

# IARIW-ESCoE Conference

## “Measuring Intangible Assets and Their Contribution to Growth”

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### Conceptualizing and Measuring Intangible Capital Using Existing EUROSTAT Survey Data Sources

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Corrado et al. (2006) proposed a now widely accepted definition of intangible capital which comprises: (1) computerized information, (2) innovative property and (3) economic competencies. While the definition of the intangible capital is now accepted, the measurement of intangible capital represents still a significant challenge to statisticians and economists at large. Generally, registry or survey sources can be used. Several projects besides Corrado (2006), such as INTAN, COINVEST, INNODRIVE; SPINTAN have proposed new measures to evaluate the size and contribution of intangible capital using existing national accounts data or develop microdata registry-based methodologies, which led to a number of empirical studies, focusing on the size of intangible investments, cross-country differences and linkages to productivity and other performance indicators ( Corrado et al., 2016, 2019; Corrado et al., 2009a, 2009b, 2016; Ilmakunnas & Piekkola, 2014; Piekkola, 2011; F. Roth, 2010; F. Roth & Thum, 2013; Felix Roth, 2020; van Ark et al., 2009). Initially, the studies focused on the private sector, while later on methodological approaches have been suggested also to capture the value of intangibles in the public sector as well ( Corrado et al., 2016).

Besides the existing sectoral and micro-level registry data survey approach is another option to measure intangible capital. The purpose of this paper is to propose using the existing survey data, collected by national statistical offices under the umbrella of Eurostat in order to propose a method for capturing intangible investment in the EU relying on existing data-set or by extending existing methodologies for data collection marginally and thereby incorporate also intangible investment component. Several important contributions have been made so far relying on one-off survey data collection. Among them for example NESTA & ONS (2009; 2010): Investment in Intangible Assets Survey (UK), Eurobarometer survey on “Investing in Intangibles: Economic Assets and Innovation Drivers for Growth”, the ISFOL & ISTAT “Rilevazione statistica sugli investimenti intangibili (in English: Statistical survey of intangible investment)” (Italy), EIB »European Investment Survey« as well as some regionally focused approaches, e.g. Prašnikar et al. (2010-2015) survey of intangible capital in the private and public sector.

While such one-off surveys are extremely valuable both from the perspective of methodological development as well as understanding the nature of intangible investment, the cost of running a high-enough quality survey in several countries or at EU level is very high and thus disables systematic data collection.

The purpose of this paper is to investigate the possibility to conduct a pan-European analysis of intangible investment in the corporate sector (public sector has several specifics) without extensive additional effort using existing survey sources at Eurostat. Relying on such data and perhaps amending the existing questionnaires/methodologies by a few questions/modifications would allow an efficient collection of data, minimizing time and cost effort of national statistics and respondents, ensuring also higher data quality. In addition, such an approach would also allow researchers to use additional information from the surveys (original databases), which often also include variables that explain motivations, expected benefits, related phenomena etc. This would allow a more detailed study and understanding of the intangible capital accumulation. Such an approach, relying on existing established survey data also follows the requirements of the methodological literature. Following Canibano et al. (1999) several issues must be addressed: (1) all core components (of intangibles) of intangible capital must be identified, (2) robustness of the definitions and the measurements must be addressed, (3) the origin of the data must be checked. Further, relying on existing Eurostat data ensures high quality and harmonisation and good cross-country coverage.

The paper proposes a methodology, that follows the established Corrado et al. (2006) definition of intangibles, and captures intangibles using several different survey sources, available in all or the majority of EU economies. These are survey on (1) ICT usage and e-commerce in enterprises to capture computerised information, (2) Community Innovation Survey, Investment in fixed assets in enterprises to capture innovative property and (3) Community Innovation Survey (harmonized questionnaire) and Continuous Vocational Training Survey (harmonized questionnaire) to capture economic competencies.

The paper discussed in detail the variables construction and time as well as country coverage, but primarily applies the methodology to the case of Slovenia. By relying on firm-level survey data from the aforementioned surveys as well as detailed data from the Investment in fixed assets in enterprises (which is not available in all countries) from 1996 on, we construct measures of intangible capital and examine the intangible investment patterns in Slovenia as evident from these sources. To evaluate the approach, the results are contrasted against the established approaches from the already mentioned analyses.

The paper makes several contributions to the field, but primarily (1) Proposes an approach to capture the value of intangible assets using existing surveys and data collected at the European, which already offer a significant amount of relevant data. Alternatively, with relatively minor adaptation of several questionnaires significantly more could be done. (2) The periodicity would remain the major obstacle (as not all surveys are conducted annually) as well as the voluntary basis for implementation of some surveys and a non-harmonized approach or methodological differences between countries in the preparation of some relevant indicators, however this would still be a major improvement compared to one-off surveys. (3) The proposed methodology is implemented and evaluated in Slovenia, which offers abundant and high-quality micro-data.

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