

QUALITY ASSESSMENT OF SELECTED BOOKSELLING WEBSITES

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Abstract: The purpose of this article is to evaluate and select websites in Polish book sector with regard to quality measured by their usefulness for an individual client. First, the author has presented characteristics of the sector and basic methodological assumptions of the study. Next, he has conducted evaluations by means of a simple scoring method, a scoring method with preferences and relational research using T. Saaty's AHP (Analytic Hierarchy Process) method. The findings have been analysed and the author has compared the results of the study. (JEL: L15,VL81, C88)

Keywords: e-business, internet bookshops, quality assessment, scoring methods, relational methods.

Introduction and methodological assumptions

From the moment of the emergence of e-business, books and associated products (films, music, etc.) are one of the most developed economic sectors. In the years 2005-2006 the percentage of Internet users buying books in the net reached 9-14%, in 2007 already 17%, and in 2008 it amounted to 18,8% [6]. The report commissioned by Money.pl portal and *Wprost* weekly shows that books were the most popular products involved in online purchases (about 46% of purchases made via the Internet) [5]. In 2009 9% of all internet shops dealt with selling books [4]. It is the most stable and developed sector which a few years ago created its leader, Merlin.pl; however, in the past few years we observe the emergence of its main competitor Empik.com, which until recently dealt mainly with traditional sale. The income of Merlin.pl shop amounted to 119m zlotys in 2008, with the number of orders exceeding a million, served by 194 employees. In 2008 Empik.com reached an income at the level of 85m zlotys, with about 850,000 orders [3]. Among a group of bookshops whose income comes mainly from selling books, and not simultaneously from publishing them, we can distinguish Gandalf.com.pl (7.5m zlotys of net profit in 2008 and 74,500 orders) in the third position, Wysylkowa.pl (4m of net profit); Lideria.pl (3.89m); Mareno.pl (2.5m); Poczytaj.pl (2.25m); Inbook.pl (2m); Zlotemysli.pl (1.75m); Petlaczasu.pl (1.5m). In 2008 other bookshops made profit below 1m zlotys.

Taking into consideration a large scope of activity and great importance of the book sector for the development of electronic economy, the author has carried out several studies into this sector in the Internet [1, 2]. The present research is incomparable with the earlier studies due to organisational changes in the book market (liquidation, mergers and establishing new bookshops), changes in the evaluation criteria resulting from the author's broadening experience

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in websites' evaluation as well as more and more sophisticated formal methods applied in the assessment. It appears that websites are changing as well - with regard to their technical and organizational features as well as the strategies they employ in their communication with clients and marketing or sales economic policy. The aim of this research is to identify a website which would be optimal from the point of view of an individual client and also to order the examined websites according to a decreasing degree of website's fulfilment of the total of particular criteria. In order to solve this problem the author applied the points of view of a few methodologies: a sole scoring (ranking) method, a scoring method with preferences and T. Saaty's AHP (Analytic Hierarchy Process) method [8].

The first method used to solve the problem is a scoring evaluation method which consists in establishing a specific hierarchy of elements and their distances from the maximum possible score that may be obtained. The evaluation is performed as a result of applying an established scale. The hierarchy is characterized by an ascending or descending order presenting the degree of the realisation of a global criterion that encompasses all subcriteria. On the basis of the obtained scores the author prepares a ranking. Additional advantages of this method are: its simple and understandable construction, short time needed for its realisation and low costs of the research. We may distinguish between single-criterion and multi-criteria rankings (basic – up to 10 criteria, or complex – more than 10 criteria). It relies on establishing the importance of a particular object in a given group, with regard to the applied criteria set. The result of the scoring method is arranging objects to establish the order or priority. However, a decision aspect that appears may cause some problems, especially when the analysed elements are difficult to measure. Nevertheless, the method of information ranking is becoming a crucial issue for human functioning. The basis for the effectiveness of the method is reliable measurement of objects. Features selected for analysis need to possess model attributes, best describe the object or its diversity from the point of view of the presented decision-making problem. We can initially assume that features-criteria are of equivocal importance. However, in the event of quantitative dominance in specifying one kind of features, the result of the comparison may prove insignificant. In such a case we introduce additional preferential ordering, assigning a higher weight to selected features which are more important for some reason. Using a given criterion allows us to achieve our target when we observe a greater role or share of the criterion in the situations facilitating functioning of a given system. Moreover, some of the important advantages of this method are: lack of necessity of working under assumptions concerning population distribution, lack of influence of large differences in observations on the results, a possibility of comparing quantitative, qualitative and value features simultaneously as well as relative ease of interpretation.

A ranking method belongs to a group of hierarchical linear methods. The second category of methods, which are useful in the selection of decision variants after their earlier ordering, is a group of relational methods consisting

in establishing converse mutual relations of compared elements. The most popular method of such kind is the AHP method, the analytic hierarchy of (decision-making) process. In this method we may distinguish two preparatory stages, i.e. hierarchical superior establishing of relative criteria dominance obtained from pairwise comparison and calculating a relative dominance of particular objects due to subsequent criteria, and one analytical stage. The last stage relates to calculating synthetic evaluations ordering objects and a subsequent analysis and interpretation of scores.

In the method we usually apply a simplified Likert evaluation scale from 1 to 9. Evaluation consistency in pairwise comparison is controlled by an inconsistency index. The usefulness of AHP method may be observed in the case where there appears a hierarchy of evaluation criteria representing various levels of particularity; it is connected with a hierarchy of objectives and expected benefits. The AHP method appears to be useful when data used for the analysis are of qualitative, and just quantitative, character; evaluations represent a subjective point of view of a person who conducts the analysis. However, we should note here that in this case variants have to belong to the same class, due to their full comparability. Generally, these are almost the same conditions which need to be met to achieve success during applying the previous group of methods. This method is difficult to apply by experts and it is very labour-intensive, relativism among quantitative and qualitative factors is sometimes very difficult to grasp and it enforces taking additional steps, and results of pairwise comparison depend, even more than in the previous group of methods, on the subjective evaluation provided by an expert. In the case of scoring methods, experts present their evaluations, taking into consideration their own impressions concerning the degree of a realisation of a given criterion feature in the object, as if separately from other objects; in the case of relational methods, they take into account the diversity of its realization in particular objects (the hierarchy of relations among objects is established earlier). In scoring methods relations among criteria may be imposed externally in the form of a preference vector; in relational methods they are also calculated as a preference vector from a dominance matrix. There are many similarities between the analyzed methodologies; however, the interpretation of the results of AHP method is much more difficult. Also, neither of them takes into consideration correlation dependencies among criteria; T. Saaty attempted at an interpretation and generalization of AHP method in 2001 presenting an ANP (Analytic Network Process) method [7].

A specific character of an internet bookshops' activity consists in easy distribution of the durable, non-perishable products, low transport costs and little risk of damage in transit. Moreover, it is characterised by generally good quality of customer service, which is influenced by a number of factors e.g.: quick and professional service offered by helpline or employees answering emails, and also good quality of the descriptions of offered goods. Another characteristic

feature of the sector is a high level of customer care in relation to regular customers, reflected in considerable benefits from loyalty schemes and bonuses for large value orders. The websites save customers' time, for instance, by offering a possibility of getting acquainted with the content of the book they are interested in, presenting its list of contents or a selected extract. As a result of the above, it is easy to decide whether the product is the one we were looking for, which saves the time of a customer as well as a seller. The character of such activity allows bookshops to meet clients' needs more easily, and the realization of the needs is possible owing to the use of conducted statistical analyses (e.g. hit counter, recent history of purchases). We can distinguish two kinds of internet bookshops: horizontal and vertical. The first kind offers a wider and more generally-oriented product range, aimed at a diversified group of clients. These are mainly e-bookshops offering books of various suppliers. Vertical shops, in turn, offer a narrower and more specialised product range, often of a niche character, aimed at a specified group of clients. Good examples of this kind of shops are specialist publishers, for example: specializing in economic, philosophical, business areas or children literature. A website is one of tools used to conduct sales. An important element of the activity of this tool is the ease of searching goods which may be further improved by creating thematic categories for a range of products. They function as a map of categories (e.g. books, multimedia, stationery products and gifts). The issue of constructing a website according to generally applied principles of running a good internet shop in the net is equally important. Among the principles we need to mention: paying attention to correctly functioning tools which are used to place orders or to realize the purchasing process; technical solutions allowing for using a proper colour scheme, a correct typography, an intuitive and user-friendly navigation, etc.

In the presented studies the author considered ten most popular bookselling websites emerging from the ranking of e-Money and *Wprost* (November 2009) [4]. The websites were: Merlin.pl, Gandalf.com.pl, Empik.com, Taniaksiążka.pl, Swiatkiazki.pl, Lideria.pl, Zlotemysli.pl, Poczytaj.pl, Petlaczasu.pl and Inbook.pl.

The evaluating panel consisted of three experts – frequent users of bookselling websites. In other words, the research has been conducted from a point of view of a client of a website. Experts established and agreed upon a set of criteria according to which the study has been carried out. Research to date [5, 6] has prompted the author to limit the selection to four groups (of criteria), influencing efficient functioning of e-business: usability of a website, its innovativeness, promotional methods in the Internet as well as economic aspects related to sales of products and services.

Consequently, the following detailed measures have been applied:

- functionality of a bookselling website: loading and displaying performance, colour scheme, typography, background, graphics, aesthetics, clarity of presentation, the ease of realisation of particular functions, compatibility with various web browsers and operating systems, product range

and the aptness of its presentation, a possibility to select a product range (search facilities/ site maps), data and ways to contact a bookstore, help functionality on a website,

- innovativeness – introducing new or markedly modified services or ways of communication with a client, marketing etc. as compared with other websites of the sector,
- marketing – presence in web search engines, presence in internet portals, positioning,
- economic aspects – prices of selected products as well as discounts and special offers, payment methods, conditions and costs of delivery.

The selection of criteria is somewhat limited in relation to the previous ones, but the book sector in the Internet is characterised by high quality, and, as a result, some of quality coefficients demonstrate similar effects which may be difficult to compare. Therefore, the author concentrated mainly on those features which differentiate particular websites.

For the preliminary scoring evaluation the author has applied a standardised scoring scale which was applied in earlier website evaluations: 1.00 – very good (complete criteria fulfilment, the most user-friendly system, the most attractive offer and the lowest costs); 0.75 – good (almost complete criteria fulfilment); 0.50 – medium (partial criteria fulfilment with medium costs); 0.25 – sufficient (satisfactory criteria fulfilment and high costs), 0.00 – insufficient (lack of criteria fulfilment, the highest costs).

Characteristics of selected bookselling websites

According to previously established assumptions, each of the three experts has performed an evaluation of the selected bookselling websites in the four specified groups of criteria.

In terms of functionality, the first item which has been evaluated was loading and displaying performance. The tests which were carried out have not pointed out any significant differences in loading and displaying of the examined websites in the case of broadband connection. The differences – in seconds – appear in the case of using a modem - 15 seconds. When we use a connection with the speed of 128 kbit, the estimate time of displaying a website is about 10 seconds, Neostrada offering a transfer speed up to 320 kbs allows for loading a website in 6 seconds, and in the case of the one with the speed of 2 Mbit a website is loaded in 1-3 seconds. This parameter is also influenced by the quality and design of a website, mainly the quantity, size and visualisation of graphic elements, especially dynamic ones (animations). The correctness of scripts may be verified by means of any website analysing the reasons for low responsiveness of a website in the net (e.g. <http://websiteoptimization.com/>). The second important category is visualisation, which comprises mainly: colour

scheme, typography, background, graphics, aesthetics and clarity of the presented content. The analysed websites fulfil the basic assumptions of the proper website design with regard to the colour scheme of background and graphic elements on a page, the size and contrast between background and typography as well as appropriate content. The description of a product range and the aptness of its presentation bear some resemblance to the previous sector. A standard in the sector is full compatibility with all available web browsers and operational systems. Gandalf.com.pl internet bookshop is a website which distinguishes itself in the analysed group by a pleasant, warm brown colour. Users' view is that, in this regard, it outpaces even the websites which are leaders in the ranking. Search functionality is a feature necessary in every internet bookshop. The main element which differentiates the websites is the position of the search function on a webpage. If we assume that, according to guidelines of website designers, it should be placed in the top right corner (because users' attention focuses on this area just after looking through the menu), then we may note that none of the bookshops has placed its search functionality in the proper place. In the majority of cases it has been located on the top of the page, in the middle of the website. Some websites placed it in the opposite place. Swiatksiazki.pl, Zlotemysli.pl and Poczytaj.pl have located its search functionality in the top left corner. A site map, another tool that makes navigation easier, plays a similar role to search functionality since it allows for quick access to selected sections and subpages with particular products. Empik.com, which has placed its search functionality on the top of the page, has received the highest score among the selected websites. Another advantage of websites is presenting a few options for clients to contact an internet shop. Petlaczasu.pl e-bookshop presented the worst offer with regard to contact information displaying only an e-mail address. Other websites presented more satisfactory contact data, offering a few options to select from. We should note that all selected bookshops passed the test of e-mail contact with very high scores – they replied within 24 hours. The last of the analysed functionality aspects is help concerning navigation in a website and clearing up confusion related to operating its functions: this functionality usually displays a clear description of realization of operations available on a website. The study shows that the analysed websites presented a well-constructed help functionality for clients. The lowest score has been obtained by Lideria.pl due to poor help service available on the website. However, we should note that the category of functionality does not introduce any special differences between particular e-bookshops, because all of them use similar tools to design websites and similar experience of dealing with clients.

A markedly greater discrepancy between websites can be observed with regard to innovativeness. It refers to new solutions which are supposed to distinguish a particular website from other bookshops, a feature which depends on human creativity and resourcefulness.

The following points should be noted with regard to websites' innovativeness:

- sending a Newsletter with a chance of winning a book every week, personalisation of customer service, discount for learning a foreign language, collecting points which can be exchanged for free books, audio books, a possibility of using a bookmark – *Pomysł na prezent (Gift Suggestion)*, news related to literature (Gandalf.com.pl bookshop).
- discounts amounting to 80%, the biggest discounts for the bookshop's readers club members, a possibility of developing photos or purchasing flowers (Inbook.pl bookshop),
- bookmarks with extracts from books, *Junior* section for children and youth, gift centre, Swiatksiazki.pl club, celebrity recommendations, special guest star on a website, a movable bar with literary information and quizzes (Swiatksiazki.pl bookshop),
- specialisation in the area of business, “*Złoty Klub/Golden Club*” Readers' Club, free e-books, discounts up to 25%, *złote punkty/golden points* (Zlotemysli.pl bookshop),
- stationery articles, imported goods, special offers, Empik.com photo, gift cards, Empik.comlopedia, Empik.comultura, Empik.com school and a highly developed site map, shortcuts to webpage on the desktop where clicking on the shortcut opens a shop webpage (Empik.com bookshop),
- gift vouchers, help functionality (*W czym mogę pomóc/How can I help you*), a possibility of a fast selection of a gift using a division into age group categories, a possibility of buying cosmetics, *Wish list*, developing photos and a possibility of personalisation of a customer's profile (Merlin.pl bookshop),
- a possibility of buying tea or reproductions apart from typical products (Poczytaj.pl),
- a loyalty scheme and a survey (Taniaksiazka.pl bookshop),
- *szybka książka/fast book*, FAQ (Petlaczasu.pl bookshop).

It is worth noticing that some of the presented innovativeness subcriteria refer to typical promotional qualities, one of marketing elements. Marketing of websites has been considered from three points of view: presence in search engines, presence in portals and positioning. The most commonly used search engines are: google.pl, szukaj.wp.pl and MSN.com. At first, the author has checked the presence of the examined bookselling websites in particular search engines. In the case of using google.pl and MSN.com almost all bookselling websites have been placed in the first positions. However, in szukaj.wp.pl: Inbook.pl, Swiatksiazki.pl, Zlotemysli.pl and Petlaczasu.pl have appeared in subsequent

positions. The second experiment conducted here was the presence of bookshops among the first fifty positions of search results. Next, the author checked the presence of websites in the first fifty results. The verification has been conducted by entering subsequently two basic keywords referring to the sector: *bookshop* and *books*. In the first case in Google Gandalf.com.pl, Inbook.pl, Swiatksiazki.pl, Empik.com and Merlin.pl appeared on the first page, Petlaczasu.pl on the third, and Poczytaj.pl on the seventh page. In the search engine szukaj.wp.pl Gandalf.com.pl bookshop was on the first page and Swiatksiazki.pl on the tenth page. When using MSN.com Gandalf.com.pl and Poczytaj.pl were displayed on the first page, Inbook.pl on the third, the remaining ones were beyond the first ten pages of search results. In the second case in Google: Inbook.pl, Swiatksiazki.pl, Empik.com and Merlin.pl were on the first page, Gandalf.com.pl appeared on the fifth page, Petlaczasu.pl on the nineteenth and Lideria.pl on the twenty-sixth page. In szukaj.wp.pl search engine Gandalf.com.pl appears on the first page, Merlin.pl on the sixth and Petlaczasu.pl on the eighth. Other bookshops are beyond the first fifty search results. In MSN.com search engine Gandalf.com.pl and Inbook.pl were on the first page, Swiatksiazki.pl on the tenth, remaining ones were beyond the first ten pages of web results. Equally important element of evaluation is registering websites in the catalogues of the most popular Polish portals. It appears that all bookshops are registered in the catalogues of Onet.pl, WP.pl and Interia.pl.

The last considered group of criteria are economic criteria (prices of selected products, discounts and special offers, payment methods, conditions and costs of delivery). In the price analysis the author considered ten most popular books from November 2009. In the case of this evaluation it was difficult to compare Zlotemysli.pl with other bookshops, because it specializes exclusively in selling scientific books. We can observe marked differences in the price of the same item in particular bookshops. The differences amount to even 10 zlotys. Gandalf.com.pl bookshop offers the most attractive prices of best-selling books (subsequent positions are taken by Taniaksiazka.pl and Poczytaj.pl). As this comparison demonstrates, Empik.com and Petlaczasu.pl have the highest margins on the most recent titles. The differences we observe in the prices of items are levelled slightly by special offers (rare in relation to the most popular books) and discounts for club members. It seems that the policy behind the activities of some bookshops is quoting a relatively lower price of a book with a higher cost of delivery.

Methods of payment and modes of delivery seem important in the cases where they are connected with discounts or reductions in prices. In some shops a customer can collect his or her goods personally, without the need to make a payment for delivery. Merlin.pl introduced a specific policy with regard to such payments: it is possible only in the case of a purchase exceeding 50 zlotys. There is a possibility to make payments in cash, by credit card or pay with a gift voucher which you receive from the bookshop when you collect ordered products

in a point-of-sale (a shop, salon or warehouse) chosen by a client or a seller. The second way is collecting the order and paying a worker of Polish Post (Poczta Polska) or a courier who deliver the parcel with books to the reader. A third method of payment is an electronic payment in the form of a bank transfer or a payment made by a payment card.

Table 1. Comparison of the prices of selected books in the analysed internet bookshops

	Gandalf.com.pl	Inbook.pl	Lideria.pl	Swiatkisiadzki.pl	Zlotemysli.pl*	Empik.com	Mertin.pl	Poczytaj.pl	Taniaksiążka.pl	Pelaczasu.pl
R.Gosciny, J.Sempe <i>Nieznane przygody Mikolajka (Le Petit Nicolas. Le ballon et autres histoires inedites)</i> ,	28.40	30.99	28.90	31.20	0.00	29.99	28.34	29.39	29.49	31.00
A.Sapkowski <i>Zmija (Viper)</i>	28.75	30.99	29.10	31.90	0.00	30.99	30.39	29.07	30.11	32.50
M. Kalicińska <i>Miłość nad rozlewiskiem (Love by the Pool)</i>	30.11	31.99	32.10	33.10	0.00	32.49	31.83	30.90	31.29	34.00
C.L.Zafon <i>Marina (Marina)</i>	29.95	40.99	28.00	0.00	0.00	30.49	0.00	0.00	28.15	31.00
S. Larsson <i>Zamek z piasku, który runął (The Girl Who Kicked the Hornets' Nest/ Luftsloppet som sprangdes)</i>	43.03	38.90	42.40	44.90	0.00	39.90	39.90	44.61	44.75	48.50
J. Chmielewska <i>Porwanie (Kidnapping)</i>	31.89	33.99	34.00	33.20	0.00	33.99	31.49	33.04	33.15	35.00
J. Wallkenbach <i>Excel- najlepsze sztuczki i chwytaki (The Best Excel Tips and Tricks)</i>	44.48	49.00	0.00	0.00	49.00	0.00	0.00	47.04	44.10	0.00
J. Powell <i>Julie i Julia - rok niebezpiecznego gotowania (Julie and Julia: My Year of Cooking Dangerously)</i>	27.14	27.99	27.50	26.90	0.00	27.99	28.49	25.64	26.77	28.50
S. Meyer <i>Zmierzch (Twilight)</i>	25.79	25.99	28.70	37.90	0.00	36.99	27.08	33.68	26.83	28.50

C. Zafon Gra Aniola (The Angel's Game)	34.40	45.99	45.90	37.90	0.00	45.99	39.90	34.21	35.77	35.50
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Source: on the basis of websites of particular bookshops;

* scientific bookshop

Methods of payment and ways to collect products differ in particular e-bookshops. However, the factor which differentiates them the most are the costs related to purchasing books.

Analysis by means of a scoring method and conclusions

Summing up the scores obtained in the evaluation of realisation of particular criteria, we are able to create a ranking of the examined internet bookshops. A process of categorization consists in assigning positions to the objects according to the scores they received. It is simultaneously a valuating and differentiating mechanism: it can point to dangers or show positive models. Indirectly, we make a selection of a rational (optimal) solution from the point of view of the established set of criteria. The evaluation which has been carried out gives us a possibility to diagnose what is the present condition of websites and which variant is actually the best among the selected group. The criteria which have been applied belong to a group of valuating features and parameters. In the case of equivalent treatment of criteria, ordering consists in applying an ascending or descending scale. Not all criteria should and can be treated equivalently. If there occurs a significant quantitative differentiation in particular criteria groups, then the group which has more elements (evaluation subcriteria) is in a favourable situation. In such a case we may either standardize results assigning a score which, at most, is equal 1 (with 100% of realisation of a given feature) to a given criteria set or use an external preference scale. We could ask each expert individually to establish coefficients of the scale, or the experts may generate a scale which would be common to all of them as a result of a discussion. We multiply all partial evaluations by the scale coefficients (the total of which is equal 1) and we sum up the results. Usually, as a result of such calculations we arrive at variants with the advantage of economic or functional criteria.

During the examination of particular websites each expert, according to his or her subjective opinions, fills in the tables containing evaluations of partial criteria in groups of particular criteria. However, already at this stage, on the basis of the obtained results we can draw conclusions concerning shaping particular features in selected websites. The results presented below are the mean values of experts' evaluations with the application of a uniform preference scale.

The compilation above demonstrates that a half of bookselling websites fulfil functionality criteria in more than average degree. We need to realize that in this case it means realization of 85-90% of the maximum possible

functionality, and all websites, even those with lower scores, reached the index higher than 50% in this category. Here the definite leaders are: Empik.com (4.50), Gandalf.com.pl (4.33) and Merlin.pl (4.25). Contrary to preliminary opinions, the scores' diversification in this group of criteria was higher than it initially appeared, because it reached the value of 30 percentage points.

Table 2. Evaluation of the functionality in selected bookselling websites

Bookshops	Loading and displaying performance	Visualisation	Product range and information search	Contact information	Help functionality	Total score
Gandalf.com.pl	0.7500	0.8333	1.0000	0.7500	1.0000	4.3333
Inbook.pl	0.7500	0.8333	0.5833	0.9167	1.0000	4.0833
Lideria.pl	0.7500	0.4167	0.5833	0.8333	0.4167	3.0000
Swiatksiazki.pl	0.6667	0.6667	0.7500	1.0000	1.0000	4.0833
Zlotemysli.pl	0.7500	0.6667	0.5833	0.9167	0.8333	3.7500
Empik.com	0.7500	0.8333	1.0000	1.0000	0.9167	4.5000
Merlin.pl	0.7500	0.8333	0.9167	0.8333	0.9167	4.2500
Poczytaj.pl	0.6667	0.5833	0.6667	0.7500	0.7500	3.4167
Taniaksiazka.pl	0.7500	0.3333	0.7500	0.6667	1.0000	3.5000
Petlaczasu.pl	0.6667	0.5833	0.5833	0.3333	0.8333	3.0000
Mean value						3.7917

Source: Author's own work

Table 3. Evaluation of innovativeness in selected bookselling websites

Bookshops	Innovativeness
Gandalf.com.pl	0.8333
Inbook.pl	0.6667
Lideria.pl	0.5000
Swiatksiazki.pl	0.8333
Zlotemysli.pl	0.4167
Empik.com	0.8333
Merlin.pl	0.9167
Poczytaj.pl	0.6667
Taniaksiazka.pl	0.5833
Petlaczasu.pl	0.3333
Mean value	0.6583

Source: Author's own work

Generally, the companies operating in the book market have not surprised users with their innovativeness. None of them has received the highest possible number of points in this category. It is partly connected with difficulties related

to specifying the limits on the scope which this category defines. In general, experts treated them as an innovative approach, unusual solutions as well as a significant modification of the presently offered services. The researchers paid attention to the progressive innovativeness of internet marketing. In experts' views, the following factors should be noted with reference to websites' innovativeness:

- exceptionally easy access to literature of the bookshop's own series - Swiatksiazki.pl bookshop (collectors' club) and quick access to literature for children, divided into age group categories,
- service *Wish list (Lista życzeń)* – allowing for defining a wish list of an individual client, suggesting his or her friends or relatives what the person would like to receive. The client can send the list to friends or relatives, who may use the list to order a gift in the bookshop –Merlin.pl bookshop.

Thus, it emerges that the bookshops presented above together with Empik.com (due to its exceptionally modern additional non-standard functionalities: Empik.comlopedia, Empik.comultura etc.) proved to be the best in the category; Petlaczasu.pl and Zlotemysli.pl (30-40% of realization of the maximum possible functionality) turned out to be the worst.

Table 4. Evaluation of marketing of selected bookselling websites

Internet bookshops	Presence in web search engines	Positioning	Presence in portals	Total score
Gandalf.com.pl	1.0000	1.0000	0.8333	2.8333
Inbook.pl	0.8333	0.6667	0.8333	2.3333
Lideria.pl	0.8333	0.5000	0.8333	2.1667
Swiatksiazki.pl	0.8333	0.5000	0.6667	2.0000
Zlotemysli.pl	0.6667	0.3333	0.3333	1.3333
Empik.com	1.0000	1.0000	1.0000	3.0000
Merlin.pl	1.0000	0.9167	1.0000	2.9167
Poczytaj.pl	0.9167	0.5000	0.6667	2.0833
Taniaksiazka.pl	0.7500	0.3333	0.4167	1.5000
Petlaczasu.pl	0.8333	0.7500	0.3333	1.9167
Mean value				2.2083

Source: Author's own work

Internet bookshops seem to differ markedly in the case of an analysis of a marketing criterion. There are those that are well promoted and those which practically do not exist in websites and search engines. Empik.com and Merlin.pl definitely belong to the first category: after entering the word *bookshops* into a search engine they always appear on the first page. The third bookshop which receives over 90% of the maximum score is Gandalf.com.pl. Zlotemysli.pl and Taniaksiazka.pl receive the lowest scores in this category.

Economic aspects of running an internet bookshop are also strongly diversified. Not all bookshops offer clients a possibility to collect items personally; in the case of some it is impossible to pay by a payment card or an internet transfer on a bookshop's website. Not all of them display information concerning delivery time; also, not all modes of delivery are included in the offer. The cost of the delivery of a parcel is also much diversified.

Table 5. Evaluation of economic aspects of selected bookselling websites

Internet bookshops	Prices of selected articles and special offers	Methods of payment	Delivery terms and costs	Total score
Gandalf.com.pl	0.8333	0.9167	0.9167	2.6667
Inbook.pl	0.5833	0.9167	0.7500	2.2500
Lideria.pl	0.5000	0.6667	0.5833	1.7500
Swiatksiazki.pl	0.5833	0.9167	0.5000	2.0000
Zlotemysli.pl	0.5000	0.6667	0.7500	1.9167
Empik.com	0.9167	1.0000	1.0000	2.9167
Merlin.pl.pl	0.9500	1.0000	1.0000	2.9500
Poczytaj.pl	0.6667	0.6667	0.6667	2.0000
Taniaksiazka.pl	0.5833	0.4167	0.5833	1.5833
Petlaczasu.pl	0.4167	0.4167	0.5000	1.3333
Mean value				2.1367

Source: Author's own work

Empik.com and Merlin.pl are considered to be the best in this category as they offer a possibility of collecting goods personally in a number of points-of-sales in major cities in Poland, or delivery by a courier or post. Simultaneously, they have a short delivery time, shorter than in the case of smaller internet bookshops. In the category the last positions are taken by Taniaksiazka.pl and Petlaczasu.pl.

Summing up the evaluations obtained in particular analysed areas allowed for creating a ranking of the examined internet bookshops. Generally, Empik.com (93%) has taken the lead in the ranking, Merlin.pl with two percentage points less has ranked second. Gandalf.com.pl has appeared immediately after. The last positions have been taken by Petlaczasu.pl (57%), Taniaksiazka.pl, Zlotemysli.pl and Lideria.pl. The difference between the first and the last bookshop in the ranking amounted to 36 percentage points.

Apart from a simple scoring method, the author has also applied a scoring method with a preference scale. Due to the fact that each expert used a different scale, the mean value of their evaluations was considered in final calculations. An averaged preference scale for particular criteria groups has been as follows:

- functionality – 0.28;
- innovativeness – 0.12;
- marketing – 0.24;

- economic aspects – 0.36.
In total, the greatest preferences have been assigned to economic factors and functionality. Marketing took the next position. It turned out that for an average user the innovativeness of a website is not as important as the presented evaluation criteria. Many innovative solutions were treated by customers as unnecessary fireworks.

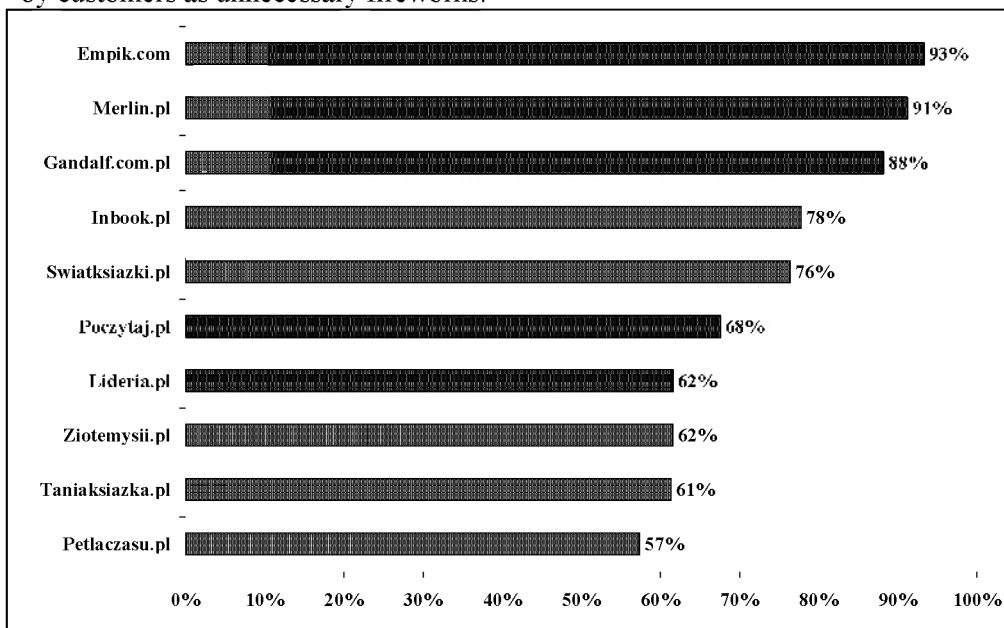


Figure 1. Evaluation of selected bookselling websites according to a scoring method without a preference scale
Source: Author's own work

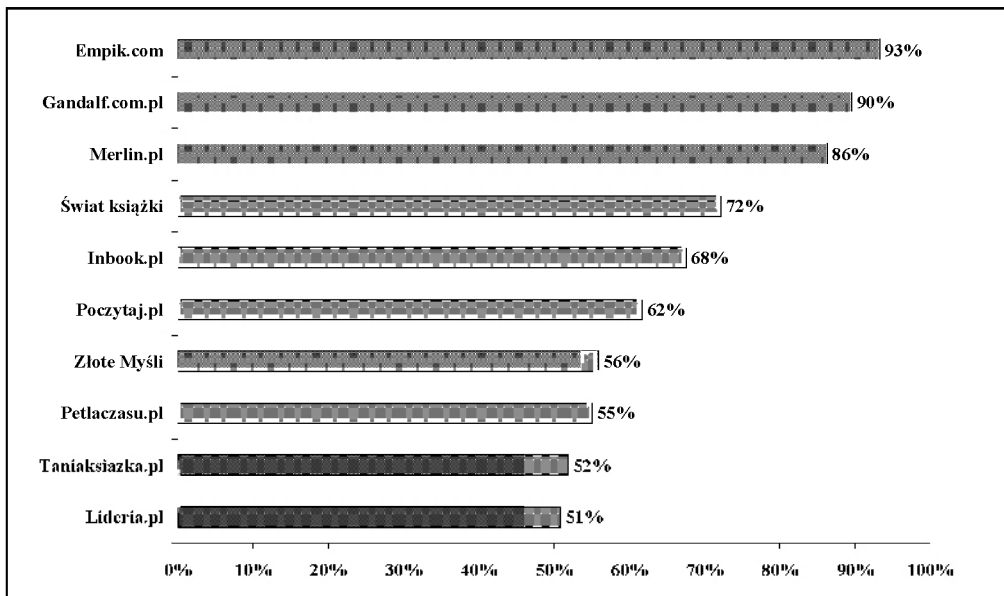


Figure 2. Evaluation of selected bookselling websites according to a scoring method with preferences

Source: Author's own work

The next stage of the procedure was multiplying the previously obtained table of averaged combined scores by the established average preference scale. The results are presented in figure 2. Preferences changed the order of the ranking. In the leading positions, the second and the third Internet bookshops swapped places. Lideria.pl changed its position from the sixth to the last one. Petlaczasu.pl. moved two positions upwards. The discrepancy between the highest and the lowest value in the ranking increased to 42 percentage points.

Analysis by means of AHP method and conclusions

In AHP method the author conducts comparative analyses of decision variants (here bookselling websites) on the basis of evaluations of their mutual relations for each criterion (criteria groups) compared in pairs. However, before we proceed to perform this evaluation, we need to establish a vector of relational preferences among criteria. There are variants (websites in this case) at a lower level of the method. At an upper level there are criteria groups. Each of criteria sets is profiled by a subcriteria set. The global aim of the study is to assess quality of each bookselling website from the point of view of an end user. The study starts with establishing a list of preferences. In order to calculate it, first, we need to construct the so-called global preference matrix. A relative dominance of one criterion over another is calculated as a result of a pairwise comparison. A dominance matrix is established: there are ones on the diagonal, and on both sides of the diagonal there are the converses of the established relations.

Table 6. A superior (dominance) matrix of global preferences for evaluation criteria in internet bookshops

Criterion	Functionality	Innovativeness	Marketing	Economic aspects
Functionality	1	7	3	1/3
Innovativeness	1/7	1	1/5	1/9
Marketing	1/3	5	1	1/3
Economic aspects	3	9	3	1

Source: Author's own work

Table 7. Matrix of normalised global preferences for evaluation criteria in internet bookshops

Criterion	Values of the preference vector
Functionality	0.1857
Innovativeness	0.0531
Marketing	0.0994
Economic aspects	0.6618
Total	1.0000

Source: Author's own work

The global preference matrix is subsequently squared until the difference between the standardised totals of rows, resulting from subsequent transformations, becomes insignificant. The result of the calculations is used as a preference vector of particular criteria.

Subsequently, particular variants are compared in pairs towards subsequent criteria sets. As a result, we obtain four square matrices (each concerns one of feature groups) with the size equal to the number of examined internet bookshops. After experts' evaluation of the realisation of a criterion in particular websites in relation to other websites, we square subsequent matrices, and next we add up columns. Then we normalize the results (we relate them to the totals of scores in columns) and again we square the matrix, add up columns and, once more, normalize the results. We repeat the procedure until we perceive the differences in subsequent normalised vectors to be insignificant (e.g. the difference appearing in the sixth decimal place, or none). As a result of the calculations, we obtain four normalised preference vectors of bookselling websites relating to each criteria group. They create a local preference (dominance) matrix (ref. table 8). After multiplying by the vector of normalised global preferences, we obtain a matrix of reduced evaluations. Addin up columns provides a basis for creating a ranking of internet bookselling websites.

Table 8. A matrix of reduced evaluations for internet bookselling websites

Criterion/ Bookshop	Petlaczasu.pl	Taniaksiążka.pl	Lideria.pl	ZloteMysli.pl	Poczytaj.pl	SwiatKsiazki.pl	Inbook.pl	Gandalf.com.pl	Merlin.pl	Empik.com
Functionality	0.0043	0.0058	0.0030	0.0022	0.0091	0.0186	0.0121	0.0262	0.0437	0.0606
Innovativeness	0.0006	0.0010	0.0007	0.0019	0.0019	0.0151	0.0037	0.0065	0.0065	0.0151
Marketing	0.0014	0.0011	0.0039	0.0013	0.0120	0.0026	0.0066	0.0261	0.0243	0.0200
Economic aspects	0.0126	0.0153	0.0159	0.0433	0.0404	0.0448	0.0610	0.1353	0.1302	0.1629
Total	0.0190	0.0232	0.0235	0.0488	0.0635	0.0811	0.0834	0.1942	0.2047	0.2586

Source: Author's own work

Applying the AHP method has changed the order of the ranking of internet bookshops' websites. In the first three positions Merlin.pl swapped places with Gandalf.pl, and Inbook.pl with SwiatKsiazki.pl. Petlaczasu.pl moved to the last position. Taniaksiążka.pl and Lideria.pl moved upwards in the classification. Using the AHP method, due to applying the assumed Likert scale with rating from 1 to 9 (significantly more extended than the scale used in the scoring method), caused a marked extension of the obtained results. The findings of the comparison are shown in figure 3.

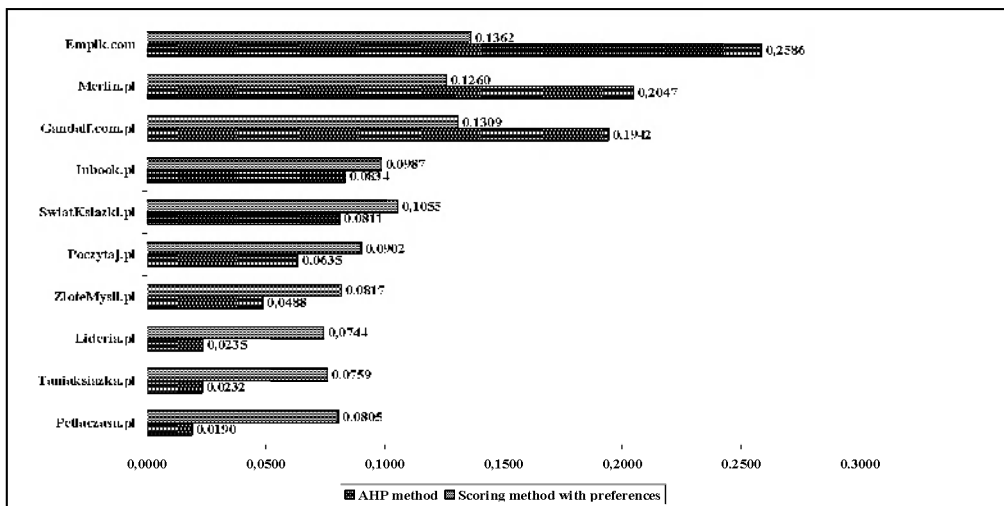


Figure 3. Comparison of the ranking obtained with a scoring method with preferences with findings resulting from AHP method

Source: Author's own work

Summary

Applying both groups of methods in the assessment of bookselling websites appear to have brought about satisfactory results. The findings enabled the author to establish the order of the most popular bookselling websites with regard to the identified criteria groups and the specified subcriteria. The author also considered both qualitative and quantitative criteria. The applied methods allowed for indicating unequivocal and comparable positions in the ranking that concludes experts' assessments. Due to the differences in the methodologies and the procedure for calculations, the author has applied additional assumptions rationalizing the methods and increasing the probability of results. The obtained results are different because of applying various evaluation scales and entirely different references in criteria relations. Nevertheless, they allow for creating independent rankings taking into consideration very different preliminary research assumptions (linear scale versus relational scale). It demonstrates that their usefulness in this kind of study has been confirmed. However, both of these methods have their advantages and disadvantages.

Advantages of scoring (ranking) methods are primarily: an easy and user-friendly application procedure; lack of necessity to introduce additional assumptions with reference to population distribution concerning the people who were surveyed; the ease of interpretation of results and, consequently, their large degree of reliability; short time needed to conduct the study and its relatively low costs. However, there appears criticism relating to lack of identified references (relations) among criteria and a large degree of subjectivity in evaluations. In the article the author has tried to reduce the first inconvenience by applying the average preference scale. The second problem has been reduced by applying mean values of experts' evaluations.

In the conducted research the following advantages of the AHP method have been identified: the assumed relativism of evaluation criteria and realisation of the criteria in particular websites; relative elasticity in relation to various classes of objects and a possibility of ordering decision variants in respect of synthetic criteria. There appeared a number of doubts concerning its practical application in relation to quality assessment of internet bookshops. These were: a large degree of evaluations' subjectivity, similarly to the case of scoring methods; considerable difficulties experienced by interviewers and experts in the case of application of the relational method, especially when the number of criteria and subcriteria turns out to be a two-digit number or lack of theoretical bases for creating a hierarchy, which in the case of identical situations can point to significant differences in the findings. The first problem has been solved by the experts' agreement concerning the evaluation hierarchy and relations at the local and global level. The second problem has been eliminated by training experts on how to apply the AHP method. Evaluation criteria have been limited to four criteria groups: experts have agreed that appropriate assessment of relations in the case of twelve criteria (as in the case of a scoring method) is very difficult, if not impossible. The third problem has been reduced in a practical way by identifying the main

objective; relations of the upper level (preferences of evaluation criteria) and lower level (preferences pertaining to websites in relation to criterion).

In each case the basic aim of the research was to establish the order of internet bookshops' websites with regard to the applied quality criteria group. In both cases end users were interested mainly in a website's functionality and economical aspects. Both groups of methods allow for various analyses of statistical data and practical solutions pertaining to websites. The discovered imperfection of procedures induces the author to look for more effective ranking methods, free of the defects specified in this paper.

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OCENA JAKOŚCI WYBRANYCH STRON INTERNETOWYCH SEKTORA KSIĄŻKOWEGO

Streszczenie: Celem artykułu jest ocena i wybór stron internetowych polskiego sektora książkowego w odniesieniu do jakości otrzymanej pod względem przydatności tych stron dla klienta indywidualnego. W pierwszej części autor przedstawił charakterystykę sektora

oraz podstawowe założenia metodologiczne dotyczące badania. Następnie przeprowadzono ocenę za pomocą prostej metody punktowej, metody punktowej z preferencjami oraz badanie relacyjne z wykorzystaniem metody AHP Saaty'ego (*Analytic Hierarchy Process*). Na końcu Autor przeanalizował wyniki badań oraz porównał ich rezultaty.