

THE CHANGING PATTERN OF SOCIAL SCIENCES AND HUMANITIES IN THE EU FRAMEWORK PROGRAMMES¹

RETHINKING SOCIETAL IMPACT – COLLABORATION WITH STAKEHOLDERS

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INTRODUCTION

The European Union EU “Research and Development Framework Programmes” (FPs) had been in operation for ten years before socio-economic research was included under the “Fourth Framework Programme” (1994-1998). It was directly related to the results of the Maastricht Treaty (Reillon, V., 2017). It was a period when the need for “soft power” arose. Joseph Nye’s (Nye, J., 1990) “soft power” approach adopted during the fifth enlargement of the EU was considered the EU’s most successful foreign policy instrument (Rehn, O., 2007, Tulmets, E., 2008). Certainly, this gave an impetus to the further deepening of the social dimension of the Framework Programme. In the successive frameworks more and more elements of the social sciences and humanities (SSH) research were added (Table 1).

By now, the FP is undoubtedly one of the largest funding instruments for the European SSH scholarships through its various instruments. Research on impact and performance of SSH in FPs have been mainly the task of expert groups set up by the European Commission (Watson, J., et al., 2010, Hetel, L., et al., 2015, Birnbaum, B. I., et al., 2017, Bade Strom, T., et al., 2018, Challis, L., et al., 2003, Cerletti, C., et al., 2001.). In research journals, the approaches have appeared relatively scarcely (Georghiou, L., et al., 2002, Must, Ü., 2010a, 2010b, Schindler-Daniels, A., 2014.). The aim of this paper is to monitor and analyse the evolution (or overlapping) of the SSH thematic pattern through the three framework programmes since 2002.

FP	Period	SSH Work Programme
FP4	1994-1998	Targeted socio-economic research.
FP5	1998-2002	Improving the socio-economic knowledge base.
FP6	2002-2006	Citizens in the knowledge-based society.
FP7	2007-2013	Socio-economic Sciences and Humanities.
H2020	2014-2020	Europe in a changing world – inclusive, innovative and reflective societies.

Table 1. EU Framework Programmes with elements of SSH research.

METHODS

We used textual analysis for conducting the survey. The set of documents to perform the analysis is based on two sources: a) FP Work Programmes 2002-2020 (Table 2).

Work Programme	Words	Lexical density
FP6 Specific Programme "Integrating and Strengthening the European Research Area". Priority 7: Citizens and Governance in a knowledge-based society. Work Programme 2002 -2003.	15,103	12,99
FP6 Specific Programme "Integrating and Strengthening the European Research Area" Priority 7: Citizens and Governance in a knowledge-based society Work Programme 2004 – 2006.	12,606	13,5174
FP 7 Cooperation Work Programme: SSH Work Programme 2007 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	20,943	10,3328
FP 7 Cooperation Work Programme: SSH Work Programme 2008 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	20,726	10,3445
FP 7 Cooperation Work Programme: SSH Work Programme 2009 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	15,014	12,9679
FP 7 Cooperation Work Programme: SSH Work Programme 2010 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	21,558	11,2302
FP 7 Cooperation Work Programme: SSH Work Programme 2011 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	22,894	11,8808
FP 7 Cooperation Work Programme: SSH Work Programme 2012 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	26,934	10,5332
FP 7 Cooperation Work Programme: SSH Work Programme 2013 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	26,821	10,6446
HORIZON 2020 Work Programme 2014 – 2015 13. Europe in a changing world – inclusive, innovative and reflective societies	52,043	7,5956
HORIZON 2020 Work Programme 2016 – 2017 13. Europe in a changing world – inclusive, innovative and reflective societies	59,111	8,1711
HORIZON 2020 Work Programme 2018 – 2020 13. Europe in a changing world – inclusive, innovative and reflective societies'	31,565	9,9034

i The text of the work programmes is still changing. As of March 2018, materials have been used for analysis.

Table 2. FP SSH Work Programmes 2002-2020 by Word Count and Lexical Density.

And b) Statistics on funded projects from the CORDIS project database (=Projects) (<https://cordis.europa.eu/>). We used title and abstract words for textual analysis (Table 3).

FP Programme	Projects	Words (abstracts, titles)	Lexical density
FP6 Specific Programme "Integrating and Strengthening the European Research Area" Priority 7: Citizens and Governance in a knowledge-based society	166	8,415	25,1693
FP 7 Cooperation. Theme 8: Socio-economic Sciences and Humanities.	255	13,532	20,2335
HORIZON 2020 Societal Challenge 6. Europe in a changing world – inclusive, innovative and reflective societies (as of March 2018)	277	14,520	22,3898

Table 3. FP SSH funded projects in FP6, FP7 and H2020.

Since the goal was to monitor substantive changes across framework programmes, we cleaned the data of punctuation marks, numeric values, articles (a, the), prepositions (on, at, in), conjunctions (and, or, but) and auxiliary verbs, such as "to be" (*am, are, is, was, were, being*), "do" (*did, does, doing*), "have" (*had, has, having*).

The final analysis and comparisons between different datasets were made on the basis of the 200 most used words².

RESULTS

LEXICAL DENSITY

Lexical density is the term most often used for describing the proportion of content words (nouns, verbs, adjectives, and often also adverbs) to the total number of words. By investigating this, we receive a notion of *Information packaging*; a text with a high proportion of content words contains more information than a text with a high proportion of function words (prepositions, interjections, pronouns, conjunctions and count words). Large majority of the spoken texts have a lexical density of fewer than 40%, while a large majority of the written texts have a lexical density of 40% or higher (Johansson, V., 2008).

As we see from Figure 1, the lexical density of work programmes of different FPs has declined over the years while in the abstracts and titles of projects it has remained roughly the same and is significantly higher than in work programmes.

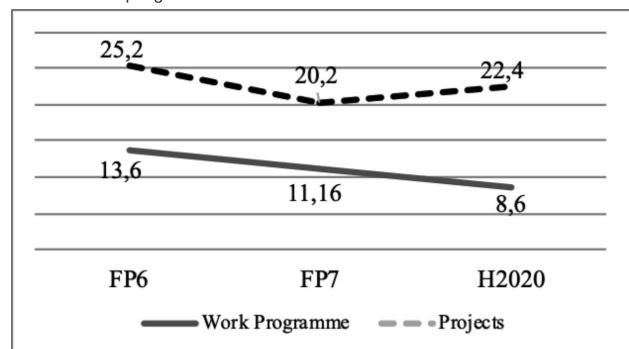


Figure 1. Lexical density of different FP work programmes and projects.

PATTERN OF WORDS

We analysed to what extent words overlap in the work programmes of the three successive framework programmes and which unique words characterise specific programmes (Figure 2).

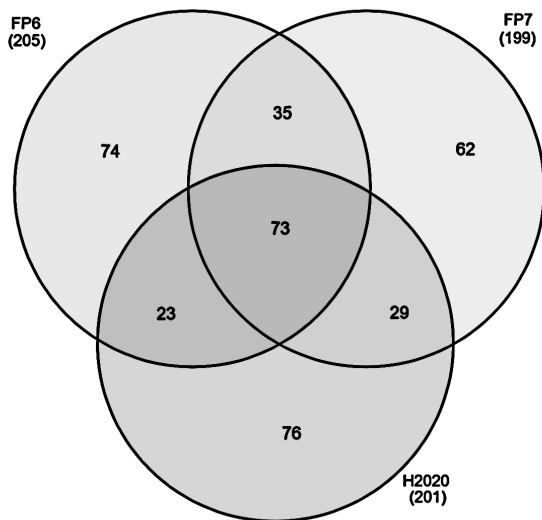


Figure 2. The overlapping of words in FP6, FP7, and Horizon 2020 work programmes.

In 20% of the cases the words overlap in all three framework programmes. These include words like *programme, participant, democracy, public, research, Europe*. However, the number of unique words is the same as overlapping words: in FP6 and in H2020 20%, in FP7 17%. Some example of unique words: in H2020 – *business, ICT*, in FP7 – *foresight, emerging, family*, in FP6 – *associated, target, embryonic*. The introduction of new words can also be followed in work programmes. For example, starting from the “7th Framework Programme”, the core words introduced *crisis, identity, digital, heritage, reflective, urban*.

In case of words from projects, the general overlapping occurs in 14% of cases (Figure 3). Partially words overlap with the same the most overlapping words in the work programmes (*programme, research, Europe*) but in majority cases the words are different (*human, education, approach, engage*). In case of projects, the proportion of unique words is much bigger than the proportion of overlapping words: in FP7 and in H2020 21%, in FP6 26%.

Some commonly used words change over time. For example, while *radio* and *television* were among the most commonly used words in the “6th Framework Programme”, in the H2020 projects these terms have not occurred and the most widely used words include *software, digital, online*.

We can also monitor the frequency of usage of words over time. For example, the term “innovation”: in the “6th Framework Programme”, it ranked the 87th by its use, seventh in the “7th Framework Programme” and second in the H2020.

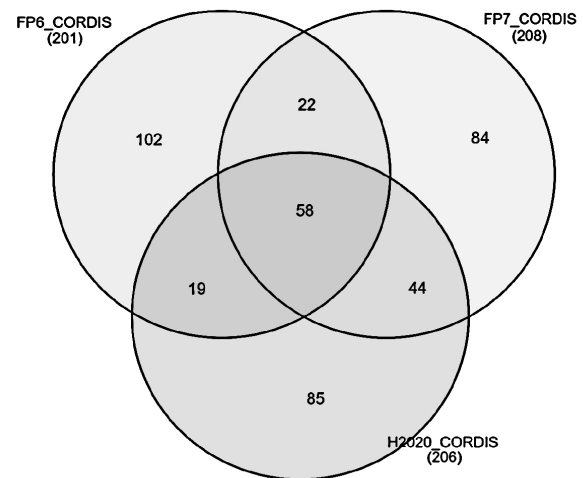


Figure 3. The overlapping of words in FP6, FP7, and Horizon 2020 projects.

When comparing two datasets, we can see that the average proportion between overlapped and unique words in work programmes is rather balanced, but in case of project words the situation is different – the majority of words are unique. At the same time, the analysis of FP project and work programmes texts with two overlaps indicates that there is continuity between successive framework programmes. For example, FP6 project words are overlapping with FP7 to an extent of 58.8% (in work programmes 57, 1%), the words of H2020 projects overlap with FP7 to an extent of 55.3% (in work programmes even 65, 6%).

The subject we were examining was how much the words of work programmes and projects overlap (Figure 4).

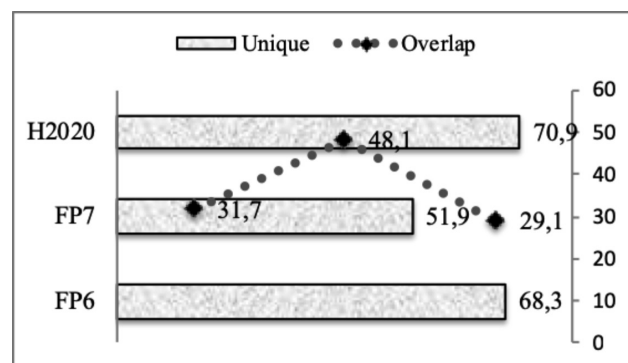


Figure 4. The overlapping of words between work programmes and projects.

As we see from Figure 4, the texts of work programmes and projects were the most in line during the 7th FP (48,1% overlapping), the picture is different in 6th FP (unique words constitute 68,3%), and in H2020 (unique words constitute 70,9%). On the basis of the existing material, it seems that in majority cases there is no overlap between work programmes and project texts (titles and abstracts). We can only assume that the results could be different if to use the full texts of the proposals.

CONCLUSIONS

Textual analysis is one way to track the changes in framework programmes over time. On the one hand, it shows that the language is a living entity that changes over time. On the other hand, the terminology shows the priorities existing in the given period.

Some results:

- a. Lexical density of work programmes of different “Framework Programmes” has declined over the years. It has to be studied in more detail whether this is due to the addition of a greater number of non-lexical words to the text or due to the change in the language use of the text writers;
- b. Overlapping words reflect the core vocabulary which does not change over time, and we can monitor the frequency of its use. Also, the introduction of new words/terms into work programmes can be monitored;
- c. The words used more often in work programmes and projects generally do not coincide. At the same time, it can be observed that there is continuity between successive framework programmes.

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