

THE PRACTICES OF ACCESSING AND SAVING INFORMATION. A SURVEY OF USING DIGITAL VS TRADITIONAL MEDIA

Przemysław Polak. *Warsaw School of Economics. Al. Niepodleglosci 162, Warsaw, Poland*

ABSTRACT

The pervasiveness of the Internet and new electronic devices has changed significantly information searching practices. However, little is known about users' further behaviors: methods of storing and using information. The purpose of the study was to examine the actual behavior of users when they intend to use in the future the information retrieved from the Internet. The survey also examined the extent to which students actually use the Internet for obtaining information, as well as the proportion between the use of digital and traditional printed sources of information. The study was conducted at four universities from four different countries. Although the most popular action taken is to make a copy on a disk or other electronic device, the significant percentage of respondents print interesting content, particularly if printing is easy available and not expensive. On the other hand, some participants do not take any action assuming that they can always find the required content again.

KEYWORDS

Internet, e-society, information quality, digitization, e-books, internet users behaviors.

1. INTRODUCTION

Over the last decades, the ways to access information have undergone significant transformations. Those changes were triggered by two main factors: the growing popularity of electronic tools (e.g. computers, smartphones, tablets) and widespread internet access.

Before the digital age, the dominant sources of information included a word of mouth, drawn signs, written and printed text. Since the creation of writing, the form of book has evolved with the development of new technologies: from clay tablets, through papyrus scrolls, wax tablets, parchment codices up to contemporary printed books. Although, mechanical movable type printing was introduced in Europe in the fifteen century, printed sources: books, newspapers, periodicals, leaflets etc. became widely spread in industrial societies throughout the eighteen and nineteen centuries (Briggs and Burke, 2009). Printed materials substituted a

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word of mouth as the primary source of information about the world for the general public (McLuhan, 1962).

The prevalence of printed publications contributed to the increased availability of information in society. However, access to specific information was often very limited from the perspective of an individual user. If information was in user's private resources available on a site where a need for information occurred, then the information availability level was very high. On the other hand, in many cases, finding information required finding the right resources in a library or an archive.

In the era of dominant printed content, the level of information availability was usually very stable. Even in the event of destruction or loss of a printed document, it was usually possible to find its equivalent, for example another copy of a book. Moreover, in order to secure the high availability of information at any time later, a common solution was to make handwritten notes. The widespread adoption of photocopiers significantly contributed to the possibility of maintaining the high level of availability of previously acquired printed information, but it also raised new legal and economic issues (Liebowitz, 1985).

Revolutionary changes took place with the rise of digital information resources accessible to the public online. Over the last decade, the processes of searching and storing information by individual users have been very highly saturated with information and communication technology. Personal computers, smartphones and tablets are commonly available in highly developed countries. Moreover, the Internet access is often considered as a common public good (Hess and Ostrom, 2003). In 2012, in the European Union (28 countries), 78.4% of households had an access to a home computer, and 76.1% of households had an access to the Internet (OECD, 2014).

Radio, television and newspapers are the main traditional sources of information about current events. Electronic information services were introduced in the seventies, first in the form of videotext, then the computer services available by modem. Internet portals are specialized form of information services on the Internet. However, also traditional media noticed the possibilities of using the Internet. Most newspapers have their electronic versions or associated portals. Radio stations, as well as some TV channels, especially those of information profile, also broadcast over the Internet. Moreover, some stations transmit their programs only in this way (Coroama et al, 2015).

Messages exchanged directly between people always played an important role in disseminating information. A word of mouth has found its counterpart on the Internet. Information about current events or opinions about various issues can be exchanged on the forums, read in blogs, received via Twitter messages or can be accessed from other social network services, including Facebook (Oeldorf-Hirsch and Sundar, 2015).

A special role in the access to information on the Internet is attributed to the Wikipedia. Wikipedia is currently the largest database of an encyclopaedic nature. It functions as an international project and has 293 language versions, as of 2nd June 2016, of which 58 contain over 100 thousand articles. The most comprehensive is the English version of Wikipedia, the size of which exceeded 5 million articles (Wikimedia, 2016). For comparison, perhaps the most recognizable in the world of the traditional publishers Encyclopedia Britannica, previously available in print in 32 volumes, or on CD/DVD, or as a paid on-line version, has about 120 thousand articles. The various language versions of Wikipedia are formed independently of each other, they are not a direct translation of any standard version, although individual articles can be actually translated from another language.

Apart from traditional printed forms two other types of book were developed: an audiobook and an electronic book. The recording of a text being read became possible with the invention of a phonograph by Thomas Edison in 1877. However, audiobooks (or talking books) became popular in the thirties of the twentieth century when large-scale literature resources of gramophone records were created. The first such projects were implemented in the UK by The Royal National Institute for the Blind and in the USA by The American Foundation for the Blind and the Library of Congress (Rubery, 2011). In the second half of the twentieth century, it became popular to distribute audiobooks on audio tapes. However at that time, the use of audiobooks was largely limited to the environment of visually impaired people due to the impracticality of available media to record large literature works. That was caused by their small capacity. For example, the full version of "War and Peace" by Leo Tolstoy can be recorded on 119 gramophone discs, 45 cassette tapes or 50 CDs in Audio-CD standard (Rubery, 2011). A significant change was caused by the use of computers and the spread of highly compressed audio formats, mainly MP3 after the disclosure of the codec to that standard in 1997, and the emergence of free applications that support that format, e.g. Winamp (Ganz and Rose, 2011). As a result, audio books including the most comprehensive literary works can be stored on virtually any modern storage media, and distributed in the form of a file or a data stream over the Internet. While, in order to play an audiobook can be used many popular devices: MP3 players, smart phones and personal computers.

An electronic book (or e-book) came to being along with the possibility of processing a text file on a computer. The first extensive initiative of creating a library of electronic books was Project Gutenberg initiated in 1971 (Hart, 1992). An e-book can be saved in a plain text file, or in document formats such as DOC, PDF or HTML. Those types of files can be read using any computer device. However, the market for electronic books was developed, at the end of the first decade of the twenty-first century, with the spread comfortable mobile devices for reading e-books equipped with the technology of electronic paper. EPUB and MOBI are the most popular e-book formats designed for electronic readers.

The usage of a new information technology is often accompanied by the continuation of existing user behaviors characterizing old processes and practices typical for using traditional methods and technical solutions. It is caused by both inadequate user skills in operating new devices and software applications as well as by deep-rooted habits to continue known modes of action. A role in shaping user's behaviors is also played by their concerns over the lack of confidence in data and operations security when using new devices and new methods of data processing (Hirschheim and Newman, 1988; Strassmann, 1985). As a result, full technical capabilities of devices are not used, and thus lower economic efficiency of new technologies is observed. An example of this phenomenon observed at the level of a whole organization is the collapse of the concept of "paperless office" formed by the rise of personal computers and office work support systems, in the eighties of the twentieth century. In fact, the widespread accessibility, ease and speed of printing caused an increase in paper consumption (Sellen and Harper, 2002). Despite the emergence of new generation systems for offices, the problem of excessive printing remains unresolved in the majority of organizations (Hill, 2015). That example proves that general appreciation of new digital technologies can be in some way misleading. The real practices of accessing and processing information, which are investigated in this article, can be influenced not only by technology capabilities but also by long-established users' habits. Therefore, those behaviors should be analyzed in the context of information quality.

2. QUALITY ISSUES OF INFORMATION ON THE INTERNET

Information acquisition from the Internet has favorable economic characteristics. It is inexpensive in terms of direct costs, as well as it is less labor-intensive than accessing paper sources. Internet search engines provide easy and immediate retrieval of searched information. A digital form of information enables instant updating and supplying various multimedia resources leading to the accuracy, richness and completeness of information (Montgomery, 2000). On the other hand, the ability to create web content by virtually any Internet user raised the question of information credibility (Knight and Burn, 2005; Leite et al, 2014). Particularly Wikipedia raises heated debates. It is admired for its rapid development, the wealth of content and popularity (Giles, 2005). At the same time, it is criticized, together with other Web 2.0 services, as unreliable source of information (Keen, 2007). There are many known examples of deliberate and accidental errors in Wikipedia (Raphel, 2009). On the other hand, Web 2.0 approach can be fruitfully utilized in learning process (Howe and Kekwaletswe, 2010; Weller and Dalziel, 2007; Witzleb, 2009).

Availability of information in the Internet often does not entail reflection on its credibility, especially among the young generation, including students. That concern led to the development of various methods for quality assessment of internet sources (Knight and Burn, 2005, Standler 2004, Wilkinson 1997). Moreover, the ease of copying information from the Internet to other documents may encourage plagiarism (DeVoss and Rosati, 2002; Howard, 2007; Kitalong 1998; Sutherland-Smith, 2016).

The positive economic characteristics and the reliance on new technologies contribute to the fact that especially young generations, including students, use the web as a primary source of information. Various studies show that students extensively utilize web sites and social networking services, particularly Wikipedia, to obtain information for personal, as well as study related purposes (Biddix et al, 2011; Garrison, 2015; Guy, 2012; Head and Eisenberg, 2011; Kim et al, 2014; Shen et al, 2013). That also applies to the self-study. For example, a study conducted at the Faculty of Law, University of Bialystok shows that the Internet is the most popular tool used in self-learning. Very high and high level of its use was indicated by 95.2% of respondents (Prymak, 2010).

Among various qualities of information acquired from the Internet one of large importance is accessibility (or availability). Accessibility can be defined as possibility to obtain information when it is needed (Miller, 1996). That information quality category is usually discussed within the context of business organizations or public agencies, as one of the pillars of information assurance in relation to information security (Bharosa et al, 2011). Moreover, particularly in case of the Web, it is not a thorough and sufficient characteristic. A web page can be deleted, a Wikipedia article modified, and there can be simply no access to the Internet in a particular place or at a particular moment of time. Therefore, internet sources, in comparison to traditional paper sources, are characterized by the lack of stable availability. Some researchers add additional information quality dimension: system availability (Dedeke, 2000), but often that feature is discussed in relation to formal and well structured data processing systems, for example data warehouses (Jarke and Vassiliou, 1997).

Actually in case of social networking services, the information ephemerality can be considered a major advantage (Shein, 2013). For example, such a feature is the main reason for the market success of a photo and video messaging application called Snapchat (Kosoff, 2015). Using the application, the content (called a "snap") sent by a user can be viewed by

recipients for up to 10 seconds after which it is supposed to be deleted from Snapchat's servers.

Most researches on readership focus on the fact of reading without taking into account the forms of books and they usually have a national character (Raine et al, 2012). Whereas extensive international surveys concentrate on e-book markets, not reading habits (e.g. Wischenbart, 2014). Despite the unstable availability of information from the Internet, no research was found on how individual users act in order to store information found on the Internet for later use. Referred above studies mainly concerned an information retrieval process and not the way of saving documents and ensuring access to the information in the future. However, in order to explore users behaviors and assess the level of digitization both aspects should be investigated. The methods of accessing and saving information are closely linked. The choice of one method may determine the choice of others. But on the other hand, an individual habit can have a stronger influence on the choice of technology than practical or economical factors, working both ways in favor or against digitization.

3. RESEARCH METHOD

The purpose of the study was to examine the extent to which students actually use digital media for obtaining and storing information, as well as to investigate the proportion of the use of electronic and traditional printed forms of information medium. The study covered the use of two types of information: news about current events and books.

After finding on the website the required information, which a user intends to use in the future, one can save the content and keep it in private resources or simply can find it again on the internet when it is needed. In the first case, such information may be stored in electronic form by saving interesting content of the page on personal computer or other private device, or may be kept on paper, most often simply by printing it. While in the era of widespread use of electronic devices, printing of a web content seems to be an anachronistic action, the failure of the concept of "paperless office", as well as the convenience and traditional popularity of printed media are good grounds for the inclusion of this form of storing information in the study. On the other hand, a user can assume that it will be possible to find the information again using a saved link to a web page or using an internet search engine. That part of the study was aimed at examining the actual behavior of users when they intend to use the information retrieved from the Internet in the future.

There are various studies providing information on the use of the Internet and Wikipedia in other academic environments around the world (Head and Eisenberg 2010, Judd and Kennedy 2007, Lim 2009, Snyder 2010). Whereas, none of them investigated how the information was processed later. Also, majority of studies were limited to one country, often to students from one academic institution.

The respondents of the questionnaire were students from universities in the Netherlands, New Zealand, Poland and Turkey. All those countries are well-developed, free-market democracies and they are all members of the OECD (Organization for Economic Co-operation and Development). However, they differ in the degree of economic development, and the level of development of science and higher education. The Netherlands and Poland are members the European Union. Turkey has the most distinct cultural traditions and historical experiences of the countries concerned. However, it has been applying for membership in the EU (and

previously the European Economic Community) since 1959. New Zealand is located in the Antipodes, but its tradition, culture and an educational system are strongly entrenched in European (primarily British) background.

Students constitute a social group which easily assimilates new technologies. Therefore, any contemporary behaviors in using new devices and internet services should be reflected within that group. The respondents from all countries were studying areas related to economics, management, and business administration. Therefore, the survey is not representative for the whole population, it focuses on a specific group of students. On the other hand, the results from different countries and universities are comparable, not influenced by participants' personal traits reflected by the choice of a different field of study. The research was conducted at four tertiary education institutions:

- Erasmus School of Economics and Rotterdam School of Management, Erasmus University Rotterdam (EUR),
- Victoria Business School (Faculty of Commerce), Victoria University of Wellington (VUW),
- Warsaw School of Economics (WSE),
- Sabancı University (SU) in Istanbul.

The survey was conducted using a group administered questionnaire, so a respond rate was nearly 100%. The high level of external validity was achieved due to distributing questionnaires during compulsory classes. After the rejection of unreliably completed questionnaires, 675 forms were qualified for further analysis. Additionally, individual students and staff members were interviewed in order to understand the preferences and behavior of respondents.

4. SOURCES OF INFORMATION ON CURRENT EVENTS

The purpose of the first part of the study was to determine what are the main sources of information about current events. The questionnaire included the following choices:

- printed newspapers and magazines,
- television or radio,
- web editions of newspapers and magazines,
- articles in the Internet portals,
- informal online sources (e.g. forums, blogs, Twitter),
- directly from other people (colleagues, friends, family).

Respondents could also mention other sources, but only one student added such a source – screens displaying news and advertisements in the underground city trains in Warsaw. Respondents were asked to identify up to three most frequently used sources of information, so, the results do not sum to 100% (see Figure 1).

The study shows that traditional sources (printed newspapers and periodicals as well as radio and television) and the Internet are still popular sources of information about current events. Particularly students from the WSE most frequently use traditional sources of information. However, at least half of the respondents from all three institutions pointed to the traditional sources of information, both printed and broadcasted, as one of the three most frequently used sources of information.

Surprisingly, social media, despite the great attention paid to them in the media, appear to be less important source of information about current events than many other sources. Whereas, interviews with students showed a special role of social media in contacts with friends and family in a distant place of residence, particularly for students studying abroad with relatives in the home country.

An interesting observation shows difference in popularity of web editions of newspapers and magazines and typical internet portals among students in different countries. According to the respondents from the Victoria University of Wellington and the Sabancı University, the web editions of newspapers and magazines are more than two times more popular source of information than the articles in the Internet portals. Whereas, the results from the Warsaw School of Economics and the Erasmus University were completely opposite. Those differences result from the different development paths of popular online news portals in various countries. Popular portals could evolve from traditional newspapers or come into existence as independent services. However, the results show the substitutability of web portals and online editions of newspapers and magazines. Summed up indications on both of these sources of information from different institutions have very similar values:

- 116.6% for the Erasmus University,
- 110.7% for the Victoria University of Wellington,
- 111.4% for the Warsaw School of Economics,
- 110.3% for the Sabancı University.

Receiving information directly from other people was equally important for the students of the all surveyed institutions. About a quarter of respondents pointed to a word a mouth.

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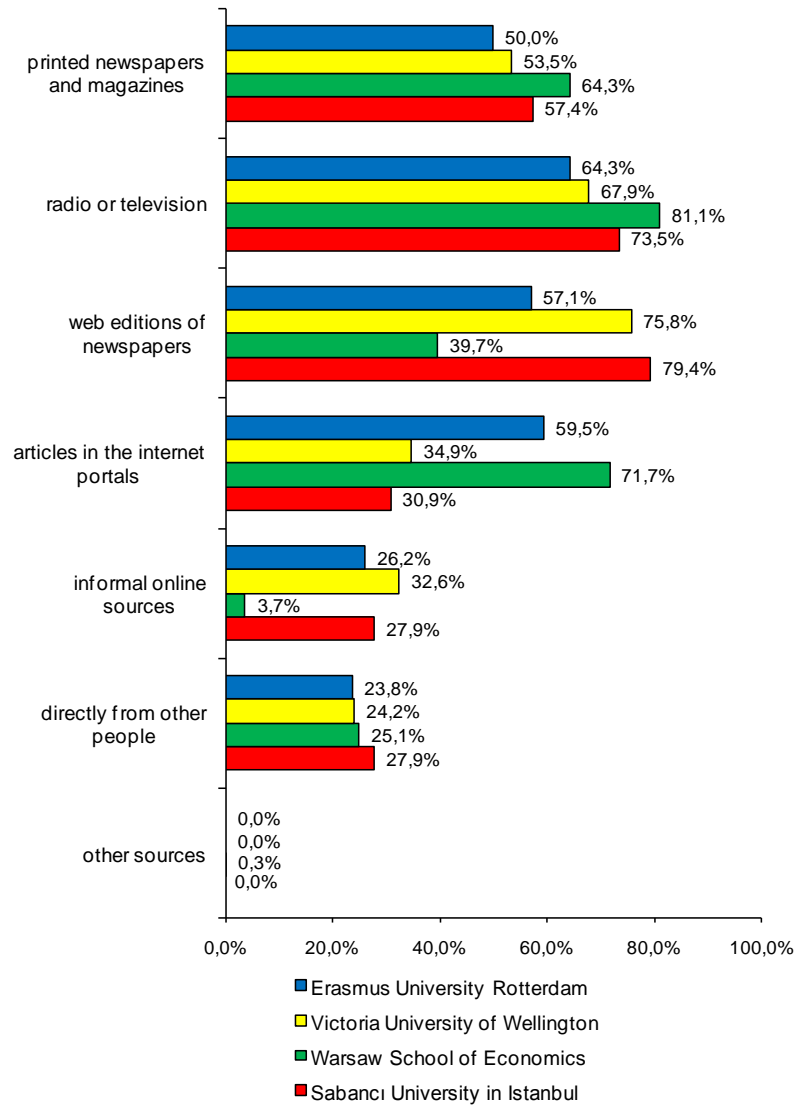


Figure 1. The most popular sources of information on current events according to respondents from different institutions

The survey revealed also a particularly low importance of informal online sources for Polish students (only 3.7% of responses) compared to about 30% from other institutions. That indicates a certain delay in the widespread use of social networking services among students from the Warsaw School of Economics compared to respondents from other institutions. That was confirmed by similar studies conducted at the WSE in the following years. The analysis of those data confirms that the use of social networking sites has increased, what indicates a gradual achievement of the similar level of popularity of social networking services to that from the other universities participating in the survey (Polak, 2014).

5. FORMS OF READING BOOKS

The second part of the study was designed to verify whether the electronic form of books replaced the traditional paper form. The electronic form encompassed text and image-based publications in various digital formats readable on computers, PDAs or specialized e-book readers. Additionally, the questionnaire included audiobooks – recorded spoken versions of books in any format: analog (e.g. cassette tapes) or digital (e.g. MP3 format). Thus, the respondents had a choice of three types of books:

- traditional printed books,
- electronic books,
- audiobooks.

5.1 The Most Popular Reading Habits

It turned out that printed books remained dominant form of reading (see Figure 2). Electronic books gained quite high level of popularity, but considerably lower than traditional books. Whereas audiobooks are the first choice for very insignificant number of respondents.

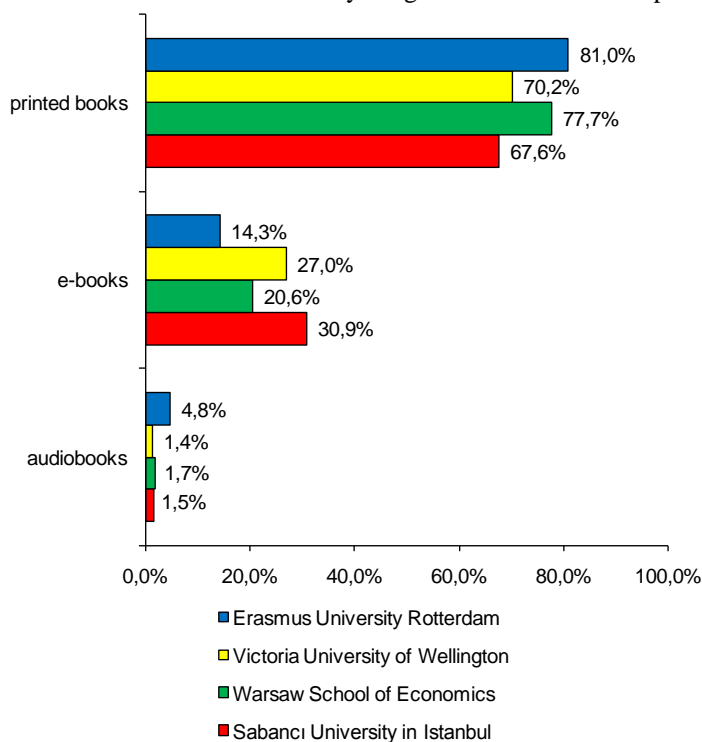


Figure 2. The most popular forms of reading books according to respondents from different institutions

However, significant differences between students of various universities were observed. The smallest percentage of respondents most frequently reading electronic books (14.3%) is from Erasmus University. The outcome is surprising, because the Netherlands has more

developed the e-book market compared to other countries participating in the study (Wischenbart, 2014).

Nearly one-third of the respondents from Sabancı University (30.9%) most often read e-books. That number is more than twice higher than from Rotterdam. The difference in the popularity of e-books may be influenced by the structure of academic library resources. The Sabancı University Information Center library resources include 115,850 books and 185,583 e-books (Sabancı Üniversitesi, 2016). Whereas, the EUR library offers large collection of 345,000 e-books, but much more traditional books – 1,100,000 (Erasmus University Rotterdam, 2014). On the other hand, the WSE library has also a considerable collection of about one million books but all in traditional printed form, only journals are available in electronic form (Warsaw School of Economics, 2012). The SU students confirmed that they mainly use e-books provided by their academic library. Whereas, some WSE and VUW students admitted that they acquired e-books privately, often without charge in the form of illegal copies downloaded from the Internet. In the second case, the use of illegal version was declared mainly by foreign students, mostly from Asian countries, such as e.g. China, India, Indonesia, South Korea and Malaysia. In some of those countries the attitude to copyright is radically different from American or European. And those students represent the majority of foreigners studying at the Victoria University.

5.1 Rejected Forms of Reading Books

Despite the fact that e-books were not the most popular form, they are commonly used. Only between 10.2% (Victoria University) and 20.9% (Warsaw School of Economics) of students declared that they did not read them at all (see Figure 3). However, bearing in mind that current period is called the digital age those values can be considered as surprisingly large.

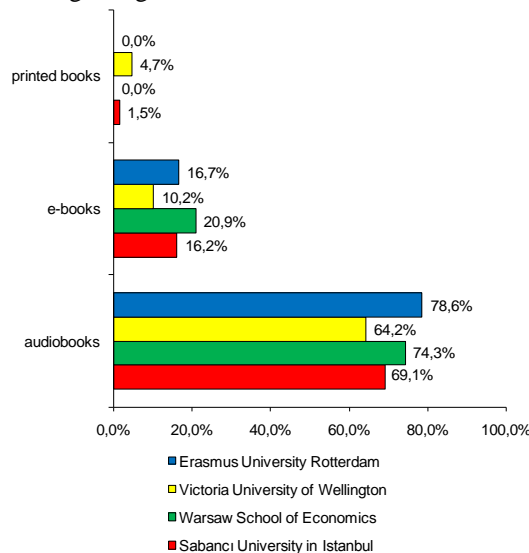


Figure 3. The percentage of respondents never reading particular forms of books

According to the survey, the use of audiobooks was significantly low. It seems that they remain a niche form, primarily addressed to people who have impaired sight and to car drivers. Moreover, interviewed students admitted that they prefer listening to music than to audiobooks with their smartphones and MP3 players, what mostly explains those results.

An interesting observation is that there is a certain group of people observed in this study at universities in Turkey and New Zealand, who resigned completely from reading traditional books, and they read only electronic books. It can be expected that following the increasing popularity of electronic books and the growth of the e-book market the size of this group will gradually increase.

The results shown in Figure 2 in case of the University of Victoria do not add up to 100%. The reason for that are the indications of three students, representing 1.4% of the study group, who reported that they did not read books in any form. These three questionnaires were not considered unreliably filled, because the answers to questions on other issues indicated conscientiously completed surveys. Therefore, it must be assumed that those three respondents do not read any books at all.

6. INFORMATION SAVING PRACTICES

Respondents were asked in a questionnaire, how they act if they plan to use in the future the content of a web page or an article read on the Internet. They had a choice of four behaviors:

- I print interesting content,
- I make a copy on my disk or other electronic device,
- I remember (e.g. in *favorites*) a link to a web page,
- I do not save it in any form. I assume that I can always find it on the Internet, e.g. using a search engine (e.g. Google).

6.1 The Most Popular Behaviors

The results of the survey show that the most popular behavior of students when saving information from the internet for future use is making an electronic copy, 36.7% of respondent chose that answer (see Figure 4). However, nearly equal group (34.8%) usually saves a link to original resource. It is worth noting that 16% of respondents most often print documents. This is astonishing especially in case of students, because it is undoubtedly the least economically justified behavior. The costs of paper and other printing supplies are quite high. In addition, such action may be perceived as extremely not environmentally friendly. It seems that this behavior shows to a certain extent a lack of confidence in electronic media and concerns about the possibility of losing such data. Taking into consideration the results presented previously that showed continued high popularity of paper sources of information (e.g. books, newspapers), the probable cause for printing the content of websites may be the convenience and habit of using mainly printed content, or a lack of need to have access to a computer or other electronic device for subsequent use of such sources, what may be inconvenient when working with many documents.

Analyzing the results from a different point of view, the survey reveals that majority of students (52.7%) are careful and usually save the content in some form, electronic or printed. Other respondents typically assume that information will be available on the Internet in future.

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It should be noted that not only not saving anything, but also remembering only a website address means that no actual information is saved in private resources. Both actions will prove to be reasonable only in the case the content is not removed from the web and the access to the internet is not restricted for other reasons, for example a technical failure. If searched information is important, such behavior can be considered as risky, and even irresponsible. This carelessness can result from a naive belief that the internet is and will be available in every situation, and moreover, that no resources can ever be removed from it.

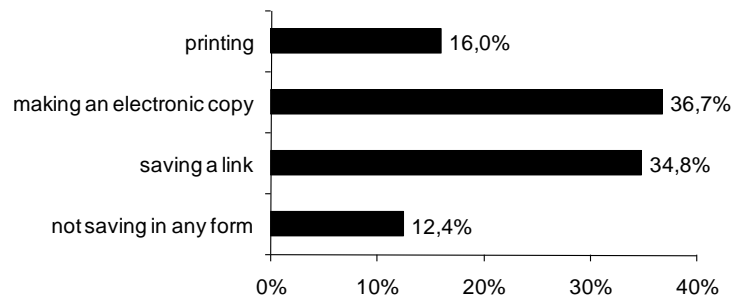


Figure 4. The percentage of respondents' answers to the question about the most popular information saving practice

Only 12.4% of students usually neither save an information nor even write down a link to it. They assume that they will be able to find once again the information if necessary using, for example, an internet search engine. This low value may be caused by earlier experiences of respondents associated with difficulties in finding information.

6.2 The Rarest Practices and Extreme Behaviors

In addition to the frequency of performing specific actions, respondents were asked to indicate those practices which they never perform (see Figure 5). The study shows that most respondents (32.3%) never take the risk of not saving in any way the content of websites that they intend to use in the future. Whereas, printing is an option never undertaken by one fifth of the respondents. It means that nearly 80% of study participants at least occasionally use information found on the Internet in printed form. The smallest number of indications concern both electronic forms: storing a content (11.9%) and saving a link (5.2%). It confirms that these two forms are the most popular user practices when students intend to use information in the future.

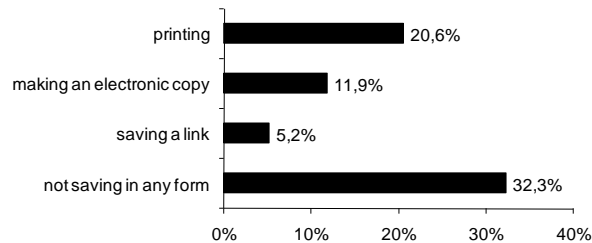


Figure 5. The percentage of respondents never performing particular practices

Interesting results are brought by an analysis of the most extreme behavior patterns. As extreme behaviors are considered those cases where a respondent marked only one type of action performed when intending to make use of the content found on the Internet at a later time.

It turned out that the most extreme behavior was not saving a web content in any form. Nine students who represent 1.3% of all respondents indicated this option. It is a particularly extreme practice if one takes into account that not saving in any form is the least dominant behavior and the one never performed by the largest percentage of respondents. It seems that students who never save content or addresses is a specific group of young, unreliable and not very responsible people.

Saving always only addresses is the second largest extreme practice. That behavior characterizes 8 respondents (1.2% of all participants). Finally, one respondent claimed that he always prints a content for future use.

6.3 Differences between Respondents from Different Countries

The surveys were conducted in four different universities from four different countries. Interesting conclusions may provide the comparison of results from those institutions. Although, it should be remembered when analyzing the results that the surveyed students are not a homogeneous group of one nationality with single cultural background. It is a common practice to study abroad. Many students from other EU countries, including Turkey study in other European universities. Also, many students from Eastern Europe and from the countries from the former Soviet Union study at the Warsaw School of Economics and the Sabancı University. Whereas, significant number of students from The Victoria University came to study from various countries particularly from Eastern and Southern Asia.

The survey on the most popular saving behavior clearly shows two pairs of institution with similar results. Significantly less students from the EUR and the VUW most frequently make an electronic copy the students from Warsaw and Istanbul (see Figure 6). Whereas, more participants from Rotterdam and Wellington most often save an internet link and do not practice any form of remembering the source of information. This may be related to the experiences of students in countries with higher quality of access to the Internet. They are more likely to assume that access to the network and internet services is always stable. There are no significant differences between the respondents from different institutions in terms of a number of students most frequently printing an internet content.

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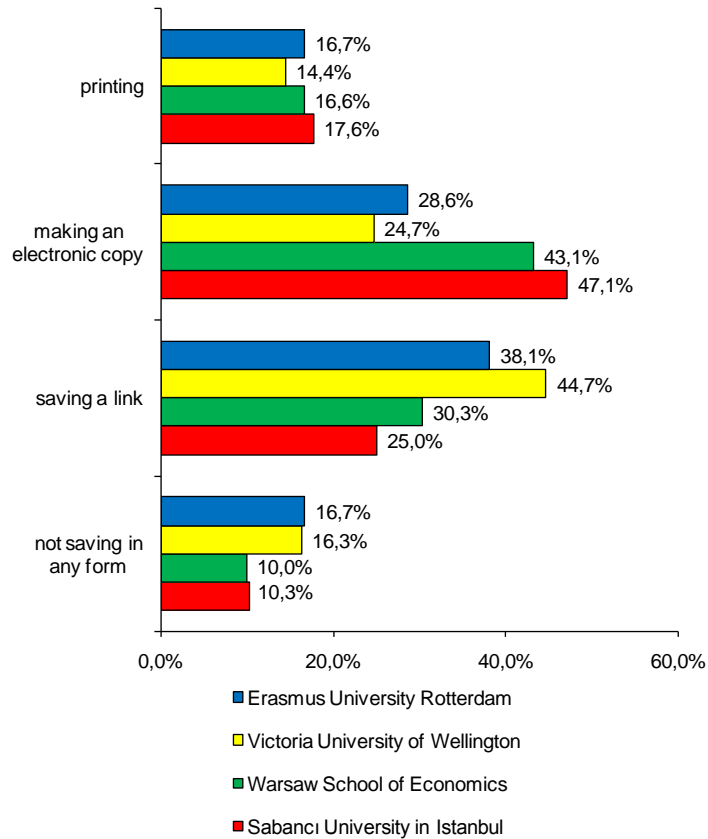


Figure 6. The most popular information saving practice of respondents from different institutions

The data on never performed activities do not show such obvious patterns and conclusive findings (see Figure 7). Significantly larger percentage of respondents never print any content from the Internet at the Victoria University of Wellington (26.5%) and at the Warsaw School of Economics (20%). That phenomenon could be caused by the availability of printers within a campus. Also, the cost of printing is rather relatively higher for students in Warsaw and in Wellington, in the VUW particularly high for large group of foreign students from South and East Asia. The situation is reversed at the Sabancı University, where students are allowed to print at the convenient facilities at the campus. It can be a reason why only 8.8% of respondents from Istanbul never print a webpage content.

7. CONCLUSION

The research shows that students' information processing behaviors are not so much digitized as it is expected based on current general opinions about young people, who are supposed to easily and swiftly absorb new technologies and ways to employ them. The study shows that there is still a place for traditional media. The vast majority of respondents, to a lesser or

greater extent, still use printed newspapers and magazines. Moreover, printed books are the dominant form of reading books. The study confirms that the accessibility to particular types of information sources is an important factor influencing their popularity among the surveyed students. This factor includes such features as the size of local e-book market, the structure of university library resources, and even availability of illegally distributed, infringing copyrights e-books. As many as 16% of respondents most frequently print documents in order to keep information from the internet for future use. Moreover, nearly 80% do it at least occasionally. The frequency of printing is influenced by the cost and availability of printing facilities. It is possible that if students are provided with cheaper or free and convenient printing facilities they will print the content of web pages more often than the survey shows. Habituation to the traditional paper media seems to be still stronger than the pressure of new technologies.

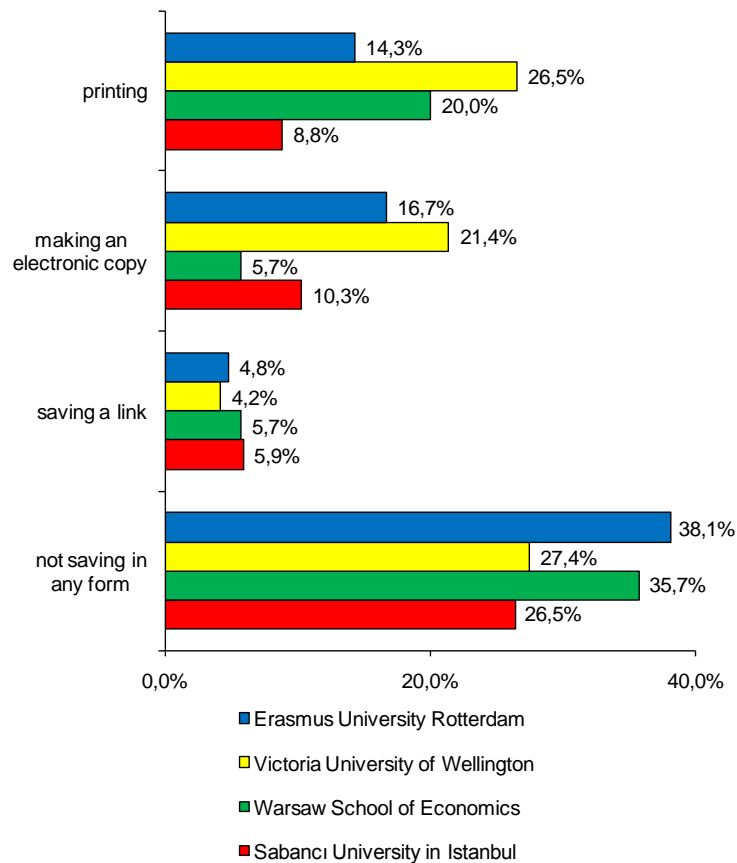


Figure 7. The percentage of respondents from different institutions never performing particular practices

As regards saving information, the behaviors of students declared in the questionnaire are very diverse. There is no single dominant pattern. The most common action taken in order to use a web page or an article content in the future is to make a copy on a computer or other electronic device. Almost the same number of respondents usually keep only link to such content. The comparison of results from different universities shows two patterns. More

students from Dutch and New Zealand institutions most frequently save only a link and do not save a content in any form. Whereas, more students from Poland and Turkey makes an electronic copy. Those differences may be caused by earlier experiences with unsatisfactory network availability.

Constantly observed the rapid development of information technology and the introduction of new electronic devices can change in the future the behaviors that are the subject of this study. Therefore, it seems appropriate to continue the study in subsequent years in order to examine possible changes.

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