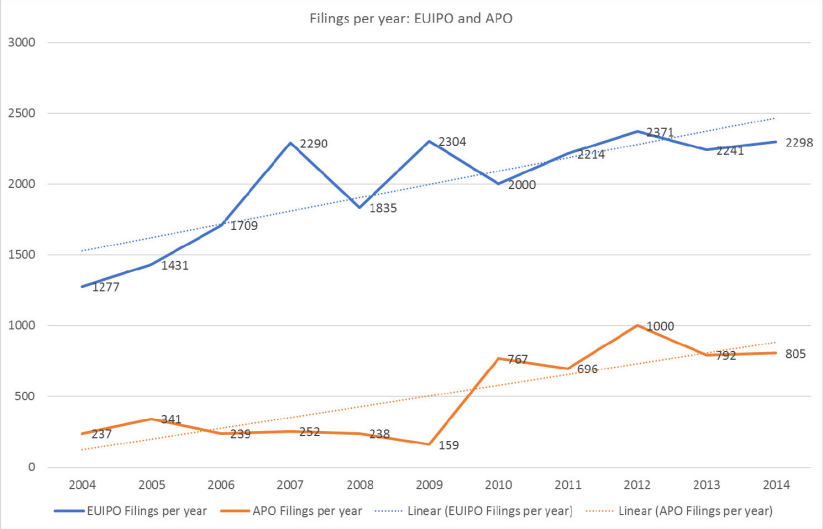
Methods

- A literature survey for a conceptual model that identifies factors that influence industrial design registration.
- A data base matching secondary data, unique data set
  - Three sources of secondary data: national/ EU designs, firm data
  - Structural characteristics of firms, different geographical coverage of design protection chosen by Austrian firms, and their combination.
- Count data modelling
- Primary data on firm strategy, motives, choice of designs and other IP to protect innovation activities and innovation results
  - Austrian Start-up Monitor
- Binary modelling

Matching of Design and Firm Data

	Austrian Patent Office	EU IP Office (EUIPO)
Owners registered	For Austrian protection	With Austrian origin
Time covered	2004-2014	
Number of registrations	5817	24015
Matched (in per cent)	57	71
Firms identified	276	735
Firms identified in both	55	

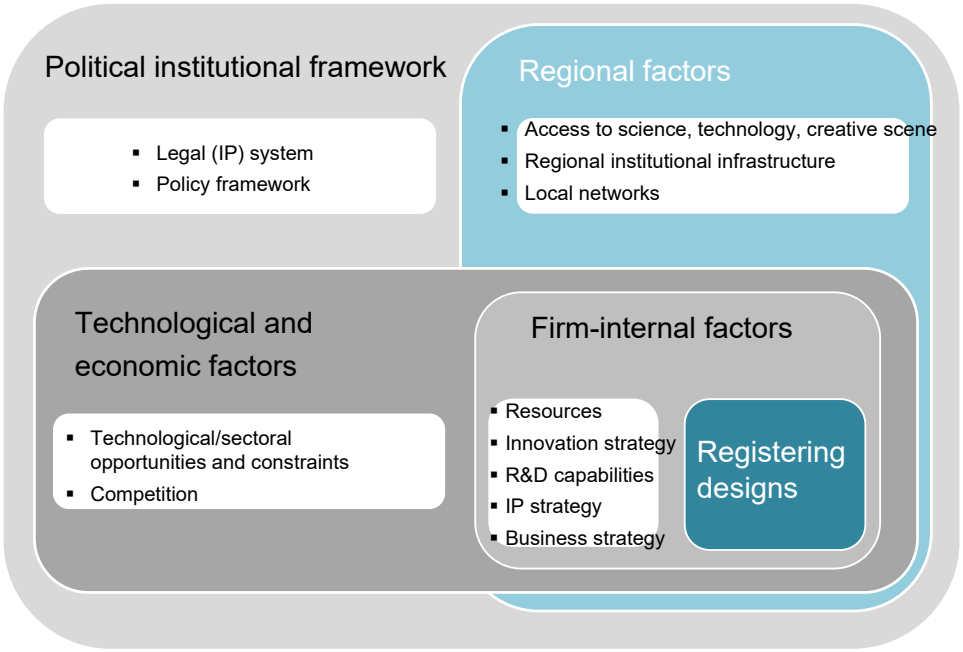
Comparison Time line



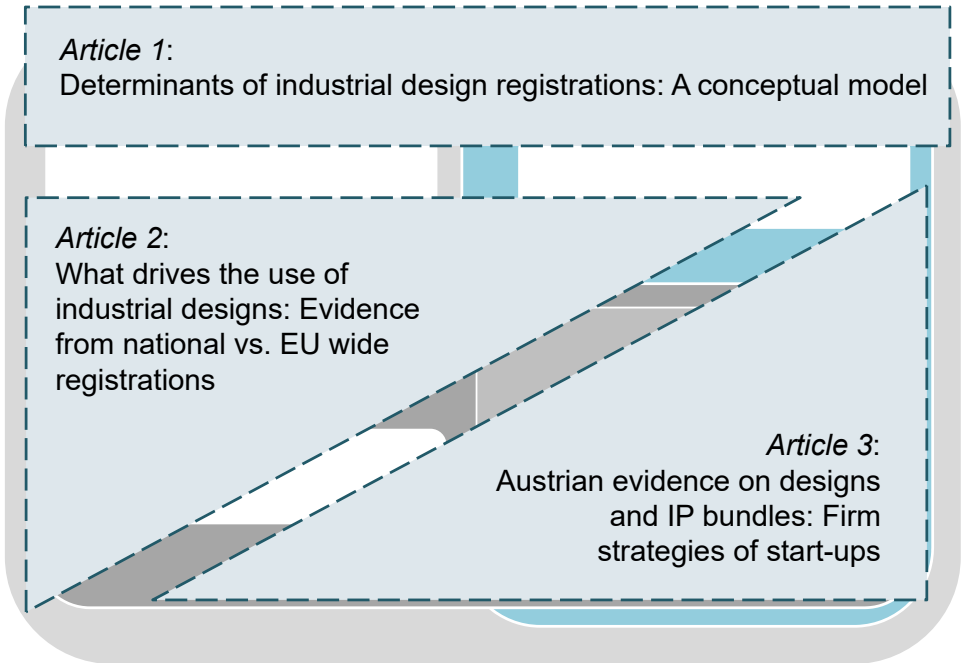
Three Research Articles

- Ar*ticle 1:* Determinants of industrial design registrations: A conceptual model
- *Article 2:* What drives the use of industrial designs: Evidence from national vs. EU wide registrations
- *Article 3*: Austrian evidence on designs and IP bundles: Firm strategies of start-ups

Literature and concepts



Literature and concepts



Literature

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Design rights as Innovation Indicator: Advantages

- Novelty/originality **of the design** are conditions *sine qua non*
- Investment of resources like time, skills and labour is necessary (Utterback 2006).
- Must be applied to products, as purely artistic work is protected by copyright (Wolf et al. 2017).
- Implies that the firm considers it has created something novel that is of some value (Rogers 1998; Filitz, et al. 2015).
- Often related to high market expectations (Filitz et al. 2015; Wolf et al. 2017).

Design rights as Innovation Indicator: Disadvantages

- Not all new designs are registered
  - This is a drawback to all IP indicators; notably patenting.
- Sectors differ in design opportunities, as in technological opportunities (Klevorick et al. 1995).
- Design registrations are of different value (for patents: Basberg (1987))
- Different national and international IP offices, different institutional characteristics (Archibiugi and Pianta 1996)