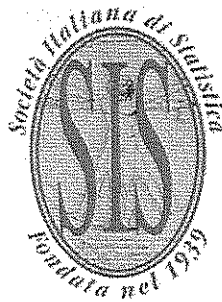


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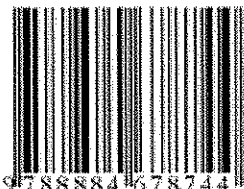
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Preface

The edition of this volume gave us the opportunity to perceive that, together with many well-known Italian statisticians belonging to the national and international community, many young researchers are emerging. They presented, at the *47th Scientific Meeting of the Italian Statistical Society*, their remarkable contributions, both from the methodological and the applicative point of views.

Although some papers may not look, in their actual form, fully mature from the scientific and communicative point of views, we decided - in agreement with the referees - to publish them since promising and full of ideas. In this respect, the contributions published in this volume provide a comprehensive overview of the current Italian scientific researches in theoretical and applied statistics.

This volume also contains several contributions presented by foreign researchers, highlighting the fact that the Italian Statistical Society has an attractive role in the international scientific community.

Finally, we would like to emphasize that, even from the abstracts of the contributions, the wideness of the collaborations between the statisticians and the experts from other fields emerges. This denotes that, also in Italy, statistical methods are spreading in the different fields of the scientific researches.

Stefano Cabras
Tonio Di Battista
Walter Racugno

Cagliari, June 11, 2014

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Statistical comparison of European judicial systems according to ICT

Confronto statistico dei sistemi giudiziari europei nell'ICT

Carlo Cusatelli, Massimiliano Giacalone

Abstract The need for strong regulatory and valid instruments is clear in contemporary society to resolve disputes in a timely manner and penalize wrongdoing. The judicial function must be measured against this complexity, in order to ensure the safety of citizens, social cohesion, and economic competitiveness at an international level. The Information and Communication Technology (ICT), that facilitates knowledge and exchange of data and information through an analytical approach to problem solving, is of paramount help in tackling this complexity.

Abstract *Nella società odierna si manifesta la necessità di una stabile pianificazione e di efficaci dispositivi che permettano di sciogliere con rapidità le controversie e sanzionare le condotte illegittime. L'attività giudiziaria deve fronteggiare questa complessità, per assicurare la serenità dei cittadini, la coesione sociale, la competitività economica anche internazionale. A tal fine è d'indispensabile aiuto la Information and Communication Technology (ICT) che favorisce l'acquisizione e il traffico della conoscenza secondo un sistema rigoroso di soluzione delle difficoltà.*

Key words: Information and Communication Technology (ICT), Judiciary systems

1 Introduction

ICT has been one of the main levers of change for the judicial authorities. The information systems have entered the offices promising greater operational efficiency, increased transparency, the online exchange of data and documents between offices and litigants. The comparative analysis of experiences in different

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countries has allowed us to identify both approaches and traps into which some policy makers have fallen. Understanding the processes of innovation and their peculiarities in highly formalized systems, such as the courts, is therefore a necessary step to be able to support and guide.

Introducing ICT in the administration of justice offers possible solutions, improving the administration of justice and helping to streamline procedures and reduce costs. The new concept of electronic justice (e-justice) represents an initial response to the threefold need to improve access to justice, cooperation between legal authorities and the effectiveness of justice. Massive investments in ICT are taking place in all judicial systems to improve the quality of administration of justice and, therefore, better protect the rights and safety of citizens. The ICT projects in the justice sector are quite different and range from the creation of websites for the courts, electronic filing, distance learning, the alternative dispute resolution through web-based technologies. These are projects that are usually accompanied or take place within a broader framework of reforms that affect the entire judicial system, and that often contribute to opening up new possibilities for institutional change, judicial cooperation and even integration between judicial authorities of different countries. It's important to immediately report how the introduction of ICT in judicial systems must necessarily be contextualized within the proper legal and institutional framework that characterizes each country.

2 Characteristics of ICT in European judicial systems

The European Commission, with the Commission Communication COM (2013) 160 final, has developed an evaluation framework of EU justice as a tool to promote effective justice and growth, to ensure a more effective European justice system by identifying reliable and comparable information on the functioning of the judicial systems of the Member States; among the indicators of the Scoreboard, the length of proceedings and the timing of treatment, the turnover rate (defined as the ratio of the completed and introduced judgments) and the number of pending cases, elements have been defined which are absolutely relevant to be considered and optimized in order to increase the quality of the judicial system. Indicators show that the availability of ICT systems for recording and case management and for communication and exchange of information between courts and their context is a determining factor for the effectiveness of justice, for example, electronic forms available on the internet, websites of the courts, follow-ups of suits online, electronic records, electronic processing of small claims and the recovery of uncontested claims, electronic submission of applications and videoconferencing.

The strong drive for innovation of the judicial system is based on three key moments: the introduction of technology, which is able to streamline all the procedures for which discretion of the court is required; a legal system that is capable of facilitating the availability of regulatory instruments which are flexible and capable of adapting to continuous stress; the internal structure of an organization is able to exploit its possibilities. This has been pursued with approaches related to

the idea of cultivation, a method of development of complex systems based on local planning interventions aimed at conversion, adaptation and connection of systems, components and functionality already available, in part, for the purpose of assembling configuration systems that can then be put to the next test. This has allowed, for example, to achieve, in a relatively simple way, applications that would facilitate access to information on the procedures provided by the courts to involved parties or to exchange data necessary for the definition of cases.

3 European e-Justice Portal

Electronic justice initiative at Community level is carried out by the Council of the Union (Justice and Home Affairs) and the European Commission (Justice, Freedom and Security General Directorate) under which a specific Action Plan is defined; such plan includes, among other things, the creation of the "European e-Justice Portal" which supplements the initiatives of computerization of individual Member States and access point privileged access to information, applications and case law on the part of citizens, businesses, professionals and judicial authorities: e-justice can be defined as the use of ICT to improve citizens' access to justice and the effectiveness of the judicial action seen as any kind of activity to resolve a dispute or punishment of criminal behavior. The Commission has always encouraged the use of videoconferencing and the electronic transmission of documents between judicial authorities and actively participated in the project of interconnection of criminal records. The potential scope of e-justice is very broad and likely to evolve in the light of progress within the European Judicial Area and technological developments.

There is, however, another e-justice that, applying the technologies of automatic extraction of information to the court orders, can not only enrich the decision-making process of the actors of the proceedings but may also provide new and interesting perspectives for the management of the courts. Besides the specific scientific techniques related to information extraction, data and text mining, judicial decisions that are so elaborate allow performing synchronic, diachronic and comparative analysis on the functioning of the judicial administration. It is an innovative and original result that clears the way for justice monitoring, without which it is almost unthinkable to identify concrete and effective solutions that improve performances. Online, it is possible to find information on legal systems, legislation and case law; electronic communication systems are developing between the parties and the courts, and in some cases entirely electronic procedures are available. The use of electronic means to record hearings is increasing as well. At a European level, several professional organizations are developing particularly interesting projects for the exchange of information or interconnection, for example, the website of the Association of the Councils of State, the common portal on the jurisprudence of the Supreme Courts or the European register of wills. Several projects in the field of e-justice are currently being developed. In addition to the examples mentioned above, it is appropriate to recall all the projects relating to legal documentation undertaken by the European Union or from institutional and private

operators.

The Commission supports these projects, but also considers as important factors increasing readability, accessibility and efficiency of EU action in the judiciary field, and to emphasize projects that will truly add value to the European judicial area. Indeed, while the law in the legal field has developed considerably, its impact often remains limited due to the difficulties of transposition (especially in criminal matters) and the operators who often lack in knowledge.

4 Indicators of ICT usage in European Courts

The European e-justice wants to target the use and development of ICT at the service of the judicial systems of the Member States, in particular in cross-border situations, so as to enable citizens, businesses and legal practitioners with a greater access to justice and judicial information and to facilitate cooperation between judicial authorities of the Member States. It aims at improving the effectiveness of justice itself, while respecting the independence and diversity of the legal systems of the Member States, as well as of fundamental rights. It is appropriate to ensure that users of the European e-justice system, including citizens, can take advantage quickly of concrete electronic tools.

In Table 1, three ICT partial composite unweighted indicators

$${}_{ITC}P_i = \sum_{j=1}^{w_i} r_j / w_i \quad (i = 1, 2, 3; w_1=4, w_2=3, w_3=8)$$

have been calculated by averaging the usage rates r_j of the w_i computer facilities within each of the three technologic tools supplied to the Courts, on the basis of data collected through multiple questions no. 62 (direct assistance of judges and court clerks), no. 63 (registration and management of cases) and no. 64 (electronic communication and information exchange) of the most recent available CEPEJ Evaluation Scheme (2010-20-12 cycle).

The overall synthetic indicator, weighted by respective number of facilities,

$${}_{ITC}S = \sum_{i=1}^3 w_i P_i / 15$$

summarizes the previous partial ones: it shows almost a three-quarter judicial ICT completeness in Europe; Hungary, Romania, Germany and Italy are not far from that average level, but Greece (the last, with 13.3%), Belgium and Cyprus lie below fifty percent of such computerization, while Austria, Estonia, Malta and Portugal have already completed it.

The results obtained, the limitations encountered and the targets set for the future require a comprehensive European strategy on e-justice to bring the commitment and involvement at a strategic level. The new European e-justice 2014-2018 strategy intends to shift from work already undertaken so that there is a greater use of electronic applications, electronic transmission of documents, video conferencing and the interconnection of registers and administrative records, in order to further reduce the costs of litigation out of court by establishing a mechanism to ensure that future legislation is designed to be used by means of online applications.

Table 1: Percentage indicators estimated on the basis of 2010 data collected through 4th CEPEJ Report

Use of technologies in Courts (computer facilities)	Austria	Belgium	Bulgaria	Cyprus	Czech Rep.	Denmark	Estonia	Finland	France	Germany
Direct assistance of judges and court clerks (word processing, electronic database of jurisprudence, email, Internet connection)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Registration and management of cases (case tracking system, court management information system, financial information system)	100.0	60.0	100.0	43.3	66.7	100.0	100.0	100.0	100.0	91.7
Electronic communication and information exchange between the courts and their environment (electronic web forms, court websites, possibility of following up cases online, accessibility of electronic registers, applications for electronic processing of small claims, electronic processing of undisputed debt recovery, electronic submission of claims, video conferencing)	100.0	14.4	38.1	25.0	91.3	12.5	100.0	87.5	41.3	54.4
<i>Overall ICT (average of the previous three composite indicators weighted by number of computer facilities)</i>	<i>100.0</i>	<i>46.3</i>	<i>67.0</i>	<i>48.7</i>	<i>88.7</i>	<i>53.3</i>	<i>100.0</i>	<i>93.3</i>	<i>68.7</i>	<i>74.0</i>
Use of technologies in Courts (computer facilities)	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxembourg	Malta	Netherlands	Poland
Direct assistance of judges and court clerks (word processing, electronic database of jurisprudence, email, Internet connection)	30.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Registration and management of cases (case tracking system, court management information system, financial information system)	21.7	100.0	68.3	83.3	68.3	91.7	100.0	100.0	100.0	91.7
Electronic communication and information exchange between the courts and their environment (electronic web forms, court websites, possibility of following up cases online, accessibility of electronic registers, applications for electronic processing of small claims, electronic processing of undisputed debt recovery, electronic submission of claims, video conferencing)	1.9	44.4	46.9	63.8	87.5	78.8	37.5	100.0	62.5	40.6
<i>Overall ICT (average of the previous three composite indicators weighted by number of computer facilities)</i>	<i>13.3</i>	<i>70.3</i>	<i>65.3</i>	<i>77.3</i>	<i>87.0</i>	<i>87.0</i>	<i>66.7</i>	<i>100.0</i>	<i>80.0</i>	<i>66.7</i>
Use of technologies in Courts (computer facilities)	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	England and Wales	North Ireland	Scotland	Average
Direct assistance of judges and court clerks (word processing, electronic database of jurisprudence, email, Internet connection)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	97.6
Registration and management of cases (case tracking system, court management information system, financial information system)	100.0	66.7	100.0	91.7	100.0	100.0	100.0	100.0	100.0	87.8
Electronic communication and information exchange between the courts and their environment (electronic web forms, court websites, possibility of following up cases online, accessibility of electronic registers, applications for electronic processing of small claims, electronic processing of undisputed debt recovery, electronic submission of claims, video conferencing)	100.0	59.4	42.5	78.8	41.9	34.4	59.4	41.3	62.5	56.8
<i>Overall ICT (average of the previous three composite indicators weighted by number of computer facilities)</i>	<i>100.0</i>	<i>71.7</i>	<i>69.3</i>	<i>87.0</i>	<i>69.0</i>	<i>65.0</i>	<i>78.3</i>	<i>68.7</i>	<i>80.0</i>	<i>73.9</i>

Several Member States have already developed and participated in a series of pilot projects in the field of e-justice and an infrastructure for European e-justice is

gradually developing: since 2011, a number of Ministries of Justice and central authorities of several European countries have embarked on such a large scale project (<http://www.e-codex.eu>) in which they have concretely experienced some applications in the field of cross-border proceedings, starting with the European payment order, established by specific Community regulations.

5 Final remarks

The ICT indicators showed that when the process of computerization will be completed, which seems to be quite realistic even in the short term, the next step should include a coordination to ensure, while still respecting the local autonomy and cognitive needs peculiar to different contexts, a common information base homogeneous and shared on a European level.

The problems of data reliability, the provision of appropriate classifications in survey forms and, more generally, the quality of data are attributable, directly or indirectly, to the degree of computerization in statistical-judicial production. In fact, in the presence of a fully computerized detection system (also at the level of case management records) the possibility of transcription errors, manipulation and interpretation of the information required will drastically reduce (due to the non-perfect correspondence between the classification adopted in models of detection and what is recovered in the official records), as well as the time-lag in some cases considerable, between data recording and the actual time/instant of reference; on the other hand, the detailing of the information collected could increase a result of a greater and more appropriate articulation of the detection patterns (certainly not feasible, beyond a given limit, in cases of manual detection) and the activation of an automatic check on the consistency of the data would be possible, not only ex-post, but during the same stage in which information is entered.

The last aspect concerning the quality of production processes regards their duration, which is also highly dependent on the degree of computerization of various systems. In fact, with the completion of the automation, the time of data acquisition will be strongly contracted and the frequency of detections will also increase.

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