Measuring intangibles in firms: past experiences and future prospects of voluntary surveys

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# Introduction

Surveying business enterprises about their investments in intangible assets is quite a new field in economic statistics. Even in economics, the issue is relatively new. Intangible Assets (IA), broadly defined as non-physical sources of expected future economic benefits, have emerged in the literature as part of the “growth accounting theory” in order to address controversial issues like the “productivity puzzle” [1]. The paper will review three pilot experiences in IA surveying by highlighting the main methodological differences among them and will explore – by analysing fresh evidence collected in a pilot of the Second Italian IA survey, planned early in 2021 – the effectiveness of methodological innovations to improve the outcome of IA surveys while keeping them voluntary for respondents.

## Past experiences in collecting IA data

The ONS/NESTA survey

In order to support the relevant research efforts aimed at identifying the role of IAs in the economy, an increasing demand for statistical evidence has emerged over the last years. In collecting statistical evidence on the role of "intangible assets" in firms, a key experience was that of British NESTA that proposed in 2009 at the Office for National Statistics (ONS) the launching of a mail survey on IA investments [2]. It was truly experimental and based on six key areas of investment: vocational training, software development, R&D, reputation and branding, design and organization. The sample included approximately 2,000 firms with at least 10 employees (the response rate was 42 per cent). The results were regarded as innovative (albeit based on a final sample of only 838 firms). In 2011, the survey was repeated, achieving a realised sample of 1,180 firms. Although some inconsistencies with the first survey, such a replication confirmed that the methodology was sound and worth to be tested in other countries.

The Eurobarometer 2013

Indeed, in 2012 Directorate General for Enterprises of the European Commission (EC) launched a Eurobarometer survey on the intangible investments of international firms largely based on the ONS model [3], [4]. The survey, mostly qualitative, was designed by the EC Joint Research Centre to cover a sample of EU firms with a secondary sample of firms from non-EU countries. The telephone survey, with interviews of 10-15 minutes, targeted firms of all sizes operating in both manufacturing and services. The realised sample included 11,317 firms from 36 countries (response rates between 6 and 69 per cent). In evaluating the survey, the quality of registers used by the Eurobarometer was an issue. Rather than using official statistical registers, the Eurobarometer sample was extracted from a range of private registers with the risk of overestimating the role of large firms operating in highly competitive markets and with higher propensity to invest on IA.

The Italian INAPP-ISTAT survey

Although several experiences have been developed at international level over the last decade [5], two Italian public institutions (the Italian Statistical Institute, ISTAT and the Institute for Public Policy Analysis, INAPP) have succeeded in carrying out for the first time an official business survey on intangible assets in a large EU country [6]. In 2013, by scaling up a previous (2009) pilot survey on a sample of 200 firms, INAPP and ISTAT launched the first Italian survey on intangible investments in firms. The survey, with reference to the year 2012, covered a sample of 28,321 manufacturing and services firms with 10 employees or more. The actual sample included 10,631 observations (response rate 37.5 per cent) and allowed for an in-depth analysis of the IA phenomenon both by sector and size class. The INAPP survey largely replicated the ONS survey methodology, albeit with adaptations to the Italian context.

# Methods

At a stage where several surveys, across a number of countries, have tested the methodology for the implementation of IA surveys originally developed by the UK ONS, an issue can be raised about the effectiveness of such methodology and the need for improvements either based on the experiences available so far, or designed as potentially new approaches.

## Comparing the main experiences in surveying IA in firms

Available information (Table 1) indicates the trade-off between the quality of the results and the burden on respondents (strongly associated with the response rate). When asking for a few qualitative information to a RDD sample, the burden is minimised but, at the same time, it is awkward to collect any quantitative data, even just as an estimate (and to draw a reliable estimate for the whole population, as well).

Table 1. Comparing some methodological features of IA surveys

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Survey** | **Territory** | **Sample size** | **Sampling method** | **Realised sample** | **Response rate** |
| ONS 2009 | UK | 2,000 | Register based | 838 | 42% |
| Eurobarometer 2013 | 36 countries (mostly EU) |  | Random digit dial (RDD) | 11,317 | 6 to 69% |
| INAPP/ISTAT 2013 | Italy | 28,320 | Register based | 10,631 | 37.5% |

An issue is whether IA surveys should be voluntary or mandatory. In the table above, three voluntary surveys are compared to highlight three distinct approaches. This leaves room to improve the quality of future IA surveys without adopting a mandatory attitude.

## Options for improving response rates and results’ quality in IA surveys

INAPP and ISTAT, while planning for the Second Italian IA survey, to be launched in 2021, are going to test some changes in the methodology and contents of the survey in order to reduce the burden on respondents while keeping the survey voluntary. Pilot results will be available early in 2021 and will provide an answer to the reliability of a number of measures to be adopted in the new survey with the potential to become standard in this field. At this point, only a short description of them can be made available (Table 2).

Table 2. Methodological and contents changes to be tested for adoption in the II Italian IA survey 2021

|  |  |
| --- | --- |
| **Proposed changes** | **Description** |
| Higher size threshold | Unlike the standard “10 employees or more”, the IA survey could focus only on medium and large firms (i.e. 20+ or 50+). |
| Integration of survey data and Cost (or Tax) Statement data | The availability of official financial reports from surveyed firms could allow for reducing the number of survey questions or speeding up the checking process. |
| Mixed CAWI-CATI data collection mode | Advantages of both methods could be jointly exploited by planning for repeated call attempts of non-respondents based on an estimated propensity to reply of each single sampled unit. |
| Prioritising the sample selection | Firms responding to the first wave could be included in a longitudinal panel. Listed firms could be addressed by a census. |
| Cognitive testing and expert advice | Well-established techniques of cognitive testing will be used to check for meaningfulness and consistency of the questionnaire. The process will be assisted by a team of expert advisors. |
| Focusing on practices to assess the IA stock | In addition, or as an alternative, to ask for IA investments (flows), an IA survey could be made easier by adopting methods used by consultants and advisors to assess the firms’ value [7]. |

## Size threshold

By assessing the results of the Italian 2013 survey, it has been questioned whether the use of the size threshold of 10 employees (as a standard in official business statistics) could make sense for a voluntary and highly specialised survey as the IA survey. Two considerations are driving the survey managers to opt for a higher threshold in 2021. First, the problems in communicating the key concepts of the survey to small firms (whereas most of them do not have an IA strategy). Second, the need to increase the rate of response that is systematically lower for small businesses (see previous survey’s results in Table 3).

Table 3. Sample and response rates of the I Italian IA survey 2013 by size class

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Size classes (no. of employees | Initial sample (no. enterprises) | % by size class | Realised sample (no. enterprises) | % by size class | Response rates (%) |
| 10-49 | 11,487 | 40.6 | 3,717 | 35.0 | 32.4 |
| 50-99 | 9,277 | 32.8 | 3,697 | 34.7 | 39.9 |
| 100-250 | 5,017 | 17.7 | 2,016 | 19.0 | 40.2 |
| 250-499 | 1,480 | 5.2 | 672 | 6.3 | 45.4 |
| 500+ | 1,060 | 3.7 | 529 | 5.0 | 49.9 |
| TOTAL | 28,321 | 100 | 10,631 | 100 | 37.5 |

## Data integration

Data integration as a standard process in most statistical institutions can be effectively used in IA surveys to compensate for the remarkable unit and item non-response rates, mostly in voluntary surveys. Available figures of firms’ sales, profits or investments can be collected to complement the information provided via surveys with the advantage to ask firms directly (almost) only for qualitative information. This could be a key move to reduce the burden on firms and to increase the response rate while improving the quality of results.

## Data collection

The mixed CAWI-CATI data collection method of the Italian 2013 IA survey will be replicated in the 2021 survey with some improvements. A profiling of sampled firms will allow for a selection of firms with a higher response propensity and their prioritisation in the calling-up exercise. The online questionnaire will be improved by streamlining the flow of questions and allowing for skipping the questions not of interest for the respondent.

## Sample selection

Two needs have to be considered. Aiming at a full representativeness of the firms’ population, on the one hand. To focus on specific sub-populations of interest, on the other hand. Another constraint is the need to keep the size of the initial sample within a range of 30-35K firms. By considering the large number of SMEs in Italy, even a slight increase in the threshold size could allow for accommodating the mentioned needs without increasing too much the sample size. Of course, the extraction plan for each specific sub-sample (longitudinal panel, listed companies, etc.) will be designed in a detailed way.

## New questionnaire and cognitive testing

The new questionnaire of the Italian IA survey 2021 will turn to be mostly qualitative, which is atypical for official business surveys that mainly collect financial data. This could simplify the data provision by respondents (thus, to increase the response rate) but will raise issues about the quality of answers and a meaningful interpretation of them. This implies the need for a careful steering of the process by thoroughly testing the draft questionnaire with a selected number of firms. Moreover, a team of consultants will undertake a review of the testing results with the aim of making the questionnaire focused on the key points addressed by the survey while allowing for a smooth compilation.

# Conclusions

The process of designing the Italian 2021 IA survey could mark a significant improvement in the management of business IA surveys that have been, so far, focusing on the collection of quantitative data in a context where survey managers had to rely on the positive attitude by respondents to provide statistical institutions with detailed data on a voluntary basis. The current pressure on respondents because of the combination of the Covid-19 pandemic and the economic downturn calls for a creative approach and the combined use of advanced methodological techniques to reduce the statistical burden on respondents.

# References

1. C. Corrado, C. Hulten, D. Sichel, *Measuring Capital and Technology: an expanded framework*, 2002, *The University of Chicago Press*
2. G. Awano, M. Franklin, J. Haskel, and Z. Kastrinaki, “Measuring investment in intangible assets in the UK: results from a new survey”, 2010, *Economic & Labour Market Review*, vol 4(7), July.
3. European Commission. *Investing in intangibles: economic assets and innovation drivers for growth*. 2013, Flash Eurobarometer 369.
4. S. Montresor, G. Perani, A. Vezzani. *How do firms perceive their intangibles? New statistical evidence from the Innobarometer 2013*. 2014, Technical report, Institute of Prospective Technological Studies (IPTS), European Commission.
5. T Redek, M Bavdaž, "Measuring the Intangibles Using Survey Data”, GLOBALINTO Paper, 2019, <https://globalinto.eu/wp-content/uploads/2019/11/GLOBALINTO_D_1_3.pdf>
6. R. Angotti, *Intangible Assets Survey. I Risultati della Rilevazione Statistica sugli Investimenti Intangibili delle Imprese*, 2017, INAPP, Roma.
7. A. Fustec *et al.*, *Thésaurus-Bercy. Référentiel français de mesure de la valeur extra-financière et financière du capital immatériel des entreprises*, 2011, Ministère de l’économie, des finances et de l’industrie, Paris.