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Measuring the sustainable impact of start-ups: Sustainable Return on Investments (SROI)

Entrepreneurship has the potential to fuel a sustainable turnaround in our economic system towards economic, social and environmental sustainability (Hockerts & Wüstenhagen, 2010; Kratzer, 2020 a,b; Kratzer et al., 2021; York & Venkataraman, 2010). However, investors, researchers, public authorities and founders themselves lack understanding ‘if’, ‘how’ and ‘how much’ positive (and negative) impact a startup will create (Bengo et al., 2015; Schaltegger et al., 2016).

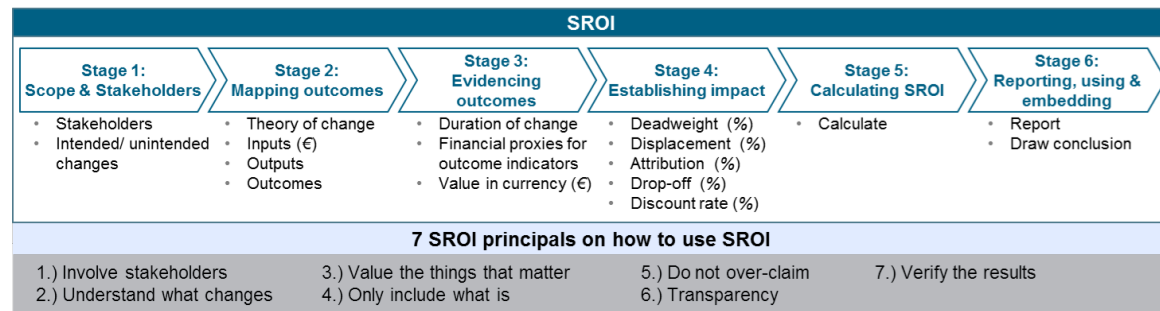
Academics and practitioners have developed and discussed various approaches for impact measurement, but no recommended standard emerged. The numerous approaches can be clustered into three categories (Bengo et al., 2015): 1. Scorecards in which startups gather KPIs to track their performance (e.g. McLoughlin et al., 2009), 2. process-based approaches that collect data structured along an input-output- outcome-impact logic (e.g. Hornsby, 2012), 3. synthetic indicators that allow comparison of impacts between different organizations (e.g. Grabenwarter & Liechtenstein, 2011).

Specifically, with regard to startups, four problems of measurement have been highlighted: 1. the dynamic environment of startups; 2. financial constraints; 3. limited human capital; and 4. poor data management systems. These problems match very well Sarasvathy’s description of entrepreneurial conditions in her theory of effectuation (Sarasvathy, 2001) and lead to five requirements for impact measurements of start-ups; (1) measure at the impact level, (2) cover all three dimensions of sustainability, (3) provide forecasts, (4) allow for benchmarking and (5) create low effort for startups.

These conditions can only be met by applying “Sustainable Return on Investment” measures modified and adjusted for start-ups also in early stages. In order to assure good quality throughout this process seven principles have been defined: (1) involve stakeholder, (2) understand what changes, (3) value the things that matter, (4) only include what is material, (5) do not over-claim, (6) be transparent and (7) verify the results. The suggested process of going into six stages of SROI is highlighted in Figure 1.

The end result of such a SROI analysis is a comprehensive view on social, environmental and economic outcomes and how they are valued by stakeholders (Hall et al., 2015; Moody et al., 2015). In addition, SROI fulfils the requirements of impact measurement of start-ups; (a) the measure of sustainability is on the impact level (Hall et al., 2015), (b) the measure captures all three dimensions of sustainability ((Hall et al., 2015), (c) the measure serves as forecasting method ((Nicholls & Cupitt, 2012), (d) the measure includes an internal and external benchmarking (Nicholls & Cupitt, 2012) and finally (e) the measurement effort is manageable (Yates & Marra, 2016).

FIGURE 1
The six stages of SROI (adjusted from Nicholls & Cupitt, 2012)



Based on this concept a measurement instrument has been developed over the past years at TU Berlin in cooperation with many partners. The longitudinal measurement captures the sustainable footprint of start-ups along the dimension social, ecological, economic impact and concrete SDG ambitions, sustainable leadership/management approaches, sustainable business model, sustainable stakeholder involvement, sustainable KPIs, start-up and team competences, sustainable revenue streams and finance, circular approaches, fair working conditions and psychological sustainability. The measures are self-evaluations and external evaluations from business coaches. The instrument will be applied three times during an incubation period of one year in order to evaluate the state-of-the-art sustainable footprint and all developments during incubation towards higher degrees of sustainability.

The first results are promising. Based on extensive qualitative research (Horne, 2019) in cooperation with MIT Boston, Borderstep Institute and others a pre-version of this tool has been registered as DIN SPEC 90051 (2021). This pre-version has been extended and refined with aspects as circular approaches, fair work and psychological sustainability. A pre-test among the partners of the Berlin University Alliance (BUA) involving 8 start-ups in incubation has been executed. The first results show promising and valid results that can be expressed in quantitative and metric terms. The method is based on strict triangulation of measured data, respondents and analytical methods. All start-up teams report on each aspect as self-assessment, the start-up coaches report on themes covering their expertise to evaluate the start-ups they coach and thirdly experienced academic researchers complete the measurement tool on each aspect for each start-up based on all documentation available (i.e. business plan). Consequently, the highest possible degree of objectivity and unbiasedness of results can be expected. The measurement is done three times in the beginning, middle and end of the commonly 1 to 1 1/2 year long incubation period. This longitudinal measurement enables to report next to state-of-the-art results, trends and developments and also statistically solid outcomes.

The measurement tool for early-stage startups has been rolled out after intensive testing and validation. The tool labeled “early-stage Sustainable Return on Investment (esSROI)” is currently applied at TU Berlin and beyond. It represents the world’s only tool that can be applied in the early stages of venture development (conceptualization and pre-seed) and offers unique applications in the ENHANCE consortia. The vision is to apply esSROI to all incubated startups within the ENHANCE consortia and to further validate the tool with longitudinal data.

In addition, the unification of the three entrepreneurship centers in Berlin opens further opportunities for the esSROI rollout. Technische Universität Berlin (CfE), Freie Universität Berlin (ProFund), and Humboldt University (Humboldt Innovation) form “Science & Startups” center, which allows the application of the tool at the interface between the European Consortia ENHANCE, Una Europa, and Circle U from 2023 on.

Pre-versions and final versions of the tool have been and will be appearing at academic publications:

- K. Cagarman, K. Fajga, J. Kratzer (2023) `Capturing the Sustainable Impact of Early-stage Business Models` Proceedings of NBM Conference Maastrich.
- Kratzer, Fajga, Cagarman (2023) Highlights of Sustainability, submitted Editorial for Special Issue „Capturing the Sustainable Impact of Early-Stage Business Models”
- DIN SPEC 90051-1 consortium (2021): Sustainability assessment of start-ups – The application tool of the DIN SPEC 90051-1 Specification. A manual for investors and capital providers, start-ups, start-up supporters and assessment institutions.
- J., Horne, M. Recker, I. Michelfelder, J. Kratzer, J. Jay (2020) `Exploring entrepreneurship related to the sustainable development goals-mapping new venture activities with semi-automated content analysis` Journal of Cleaner Production, 242, p. 118052.
- J. Kratzer (2020) `Starting up in the Age of Sustainability` Current Opinion in Green and Sustainable Chemistry, 21, pp. 89-92.

Next to the research efforts above, the development and application of esSROI require further research investigation that is started and/or planned.

- A) The tool will be applied, tested, and validated (maybe modified) in the context of startups in the global south. Projects in Egypt, Pakistan, and Tanzania have been started.
- B) The number of business plans in the archives of ENHANCE partners from early-stage startup applications might total more than 100000 (in Berlin alone, we find more than 20000). After training on this big data pool, an AI-based instrument will be developed to complement esSROI. The efforts to do so have been started and will be extended to the entire ENHANCE network.
- C) As mentioned, in order to statistically validate the reliability, validity, and objectivity of esSROI, longitudinal research efforts at all ENHANCE locations are required to be carried out.

The joint research efforts and plans will result in additional scientific output as publications and registered specifications. The tool esSROI will always be open source and can readily be applied at other EU consortia, KICs, and other initiatives.

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