

A Scientific Approach to Entrepreneurship

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Many start-ups fail

 90% of newly-born start-ups fail within ten years, with around 21% of them failing already in their first year (National Business Capital, 2020; Chen et al. 2018).



- Why?
 - do not follow structured approaches to decision making and rigorous practices in collecting and interpreting data (Bennett and Chatterji, 2019; Bloom and VanReenen, 2007; Eisenmann, 2021; List, 2022);
- VS Scientists and their structured approach to exploring new phenomena

What if we could teach entrepreneurs to operate like scientists when making decisions?



A Scientific Approach to Decision Making in Entrepreneurship and Innovation

A decision-making approach composed of four key steps



Non - Scientific decision-maker

 Makes decisions based on gut feeling; Does not develop a theory and/or does not conduct tests: no clear counterfactuals, higher causal ambiguity

Prior literature and the scientific method

Synergies between cognition and action-based approaches:

faster learning, superior strategies and higher performance (Chen et al. 2018; Eisenhardt and Bingham, 2017; McDonald ad Eisenhardt, 2020) and *more effective search* (Gavetti and Levinthal, 2000; Gavetti and Rivkin, 2007; Levinthal, 2017)



COGNITION-BASED APPROACH

Addressing uncertainty by reasoning through **theory and frameworks**

(Camuffo et al., 2020a; Csaszar and Laureiro-Martinez, 2018; Eisenhardt and Bingham, 2011; Felin et al., 2020a and b; Ott and Eisenhardt, 2020; Yang et al. 2020)

ACTION-BASED APPROACH

Addressing uncertainty via the systematic collection of evidence and its disciplined assessment

(Bennet and Chatterji, 2020; Bloom et al., 2012; Ghosh et al., 2020; Kohavi and Thomke, 2017; Koning, Hasan and Chatterji, 2022; Murray and Tripsas, 2004 Ott, Eisenhardt and Bingham, 2017; Ries, 2011;

Randomised Control Trial (RCT) Design

- Large research programme involving multiple RCTs (Italy, UK, India, China, Tanzania, Colombia, Netherlands, Spain)
- 261 UK firms: one-year business support/accelerator programme at Bayes Business School (21 hours of intervention over 3 months, Business Basics Scheme, £387,000)

Monoport Strategy Innovation Growth Lab by nesta



Control (128)

Cognition-based components: **Strategy frameworks and templates** (e.g., business model canvas, balance scorecard...)

Action-based components: **Evidence gathering techniques** (e.g., surveys, A/B testing, qualitative interviews...)



Treatment (133)





Results (multiple RCTs)

A scientific approach to decision making leads decision makers (DMs) to :

- terminate their projects more frequently and more quickly
- pivot few times (as opposed to not pivoting or pivoting many times)
- make more conservative assessments of their ideas
- achieve higher performance

Camuffo, Gambardella, Messinese, Novelli, Paolucci, Spina, 2022. A Scientific Approach to Innovation Management: Theory and Evidence from Four Field Experiments. CEPR Working Paper

Coali, Gambardella, Novelli, 2022. Scientific Decision Making and Project Selection, Working paper

Gagliardi and Novelli, 2022. Group Stereotypes in the Pursuit of Entrepreneurial Ideas and a Scientific Approach to Decision Making, Working paper



Results (UK RCT)

 The degree of business development* affects the benefits of a scientific approach:

* extent to which a firm has evolved from a nascent venture into a continuous and sustainable market participant, Churchill and Lewis, 1983; Davidsson, 2004; Reynolds, 2017)

- All firms exposed to the scientific approach grow in size
- Firms exposed to the scientific approach that are more-developed: grow in revenue



- Why?
 - Differences in the problems faced (market validation vs scale up) and extent to which core elements have already been defined (Churchill and Lewis, 1983; Siggelkow, 2002)



Stories of collaboration: Lessons learnt

RCT embedded in a business support/accelerator programme:

Keeping high research standards: Careful protocol design, highly codified procedures and thorough training for all involved



Delivering impact and value to **entrepreneurs**: Create valuable opportunities, ensure clarity of information, maintaining a constant dialogue

Department for Business, Energy & Industrial Strategy





Running an RCT with SMEs: Secrets of success





In the last few years, with my colleagues Alfonso Gambardella and Arnaldo Camuffo at Bocconi University (and colleagues from other institutions around the world), we have been running a series of randomised controlled trials (RCTs) to understand the impact on entrepreneurial performance of teaching entrepreneurs to operate like scientists when making decisions.



https://www.innovationgrowthlab.org/blog/running-rct-smes-secrets-success

Thanks!

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