STUDY REGARDING THE USE OF SPREADSHEET APPLICATIONS IN THE ECONOMIC FIELD

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Among the specialized analysis tools, spreadsheet applications are the most accessible. In addition, techniques and tools for organizing, processing and presentation of basic data, such as strengthening multiple lists, filtering, running sum, pivot tables they offer, largely satisfy the needs of organization and data analysis activities in the field of economics. For this reason we conducted a study in which we sought to obtain information on how these applications are used in the economic field.

Keywords: data analysis, worksheet, economic analysis activity, working reports

JEL codes: C80, M21

1. Introduction

Economic activity involves many decision situations. Their complexity involve organizing, processing and analyzing of a large volume of information. [4] Because of the software tools, more diverse and better, information can be organized and processed quickly, accurately and in depth. For the same amount of data processed a larger volume of complex and diverse information can be achieved, allowing to get a more complete picture of the decision analysis situation. [2]

In the data analysis activity traditional methods and software tools can be used, such as: dispersion analysis software, multi-factor techniques, regression analysis software, data-series analysis software is useful in data-series analysis in their trend format, seasonality and of the other dynamic series components.

But where would be a more complex economic analysis, viewing the information in the form of diagrams is necessary to use specialized software tools for analysis, such as spreadsheet applications, multidimensional analysis tools, data mining applications. [1]

Among the specialized analysis tools, spreadsheet applications are the most accessible, regarding the price. In addition, techniques and tools for organizing, processing and presentation of basic data, such as strengthening multiple lists, filtering, running sum, pivot tables they offer, largely satisfy the needs of organization and data analysis activities in the field of economics. [3] For this reason we conducted a study in which we sought to obtain information on how these applications are used in the economic field.

2. Data analysis and interpretation

The study was conducted with the help of the masters in economics students from the University of Oradea. The specializations covering the activities of marketing, management and accounting were

taken into account. The most of the master degree students, both first and second year, have a job in state institutions and private companies in the western part of the country, being involved in economic activities. Thus they can provide valuable information on how spreadsheet software are used in business, the importance that managers attaches to improve the knowledge for their employees in using these applications.

Economic activities involving the subjects were grouped as follows:

- Management activities;
- Marketing activities;
- Accounting activities.

The sample chosen for study is representative because of the large number of institutions and companies in which students work. The table below presents the number of institutions and companies considered:

Investigated domain	Number of students	Number of institutions	Number of companies	Institution and companies
Management	150	27	104	131
Marketing	150	11	123	134
Accounting	150	24	106	130
Total	450	36	298	334

From the table above one can see that the subjects who participated in the study came from 36 institutions and 298 private or state companies.

To collect the necessary information a questionnaire was compiled, which was served with either students or was sent by email. Questionnaires were completed by almost all students entered in their possession. Therefore, the total of 450 questionnaires distributed, 446 were completed, returned and used for analysis, resulting in a response rate of 99.11%.

Response rate is very high compared to the situation in which questionnaires were sent for completion to persons who are not involved in an continuous learning activity. This conclusion has been driven during previous studies in which questionnaires were sent only by e-mail to people working in the economic field, without involving students. Response rate in those cases ranged between 50% - 60%.

The questions were grouped as follows:

- Questions related to the activity field of the subjects (management, marketing, accounting) and their studies.
- Questions related to the number of employees of the institution or company, the share in the total number of the company's employees of the people working in the activity field of the respondent.
- Questions related to the graduated domain, informatics studies attended, software application known.
- Questions related to the complexity of the reports they manage.
- Questions related to the activity of the economic data analysis.
- Questions related to the software applications they use in their activity.
- Questions related to the spreadsheet solutions used: the complexity of the processed data, instruments for data management, data processing and data analysis.

Collected data showed that:

- % of the subjects use spreadsheet solutions in data management, data processing and data analysis activity.
- % of the subject do not use spreadsheet solutions. Examples for this situation:
- Subjects employed in a small business private company (under 10 employees). These companies usually use software only for accounting activities. Data analysis is reduced only to compare levels at different period of time (usually the current and previous month) for management decisions. For example current month's sales are compared to those of the

previous month, the result being used to make a decision regarding the level of the next month's supply.

- Subjects that works as accountants. They use only accounting software to generate accounting reports.
- Subjects which use other software applications in data analysis, such as: data-mining specialized software, database software which include data mining instruments.

- % of the subjects which do not use spreadsheet solutions works as accountants. In most cases, they use specialized software to generate specific (desired) reports based on the software's graphic user interface- GUI (menus, commands, and so on). Data analysis and processing is made by other employees of the company.
- % of the subjects use "working reports" type software, created inside company or institution. This is the case of the employees working in a company or institution with specialized workers, employed to create personalized software.
- % of the subjects uses Microsoft Excel ® as spreadsheet solution. In most cases spreadsheets are used only for simple calculus, such as summation. Using the results, a person can make a decision, usually regarding what to do next month, based on the current month data, compared to the data acquired in the previous month. In other cases are used instruments for organizing, statistic processing and simple analysis of the data offered by the spreadsheet software: multiple lists consolidation, summation, filtering, subtotals, pivot tables, trend diagrams and relations, alternative comparison for optimum decisions.
-The most people using spreadsheet applications or type of work reports, ie 47.80%, works in managerial domain. Short distance behind, with a percentage of 42.65% is the marketing domain. The accounting domain is the worst, those who use spreadsheet applications or type of work reports representing only 9.55%.

Results are synthesized in the table below:

Software used / Field of activity	N	A	B	C	D	E
Management		78	3	11	38	20
	%	52,00	2,00	7,34	25,33	13,33
Marketing		67	6	14	29	32
	%	45,27	4,05	9,47	19,59	21,62
Accounting		19	-	4	3	122
	%	12,84		2,70	2,02	82,44
Total		164	9	29	70	174
	%	36,77	2,02	6,50	15,70	39,01

A - Microsoft Excel
B - Other spreadsheet applications
C - "Working reports" type software applications realized inside the respondent's institution or company
D - Buyed "working reports" type software applications
E - Do not use neither spreadsheet application nor "working reports" type software

It appears that 39.24% of the respondents used in their work spreadsheet applications and 36.77% of them use Microsoft Excel ®. Using mainly of Microsoft Excel ® can be explained as follows:

- Institutions and companies largely use the Microsoft Office software package, which includes the Excel spreadsheet application.

- The economic students, have in their syllabus, information on how to use this application

- Possibility of obtaining certification by ECDL accredited test centers in some schools in Oradea and in several localities of Bihor county and the Faculty of Economics, certification that entitles their owners to the use of Microsoft Excel.

3. Conclusions

Most of the University of Oradea students in master's cycle in the economy domain, are employed in state institutions or private companies, being involved in economic activities. They use pretty much in their activities of management and marketing, spreadsheet applications, or "working reports" type software. The survey found that 60.99% of the respondents use such applications.

Among those who know and use spreadsheet applications for drawing up the reports necessary for carrying out the work, 94.80% use the Microsoft Excel. This is due, on the one hand, to the fact that institutions and firms use mainly Microsoft Office software package, and secondly, that economic graduates know how to use Microsoft Excel application from school.

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