

MAŁGORZATA BUDZANOWSKA-DRZEWIECKA

Jagiellonian University
Institute of Economics and Management
Chair of Organizational Behaviour

ANETA LIPIŃSKA

Jagiellonian University
Institute of Economics and Management
Chair of Standardized Management Systems

THE COMPETITIVE AND COOPERATIONAL ACTIVITIES OF COMPANIES ON THE INTERNET IN THE LIGHT OF POLISH RESEARCHERS' STUDIES – AN ASSESSMENT OF METHODOLOGIES

INTRODUCTION

The dynamic development of information and communications technology (ICT) and the constant increase in the availability and usability of the Internet affect the functioning of individuals and social groups, public institutions, markets, business entities and others. Therefore, the researchers' interest in examining this field seems justified.

The Internet in research studies is most often defined at three mutually conditioning levels of analysis – as a medium of communication, a technological tool (network of networks) and a place of realization of social and economic interaction. [Markham 2004, p. 96]. The last area is the basis for analyses in this study.

The purpose of the study is to analyse research methodology used by Polish academics in their studies of the activities of companies on the Internet. The purpose is twofold. Firstly, the study is supposed to show typical principles of research methodology. Secondly, thanks to the review, it allows to create recommendations for future research. Thus, the analysis refers to the systematization and identification of the type of research which is of interest to Polish academics.

From this purpose, there appear two basic directions of the analysis:

- the establishment of subject areas of research of the Internet conducted by Polish academics,
- the identification of the principles of research methodology used by Polish researchers.

1. THE AREAS OF RESEARCH ON THE USE OF THE INTERNET IN BUSINESS ACTIVITIES

The development of information technologies, including the Internet, is one of the factors influencing the intensification of competition and the reduction of permanence of competitive advantage on the market which is defined in the literature as hyper-competition [D'Aveni 1994, pp. 217–218; Polowczyk 2011, pp. 6–10]. This is also influenced by the phenomena, such as globalization, an increasing number of substitutes, an increase in consumer awareness and the ease of obtaining information about products and services. Enterprises operate in the information society because information has become a crucial resource which often determines the degree of competitiveness of companies on the market [Grudzewski, Hejduk 2002, p. 58; Mroczko, Stańkowska 2010, p. 144].

The Internet has an influence on, among other things, increasing the possibility of sharing and obtaining information about products, services and the market (promotional activities and marketing research); establishing relations, exchanging opinions and ideas (negotiations, lobbying), conducting business transactions (payments, e-commerce) and the creation of new distribution channels (e-services) [Szapiro, Ciemniak 1999, p. 63]. These factors play a significant role in forming competitive advantage of companies.

In business activities on the Web, in addition to the activities resulting in increased competitiveness, one can distinguish a different plane of actions aiming to expand cooperation. These activities are realized mainly through the processes of knowledge sharing on the Internet with the use of social media¹ [Internet Trends 2010].

¹ Social media represented by portals, such as Facebook, MySpace, or NK (Nasza Klasa) are Internet services which enable their users to create individual profiles, communicate and share information with other users as well as undertake other activities using available tools, such as blogs, messengers and others [Boyd, Ellison 2008, pp. 210–230; Trusov, Bodapati, Bucklin 2010, pp. 643–658].

The changes which occurred as a result of the development of the Internet and the technologies spreading its use, such as those in mobile devices, caused a significant increase in organizational – informational potential of the Web through the development of the concept of Web 2.0. The Internet in the new edition provides its users not only with opportunities to receive information but also to create and publish content. Moreover, it allows to participate in the existing activities of a social or economic nature or creating new ones. These opportunities are increasingly used in business activity, especially in the field of cooperation between enterprises and customers. Don Tapscott defined partnership which used the Internet as *wikinomics*. [Tapscott, Williams 2006], while Jeff Howe is the author of the term *crowdsourcing* which means gaining knowledge from inspiring a crowd [Howe 2006]. In recent years, crowdsourcing has become almost synonymous with the word *cooperation* and stands for both collective sharing of various types of information, experience, ideas and – in a narrower sense – sharing professional knowledge. Companies using the idea of crowdsourcing in their activities benefit from the exchange of ideas and innovations proposed and assessed by consumers themselves. This is a qualitative change in comparison to conventional solutions solely based on expert knowledge.

Along with the development of the Internet, the area of Web usability in business activities has also become of interest to researchers. The research includes different threads, including economic, social, cultural and technological issues connected with the functioning of the Internet [Castells 2007, 2008, 2009; Wrycza 2010] and those of a managerial nature, such as, the analysis of models and actions taken in the Internet environment [Afuah, Tucci 2003; Tapscott 2007; Warner, Witzel 2005]. The issues connected with business strategy on the Internet can be found in the studies by Michael E. Porter [Porter 2001, pp. 63–78] and Rajan Varadarajan et al. [Varadarajan, Yadav, Shankar 2008, pp. 293–308; Varadarajan, Yadav 2002, pp. 296–312].

A significant part of the research connected with the activities of companies on the Internet covers two areas: electronic commerce and activities of selected marketing mixed instruments.

Researchers who analyse the issues of electronic commerce (*e-commerce*) mainly focus on the strategies of competition in this area [Nikolaeva 2007, pp. 560–571] and the possibilities of lowering prices by offering online products [Zettelmeyer, Morton, Silva-Risso 2006, pp. 168–181].

Another thread present in the research is the analysis of the possibility of shaping the product on the Internet. The possibility of positioning brands thanks to the development of open space is also an interesting topic apart from referring to the development of *e-services* [Pitt et al. 2006, pp. 115–127].

One of the better represented research threads is the promotion policy. This trend focuses primarily on issues connected with online advertis-

ing [Zhang, Wedel 2009, pp. 190–206]. It is worth noting that some of them focus on mutual interactions between online and offline advertising as part of integration of promotional activities [Goldfarb, Tucker 2011, pp. 207–227]. Significant part of the studies is devoted to the promotion and other instruments used on the Internet, such as Word of Mouth online (WOM). One can distinguish the studies examining not only the functioning of WOM [Moe, Trusov 2011, pp. 444–456] but also the impact of this form of Internet promotion on the sale of products [Chen, Wang, Xie 2011; Chevalier, Mayzlin 2006, pp. 345–354]. Interest in this research area may result from the development and importance of social media. The use of social media in business is one of the most current research topics of contemporary international and Polish literature. For example, Michael Trusov et al., tried to identify these social media users whose activities affect the decisions made by other Internet users, which at the same time is the foundation of the effectiveness of WOM and viral marketing as well [Trusov, Bodapati, Bucklin 2010, pp. 643–658]. Other studies in this area focused on blogs which are one of the main determinants of the Web 2.0 trend [e.g. Liu et al. 2007, pp. 232–237]. Furthermore, the subject of the research in the field of possible use of knowledge sharing on the Internet is Internet communities, including the motives of Internet users for participating in crowdsourcing activities undertaken by business entities [Brabham 2008, pp. 75–90; Lakhani et al. 2007; Lietsala, Joutsen 2007].

2. CONCEPTUAL BACKGROUND AND METHODOLOGY

The review of the studies published in recent years in western literature allowed to define the general scope of research topics connected with the activities of companies on the Internet (Table 1). Within the scope of subjects raised by Polish academics, two important areas were emphasized – defining basic research questions and identifying them as part of activities of the companies on the Web (cooperation or competition). The review was also supposed to present basic analytical categories used for the review of Polish academics' studies within the area of the research into the Internet. The conceptualization of the analysis of methodology for examining the Internet was the result of important elements of a research process, including, above all, the applied method and the principles of sampling.

Table 1. The detailed scope of the analysis

The subject matter of the research into the Internet	The methodology of the research into the Internet
1. What issues concerning the activities of companies on the Internet are addressed by Polish researchers? 2. Which of the activities concern cooperation and which competition on the Internet?	3. What kind of research is conducted by Polish researchers? 4. What research methods are used by Polish researchers? 5. What sampling criteria are used by Polish researchers? 6. What data analysis methods are used by Polish researchers?

Source: own elaboration.

The realization of the objectives of the study was possible thanks to the use of the content analysis method for the articles published in selected magazines. The selection of research material was two-stage. At the first stage, the available databases were analyzed through specifying the titles of Polish-language journals. It was assumed that research results published in scientific magazines would be analysed and popular scientific journals would not be taken into account.

The following criteria were used:

- the presence on the current list of scored journals of the Ministry of Science and Higher Education (the criterion of value on the basis of merit of the conducted research),
- the business subject matter of the journal – specialization in management and marketing,
- the availability of annual bound volumes for the years 2006–2011.

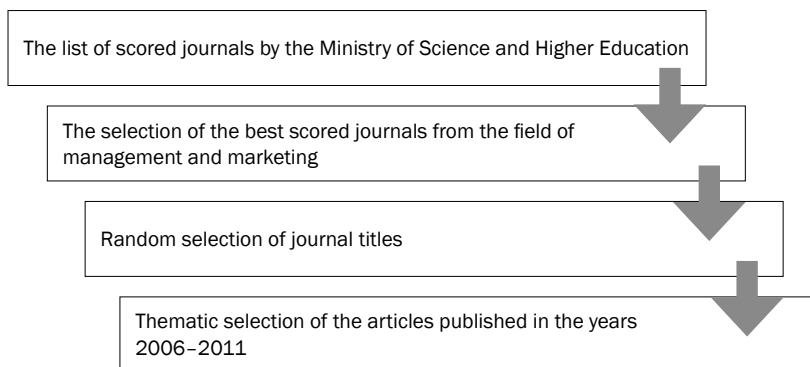


Figure 1. The selection of research material

Source: own elaboration.

It was decided to analyse articles from the last 5 years (2006–2011). One of the reasons was the fact that during these years the Internet underwent a transformation. This change, known as Web 2.0, has brought about the development of social media and led to qualitative changes in the ways of using of the Web, including business and promotional activities [Krain 2007, pp. 28–31]. The focus on the analysis of research material from this period allowed to identify new and significant research threads.

Next, out of the created database, two titles of journals were purposely selected. The review of the collected material allowed to select the final list of 35 articles included in further analysis.

Table 2. The list of journals chosen for analysis

Subject matter	Analysed Polish-language journals	The number of analysed articles	The number of articles concerning the Internet
Business	Marketing i Rynek	515	19
Business	Przegląd Organizacji	747	16

Source: own elaboration.

It should be emphasized that in the case of the two analysed titles, the number of studies devoted to the companies' activities on the Internet was only a small percentage.

3. THE ISSUES CONCERNING THE ACTIVITIES OF COMPANIES ON THE INTERNET ADDRESSED BY POLISH RESEARCHERS

Quantitative and qualitative analyses had to be carried out in order to determine the regularities concerning the subject matter of studies conducted by Polish researchers. The following table provides the review of basic information about the analysed studies.

Table 3. Review Summary

Authors	Year	Journal	Subject matter	Detailed scope	Type of research
Bartmańska. M.	2009	MR pp. 7-14	Methodology of research on the Internet	Characteristics and possibilities of using the ethnographic method in online research	TA
Brzozowski M.	2007	PO pp. 7-11	Model and organization of activity on the Internet	Attempt to define the concept and typology of virtual organization	TA
Chodak G.	2010	PO pp. 40-43	E-commerce	The importance of electronic commerce, the possibilities of using the Internet to sell on a global scale	RR TA
Fedorowicz E.	2009	MR pp. 30-37	Promotional activities	The analysis of possibilities of development of online advertising in comparison to its other forms (offline) during crisis	RR
Fedorowicz E.	2009	MR pp. 35-41	Promotional activities	The specificity of blogs as an online advertising medium.	RR
Frąckiewicz E.	2007	MR pp. 31-33	E-consumer	The characteristics of Internet users over 60 years old	OR
Frąckiewicz E.	2007	PO pp. 43-45	E-consumer	The characteristics of consumers of services based on the use of ICT	TA
Frąckiewicz E.,	2009	PO pp. 41-43	E-consumer	New technologies as a source of value or market discrimination of the customer	TA
Grzegorzczak W., Sibińska A., Krawiec W.	2010	MR pp. 35-39	Functionality of web pages	Polish customers' expectations of the functionality of websites on the financial services market	OR
Grzegorzczak W., Sibińska A., Krawiec W.	2008	MR pp. 29-35	Functionality of web pages	The analysis of the functionalities provided by websites on the financial services market in 1998-2006	OR
Grzegorzczak W., Sibińska A., Krawiec W.	2007	MR pp. 23-29	Functionality of web pages	The identification of functionalities of websites on the financial services market	TA
Jaciow M.	2011	MR pp. 27-34	E-consumer	Purchasing behaviour of an e-consumer - research methodology	OR
Jelonek D.	2006	PO pp. 68-72	E-commerce	Theoretical and practical aspects of risk in electronic commerce	TA

Authors	Year	Journal	Subject matter	Detailed scope	Type of research
Kaczmar I.	2010	MR pp. 25–30	Promotional activities	The principles of SEO on the Internet in the opinion of practitioners	OR
Kaczmar I.	2009	MR pp. 30–31	Promotional activities	The functioning of Internet services which cause certain actions supporting the promotion (redirection, click)	OR
Kaczmarek-Śliwińska M.	2006	MR pp. 31–35	Promotional activities	The use of Public Relations by public universities in Poland	OR
Kelm M.,	2008	PO pp. 65–69	E-commerce	Comparative analysis of e-commerce in Poland and in the European Union	OR
Komańda M.	2011	PO pp. 31–34	Methodology of research on the Internet	Ethical standards in qualitative research and problems in the context of their implementation on the Internet	TA
Komańda M.	2010	PO pp. 36–39	Methodology of research on the Internet	The discussion of the selected problems of qualitative research on the Internet	TA
Krain K.	2007	MR pp. 28–31	Promotional activities	The overview of the basic forms of promotional activities on the Internet	RR
Łazowska-Widz K.	2008	MR pp. 25–29	Creating content / knowledge sharing	The possibilities of using the phenomenon of content creation on the Internet from the perspective of marketing	TA
Mróz M.	2008	PO pp. 42–45	Model and organization of activity on the Internet	Characteristics of e-business in virtual space	TA
Najda M.	2007	PO pp. 24–28	Model and organization of activity on the Internet	The definition of virtualization of organization in the categories of the process. The formulation and verification of the method for measuring virtualization	OR
Pizło W.	2008	MR pp. 11–21	Marketing mix on the Internet	The theoretical basics of marketing activities on the Internet	TA
Polasik M., Wiśniewska A.	2007	MR pp. 20–27	E-services	The motives and aims of using electronic services by commercial banks in Poland	OR
Polowczyk J.	2007	PO pp. 37–40	Creating content / knowledge sharing	The overview of the book by D. Tapscott and A.D. Williams on Wikonomics	RR

Authors	Year	Journal	Subject matter	Detailed scope	Type of research
Romaniuk K., Kosmowski G.	2009	MR pp. 23–28	E-commerce	The description of online auctions – an element of e-commerce in Poland on the example of Allegro	OR
Rudawska I.	2010	MR pp. 8–15	E-services	E-health, the possibilities of providing e-services on medical services market	OR
Sanowska A., Wańtuchowicz M.	2007	PO pp. 35–37	Model and organization of activity on the Internet	The study of virtual organization as a separate configuration of other management concepts	OR
Tomaszewski A.	2009	PO pp. 19–22	Model and organization of activity on the Internet	The genesis, characteristics and business inspirations with the open source model	TA
Unold J.	2010	PO pp. 41–44	Methodology of research on the Internet	The outline of the concept of Web 2.0 with an indication of the key social aspects and organizational – informational potential	TA
Wirkus M., Wilczewski S.	2006	PO pp. 39–42	Functionality of web pages	The description of horizontal information portals	RR TA
Wojciechowski T.	2009	MR pp. 3–6	E-commerce	The description of the potential of the Internet as a distribution channel	TA
Zarębska A., Sobka M.	2006	PO pp. 24–27	Model and organization of activity on the Internet	The intangible assets of a company (including identity) as a source of competitive advantage	TA
Zdonek I.	2007	MR pp. 8–13	Promotional activities	The application of the hierarchy model of consumer's reaction to marketing message on websites	TA

Type of research: TA (theoretical analysis), OR (own research), RR (review of the results of collective research)

Journal: MR (*Marketing i Rynek*), PO (*Przegląd Organizacji*)

Source: own elaboration.

The review of the subject of the analysed articles allowed for selecting final analytical categories used in quantitative analysis (Figure 2).

The results of the analysis showed that most publications were devoted to the subject of *promotional activities*. The next subject area, which is very often presented in articles, is *the model and organization of activity on the Internet*. Even though the range of instruments used for promotional activities on the Internet is wide [Kaznowski 2008; Mazurek 2008; Maciejowski 2003],



Figure 2. The subject of studies conducted by Polish researchers in the analysed period (2006–2011)

Source: own elaboration.

in most cases the analysed articles on promotional activities referred to the issues connected with online advertising (its different forms and reactions to them). One study concerned PR activities on the Internet.

The analysis of the second most commonly present subject area i.e. *Model and organization of activity on the Internet* allowed to conclude that more than a half of (4 out of 6) the studies in this area is connected with the characterization of virtual organization or virtual space. The paper on the open source model refers to one of different business models which are implemented through the use of the Internet. The importance of intangible resources in the information society, which was mentioned in the theoretical part of this study, is reflected in raising this issue on the example of the identity of a company as a source of competitive advantage.

The diversity in subject matter depending on the title of the journal was noticed. Slightly more papers appeared in the *Marketing i Rynek* journal. All papers devoted to the development of promotional activities were published in this journal. In the *Przegląd Organizacji* journal however, *Model and organization of activity on the Internet* (6 cases out of 16) was the most often raised subject which was not present in *Marketing i Rynek*.

Most papers concerning the Internet were published in 2007 (10 cases out of 35), which may result from the visible growth of interest in the Internet of business and scientific environments (Figure 3). The second year in which a relatively large number of studies appeared was 2009 (8 articles out of 35). In both cases, the subject of articles was primarily devoted to *Promo-*

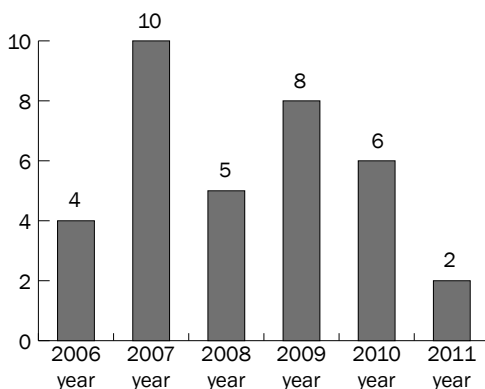


Figure 3. The number of studies conducted by Polish researchers in the analysed period (2006–2011) in an annual cross section

Source: own elaboration.

tional activities and *Model and organization of activities on the Internet*. The smallest number of articles on activities on the Internet was published in the examined sample in 2006 and 2011 (only the first 5 months of this year). It should be noted that it was observed that none of the subject areas was examined each year. Surprisingly, the subject of content creation / knowledge sharing was raised only in the years 2007–2008.

As part of the analysis, an attempt was made to identify and categorize the subject area of the studies published in the analysed journals. It was decided to determine whether these studies indicate the competitive aspect of the Internet or cooperation. After rejecting the content, in which it was not possible to identify the categories of activities, 27 papers were included for further analysis. The distribution of their categories is shown in the following figure (Figure 4).

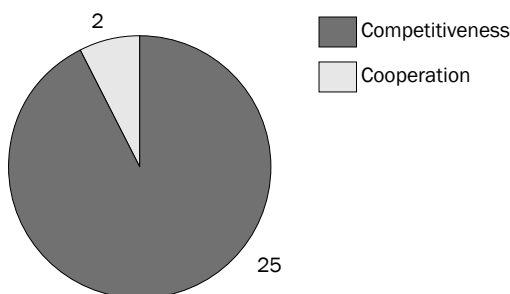


Figure 4. Type of strategy of operations examined by Polish researchers

Source: own elaboration.

The data analysis showed that Polish researchers most often raise issues which allow to compete effectively on the marked through operations on the Internet. Only in the case of two papers, the topic of cooperation among business entities on the Internet was emphasized.

4. THE RESEARCH METHODS CONCERNING THE ACTIVITIES OF COMPANIES ON THE INTERNET USED BY POLISH ACADEMICS

In characterizing the methodology of research on the activities of companies on the Internet, the attention was paid to the type of research, research methods and the principles of sample selection. This approach is the result of the stages of a research process in social sciences [Babbie 2005; Frankfurt-Nachmias, Nachmias 2001].

There are many classifications of research in marketing research. Classifications used in the analysis were based on the type of sources (primary and secondary research), the type of data (qualitative and quantitative research) and geographical coverage (national / domestic and international research) [Kędzior, Karcz 2001].

From the conducted analyses, it appears that field research is dominant in the area of research into the Internet by Polish academics (Table 4). The articles which presented authors' own research were a minority in the examined sample (13 out of 35 cases). Among the articles based on the secondary data (22 cases), the majority of them was strictly theoretical. Part (3 – *Marketing i Rynek*, 3 – *Przegląd Organizacji*) included the review of the available research results from the Polish and English language reports.

An attempt was made to determine whether there is a connection between the subject area and the authors' tendency to conduct their own research more often. Two areas without any papers containing field research were distinguished. They include *Methods of research on the Internet*, and *Marketing mix on the Internet* and *Knowledge sharing on the Internet*. While in the first category it is in part connected with the specificity of the distinguished analytical category (recommendations how to examine), the analysis certainly indicates the need for research on knowledge sharing. Among the analysed articles, there was not any complete example of research

Table 4. The type of research presented in the articles vs. thematic categories with the division into journals

Thematic categories	Marketing i Rynek		Przegląd Organizacji	
	Field research	Desk research	Field research	Desk research
E-commerce	1	1	1	2
E-consumer	2			2
Functionality of web pages	2	1		1
Promotional activities	3	4		
Marketing mix on the Internet		1		
Creating content / knowledge sharing		1		1
Methods of research on the Internet		1		3
E-services	2			
Model and organization of activity on the Internet			2	4
Total	10	9	3	13

Source: own elaboration.

concerning the activities within all instruments of marketing mix. However, among the analysed articles, there were two containing raw data which related directly to the subject of e-services (i.e. one component of marketing mix).

Polish academics focus on quantitative research (100% of the presented results). Only one case of qualitative studies was reported but it was a complement to the quantitative research results.

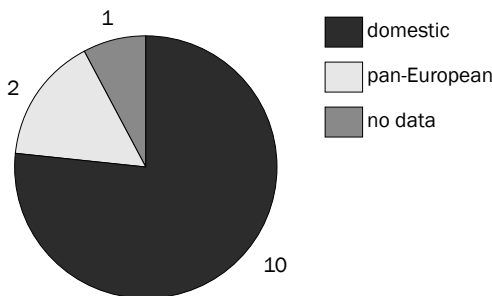


Figure 5. The structure of the research conducted in the analysed period – the geographic scope

Source: own elaboration.

From the analysis of the data, it appears that Polish researchers focus mainly on the domestic market (10 cases – 77%) (Figure 5). In the case of one article, it was not possible to identify the geographical coverage suggesting the research was not conducted abroad. In the case of two articles, the research was conducted in at least two European countries.

Another issue arising from research methodology is proper selection of the research method. It was decided to determine what methods / research techniques were used to conduct the published studies and whether or not they were carried out on the Internet.

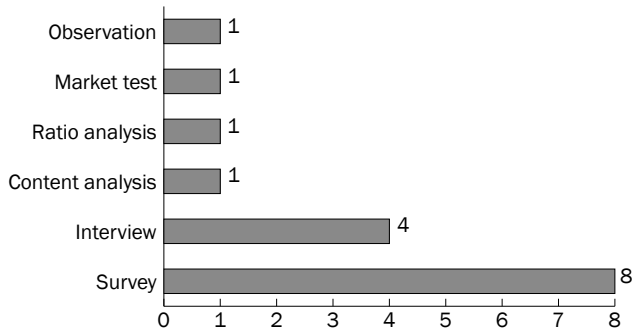


Figure 6. The applied research methods in the analysed articles from the years 2006–2011

N = 16, dichotomous question

Source: own elaboration.

The conducted research is mainly based on a survey (8 cases, which is 62% of the sample) (Figure 6). There were also attempts to use other research methods. One of the cases referred to the use of simulation (market test) concerning an imaginary portal. The content of websites was analysed by content analysis. The only qualitative method used was observation.

The Internet creates much greater opportunities to use research methods and techniques. None of the analysed cases used the experimental approach. Polish researchers did not pay attention to an increasing number of possibilities of conducting research with the help of qualitative methods (e-focus group or netography).

In one case, the research was of an econometric nature (it went beyond the methodology of marketing research). It referred to the analysis of statistical data.

In most cases, the analysed research did not include triangulation [Boksar 2009, p. 2]. Only in two cases, one could notice methodological triangulation between methods. The research combined a questionnaire and an interview. In one case, the mixed method was used, which means quantitative and

qualitative methodology was applied in the research. Quantitative data were supplemented with qualitative research as part of the sequential design. The use of the mixed method approach seems to be correct because it allows to maximize the use of information and data as well as to ensure the accuracy of the research [Boksar 2009, pp. 2–6].

The majority of the studies was conducted outside the Internet. In 5 cases, online research was used. One case concerned the study of the content of web pages of a historical nature (thus, it was qualified for offline research). In 9 cases, the research was conducted outside the Internet (these were probably surveys or interviews).

The conducted online research referred to the data collection from individuals (Internet users – in 2 cases) and the conducted market test with the use of a web page. In the case of the research on institutional subjects, the research was conducted outside the Internet (5 cases). What is important is that individual respondents were surveyed outside the Internet and in each of the two reported cases it resulted from the age of the respondents (sample 60+ or defined as 15–80).

All surveys were carried out on the basis of the authors' own research questionnaire.

As part of defining the principles of research methodology, attention was paid to the principles of sample selection. The aim was to find out what principles were used when recruiting individuals for research, who the subject of the research was, how big the sample size was and what sample selection methods were applied.

From the conducted analyses it appears that in most cases the sampling was of a non-random nature (7 cases – 54%). It is important that in 5 cases it was impossible to identify the sampling selection method on the basis of the data included in the article. In one case, it was said that the sample was of a representative nature (estimations based on stratified sample selection) (Figure 7).

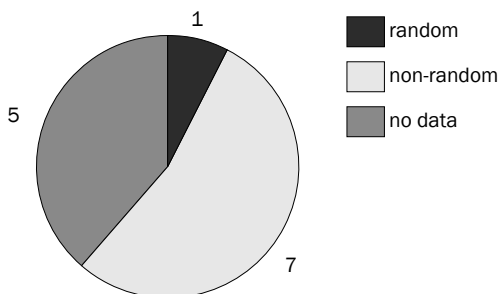


Figure 7. The research methods applied in the analysed articles from the years 2006–2011

Source: own elaboration.

The analyzed articles did not contain information about the databases which were used in the research. The basic parameters concerning the data confidence level and the acceptable statistical error were not estimated.

In the absence of the principles of sample representativeness, the sample size used by the Polish researchers was determined. Obviously, it depends on the research subject. In the case of the research on institutional subjects, the average sample size is 38 respondents. It should be noted that in the case of surveying this category of subjects, the researchers paid attention to the large percentage of refusals to participate in the study.

In the case of individual respondents, the average sample size for national surveys was 1298 people and it should be noted that this is due to the large diversity (the smallest sample – 168 respondents, the largest – 4314). The research of the pan-European scope included (1 case) 7934 respondents.

Among the analysed articles presenting primary research, 6 of them used the simple statistical analysis – percentages and frequencies – to present data. Similarly, six articles presented data which were analysed with the use of more advanced statistical methods (chi-square, Conjoint analysis, AHP method). The case of one article was specific – it presented research methodology by referring to the report which was not published in the study.

5. DISCUSSION, LIMITATIONS AND FURTHER RESEARCH

The results of the analyses indicated the advantage of theoretical studies. It therefore confirmed that there is not any issue (concerning companies' activities on the Internet) which is presented in Polish scientific literature which is mostly based on the results of primary research. It indicated the need to conduct the authors' own research. The presented results showed that the greatest interest among researchers was aroused by the subject of promotional activities. What is important is that most studies focused on advertising activities without including other instruments, especially those developing through social media. Thus, the possible area of research is, on the one hand, the focus on effectiveness of advertising but, above all, directing attention to the remaining possibilities, such as, viral marketing, SEO or online WOM.

The research thread which was represented only in the sphere of theoretical studies was the question of co-creating content on the Internet, that

is to say, the dominant activity in Web 2.0. When referring to the analogical scope of research in western literature, it is important to focus the interests of Polish researchers on a widely understood concept of crowdsourcing and using the potential of subjects willing to share their knowledge.

An important aspect of any research is connected with appropriate methodological assumptions. In most cases, the analysed articles included descriptive research not designed to test the dependencies included in hypotheses. Moreover, the most frequently used methods were a survey and an interview. Probably, this is due to the nature of the research. However, what is disappointing is the lack of advanced research models that require a compilation of many methods and allow to arrive at more accurate and reliable conclusions.

One should remember, however, that the presented analysis does not show the whole research area of Polish academics. It concerned only a narrow sample. The conclusions are distorted by the selection of research material. They should be regarded only as an indication of certain tendencies. It is important to extend the analysis to the studies published in the journals of lower reliability (of lower scoring) which are available to the majority of Polish researchers.

It is also worth noting that a significant number of materials on the activities of the companies on the Internet, both in terms of competition and cooperation, are present in the form of popular science papers or practical analyses. These studies cannot be completely ignored in reflecting on research because they are often the first attempts to identify, describe and (unscientifically) analyse the phenomena which are at an early stage of development and, thus, are not subject to scientific (theoretical and empirical) verification. Instead, they can be scientists' inspiration to explore new and interesting research threads.

The limited advantages of the conducted analysis result from the presentation of fragmentary information on the methodology of the conducted research. This situation forces the demand for the introduction of some standard of the presentation of the principles of research methodology allowing for self assessment of research results and continuation of the research within a given subject area.

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