

IZABELA SOWA

izabela.sowa@ue.katowice.pl

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*Virtualization of Behaviours of Young Consumers*

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Wirtualizacja w zachowaniach młodych konsumentów

**Key words:** consumers' behaviours; young consumers; consumers' typology; virtualization; mobile phones

**Słowa kluczowe:** zachowania konsumentów; młody konsument; typologia konsumentów; wirtualizacja; telefony komórkowe

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### **Introduction**

Virtualization of consumption represents satisfying needs by means of electronic media, mainly by the Internet and television [Bywalec 2007]. Patrzalek [2004, p. 34] emphasises that virtualization favours growth of importance of indirect communication against direct relationships, and gradual decline of direct buying for the benefit of online buying. Having the access to the Internet on mobile phones is the expression of technology development, a proof of life being dominated by the Internet and contemporary consumers' pursuit of being online all the time.

The market of teenagers is currently observing the highest value over several recent years [Lindstrom 2003], and a considerable part of expenses is intended for the purchase of mobile phones and their usage [Quart 2003]. The way young people use mobile phones has been the subject of many international [Wilska 2003; GSMA, 2012], as well as regional research [Torlak et al. 2011; Alt and Pal 2011; Ofcom, 2015], including Polish studies [UKE, 2012; Dębski 2016].

The purpose of this article is to characterize the process of virtualization of young people's behaviours, especially the behaviours related to the use of mobile Internet, and to develop the typology of young consumers based on the scope and the way they use their mobile phones to connect to the Internet. In this paper, the hypothesis is assumed that virtualization of young consumers' behaviours related to the use of mobile Internet has various intensity in individual youth groups, and the age of the respondents is the main differentiating factor; virtualization is more explicit among students from high schools than among junior high school students. Young people aged between 14 and 19 residing in Śląskie Province are the subject of direct research.

### **1. Use of mobile phones by young people**

Results of international research prove that young people give high priority to the use of mobile phones. Using mobile phones by young people is also increasingly more intense and it starts at increasingly younger age. Mobile phone is used by young people not only as an instrument of communication, but also for entertainment, relax [Torlak et al. 2011] as well as a device ensuring security. Mobile phones also make the scope of young people's behaviours as participants of economic life broader. The fact that the phone has a symbolic value must also be emphasised here. Mobile phone is the evidence of following the fashion; it became an important element of establishment of one's own identity, and thereby a tool of group integration, but also of social stratification.

Therefore, it is not surprising that dynamic increase in the number of young people who have a mobile phone is observed. In 2002, almost half of American teenagers aged between 12 and 17 had the device. In 2008, already 52% of teenagers aged between 12 and 13, 72% – aged 14, and as many as 84% of teenagers aged 17 had the mobile phone [Pew Internet, 2009].

International segmentation of the market of young users of mobile phones proves that the way these devices are used is compliant with the general style of consumption presented by youth. Wilska [2003] stated that the style of consumption referred to as "addictive" is first of all typical of girls whose behaviours can be described as "following the fashion and impulsive". Boys, on the other hand, are most frequently the "technology enthusiasts" and "consumers that are aware of technological innovations". Although their consumption style is also considerably impulsive, it is characterised by searching, at the same time, for technologically advanced equipment of appropriate construction. On the other hand, "economical" style of using mobile phones is typical of those young people who regularly seek to manage resources reasonably. Such behaviours are not dependent on consumers' gender.

Further research enabled more detailed description of behaviours typical of the types identified by Wilska [Torlak et al. 2011]. It is important for people presenting "addictive" behaviours that their telephone applied the latest technologies, had the

possibility to connect to the Internet and for its design to correspond with the user's image. These people often change ringtones, wallpapers and themes, they also think that a three-year-old mobile is outdated and they prefer operators perceived as "trendy". "Technology enthusiasts" regularly check if they have received a text message, an e-mail or a notification. They also send lots of text messages and they predict that in the future they will use their mobile phones even more intensely. They admit that they feel uncomfortable if they do not have the mobile with them. On the other hand, the "economical" group often have problems with paying the costs of using their phone. These young people often think that the cheapest model is good enough for them and using the phone makes sense only if you must contact other people or to organise something. For them, the price is the only determinant when choosing the device.

Similar segments are identified by Alt and Pal [2011]. The goal of their research was to create segments of teenagers in the Romanian mobile phone market. Four segments were identified: two that were using mobile phones in a passive way and two that were using them in an active way. These segments include "basic passive users" who control and limit the use of mobile phones, "passive users with potential" – they feel themselves strongly able to easily use a mobile phone and have the financial background, "active social users" who make use of majority of mobile phone functions, particularly to establish social relationships and share the content in an active and intense way, and "active pragmatic users" who make use of advanced mobile phone functions also very intensely and cannot imagine functioning without their smartphones.

## **2. Determinants of consumption virtualization**

Technical possibility to use new technologies, including access to the Internet is the main determinant of the process of consumption virtualization. It results from Eurostat data [Eurostat, 2015] that in 2014 three quarters of Polish households had such an access (in the EU, this rate was 81%). At the same time, 17% of Polish people applied non-stationary devices (notebooks, tablets, laptops and smartphones) to connect to the Internet. Economic availability of mobile services is rapidly growing; in 2015, in comparison with 2006 it was possible to buy 8 times more minutes of a telephone call for an average pay, and unlimited voice calls, text messages together with data package were the cheapest in Poland among all European Union member states [PWC, 2016].

Access to the Internet on mobile phone expands the way in which the device is used. Although voice connections are the most popular mobile telephony service in Poland, recently a decline in their number has been observed at simultaneous increase in the number of Internet connections made on mobile phones. Replacement of voice connections and text messages by communication via applications that use only data

transfer has been observed [UKE, 2013]. It is estimated that in 2012, around 25% of used phones were smartphones. They also accounted for almost 50% of sold mobile phones [Gutkowski 2013].

The rate of the youngest people using smartphones has been rapidly growing: in 2013, they were used by almost half of young people [aged between 16 and 24] [Czapiński and Panek 2013], and in 2015, as many as 79.4% already used them [Czapiński and Panek 2015]. Research of consumers from the age group of 15 to 24 conducted in 2012 at the request of the Office of Electronic Communications (*Urząd Komunikacji Elektronicznej*) show that young people commonly use mobile telephony. The ownership of the telephone was declared by 99% of consumers belonging to the studied group [UKE, 2012]. Almost half (46%) of mobile phone owners connected to the Internet on them, two thirds made at least a few telephone calls per day and 82% declared that they sent text messages several times a day.

### 3. Description of research sample

Direct research was conducted in the school year of 2013/2014 for the purpose of description of behaviours related to the use of mobile Internet by young consumers. The method of auditory survey was applied. First and third year students of junior high schools<sup>1</sup>, and students from high schools (general comprehensive secondary schools and vocational schools) from Śląskie Province were the respondents. The questionnaire was completed in total by 933 people, out of which 82% studied in schools located in big cities and 18% in small towns. The structure of the sample by gender and level of education of respondents is presented in Table 1.

Table 1. Structure of research sample by gender and level of education (data in %)

	Female	Male	Total
1 <sup>st</sup> year of junior high school	12.1	16.1	13.8
3 <sup>rd</sup> year of junior high school	12.6	22.4	16.9
1 <sup>st</sup> year of high school	37.4	32.1	35.0
3 <sup>rd</sup> year of high school	26.6	19.2	23.4
1 <sup>st</sup> year of vocational school	5.4	5.4	5.4
3 <sup>rd</sup> year of vocational school	5.9	4.9	5.5
In total	100	100	100.0

Source: Author's own case study based on results of primary research.

Thanks to the method of sample selection and its distribution, collected data allow one to formulate, to a limited extent, conclusions concerning the whole Polish population and associated with behaviours of young people living in villages.

<sup>1</sup> Junior high schools – a three-year secondary school for children aged 13–16 (AmE).

Analysing the frequency of performance of various actions that are the expression of virtualization, the age and sex of the respondents, the type of school they attend, the level of education of their parents and the fact of having siblings are believed to be the explanatory variables.

#### **4. Frequency and ways in which mobile phones are used by Polish youth**

Ownership of mobile phones was declared in conducted research by 97% of respondents, where 80% of them admitted that they connected to the Internet on their mobile phone. Among the latter group, 89% used Wi-Fi, 30% had the payment for the Internet included in the subscription and 23% bought Internet packages.

Almost all studied users of mobile phones sent text messages, and 76% did it every day, half of them did it many times during the day, and every third respondent declared that they were sending text messages almost “all the time”. Listening to music was the second mobile phone function with respect to frequency of its use. Nearly 70% of studied youth declared that they listened to music every day, including “almost all the time”, and only 4.5% of young people did not use this mobile phone function. Making phone calls was declared by 97.4% of respondents. Almost two thirds of them (60.3%) made several calls every day, and phone calls were made less often than several times a month, by 9% of respondents. As many as 13.5% claimed that they were talking “almost all the time”. Taking pictures and recording films was also popular among young people. Although the largest group of young people (30%) declared that they took photos several times a week, 23% stated that they took pictures several times a month, every third respondent took photos many times a day and 9% did it more often than several times a day.

People declaring that they made use of mobile Internet on the phone most frequently used it to communicate with friends – 95% of respondents from this group used social networking websites in this way. Over two thirds of users of the Internet on their mobile phones (70%) connected with the websites every day, and 28% stated that they were using the websites “almost all the time” (Table 2).

Messengers in the phone were used by 84% of users of mobile Internet; 44.5% used them every day, including 18% of those who were using them “almost all the time”. Mobile phone enables 81% of users of mobile Internet to receive electronic mail, and almost every fourth of them checked their e-mail boxes several times a day. Another method of contacting with friends was sharing films and pictures on the Internet, and also geotagging them. If “sharing” visual content on the Internet was quite popular, mobile phones were used for this purpose by 70% of Internet users, geotagging was applied by considerably smaller group of respondents, i.e. 39%.

Every fifth respondent shared pictures and films every day, including almost 10% of those who did it more often than several times a day. Results of conducted studies prove that young people willingly made use of helpful applications. Almost

80% checked public transport timetables; this function was most frequently used several times a week (23%) or several times a month (22%).

Table 2. Rate of people who declared using the function on the telephone with access to the Internet (N=707)\* (data in %)

Applied functions	Never	Several times a year or less frequently	Several times a month	Several times a week	At least once a day
Using social networking sites	5.3	5.0	5.2	14.5	70
Using messengers	16.1	8.0	12.0	19.4	44.5
Using dictionaries, encyclopaedias	18	10.0	25.0	26.8	20.2
Checking e-mails	18.6	14.1	20.1	23.7	23.5
Checking public transport timetables	20.1	16.0	22.3	22.9	18.7
“Sharing” pictures and films on the Internet	30	14.8	19.5	15.7	20
Reading books and newspapers	33.5	17.1	18.7	16.2	14.5
Checking if other stores have a more attractive offer while being in a shop	53.1	15.0	14.6	8.2	9.1
Using geolocation for picture geotagging	61	15.4	10.0	5	8.6
Using QR codes	70.2	11.0	8.4	3.9	6.5
Making payments with the mobile phone	74.9	9.6	6.0	3.3	6.2

\*In the table, the responses: “a few times a day”, “several times a day”, and “at least once a day” are totalled and presented as “at least once a day” response.

Source: Author’s own case study based on results of primary research.

## 5. Typology of youth

Behaviours of young people using mobile Internet proved to be so diversified that they enabled description of their typology. The frequency of use of various functions on the telephone was determined by respondents on a 7-degree ordinal scale. Particular frequencies were attributed the numbers from 1 to 7, where 1 represented “never”, 2 – “several times a year or less frequently”, 3 – “several times a month”, 4 – “a few times a week”, 5 – “a few times a day”, 6 – “several times a day” and 7 – “more often than several times a day, almost all the time”. Therefore, the numbers did not represent a real frequency but were of an approximate nature. On the basis of collected data, the analysis of cluster was performed with k-means clustering method. It allowed for identification of 3 types of young people that differed with respect to the way and scope of use of mobile phones for connecting to the Internet. Fourth type representing people who did not use mobile Internet was also distinguished. The clusters were given the following names: “Sociables”, “Intense Internet users”, “Reserved” and “Non-users of Internet on the phone”.

The “Sociable” cluster is most strongly represented group in the sample. They constitute 42.1% of all the respondents and 52.6% of respondents using the Internet on the mobile phones. The “Sociables” use the telephone mainly to communicate; they often talk, send text messages and use social networking sites. However, they less

frequently use messengers and share pictures on the Internet. Respondents belonging to this cluster use other possibilities offered by the Internet in a limited degree. Girls mainly living in cities and being students in the third year of junior high school or first year of high school are predominant in the group of the “Sociables”. The amount of money they have at their disposal is larger in comparison with their peers.

“Intense users” constitute nearly 12.8% of the whole sample and 16% of respondents using mobile Internet. They are people who use their telephones very intensively. They use them both for communicating with others and for other purposes associated with the use of various functions of mobile Internet. The representatives of this cluster willingly use even highly advanced functions including making payments by telephone, geolocation or QR codes. “Intense users” communicate with other people by means of social networking sites and messengers more often than by making phone calls or sending text messages. Boys, people who have siblings and also young people whose parents have university education are predominant in the described group. It must also be stated that the mean age of “Intense users” is slightly higher than other respondents’ (Table 3).

Table 3. Types of young consumers with respect to using the Internet on the mobile telephone – mean frequencies of using the function (N=933)\* (data in %)

	Sociables	Intense users	Reserved	Non-users of the Internet
Sending txt messages	5.93	5.60	4.97	4.92
Listening to music	5.69	5.98	4.55	4.29
Making telephone calls	5.22	5.11	4.34	4.39
Taking pictures, making films	4.45	5.10	3.35	3.08
Playing games	4.15	4.84	3.30	2.44
Using the Internet on the telephone				
Using browsers	5.97	5.85	4.17	
Using social networking sites	5.90	5.74	3.63	
Using messengers	4.84	5.63	2.50	
Using dictionaries	3.48	5.27	2.41	
Checking timetables	3.22	5.35	2.39	
Checking mail box	3.57	5.58	2.23	
Reading books and newspapers	2.77	5.05	1.86	
“Sharing” pictures and films	3.29	4.79	1.75	
While being in a shop, checking offers of other stores	1.95	5.00	1.43	
Using geolocation for geotagging of pictures	1.64	5.04	1.28	
Using QR codes	1.47	4.25	1.21	
Making payment with mobile telephone	1.43	4.04	1.15	

\*Calculated frequencies have approximate nature; the scale from 1 (“never”) to 7 (“almost all the time”) was applied

Source: Author’s own case study based on results of primary research.

The “Reserved” who constitute 25.6% of all the respondents and 32% of the respondents using the Internet on the phone are a group who send text messages, make phone calls and listen to music less frequently than the other two clusters. They

also considerably less frequently use social networking sites and messengers, and only scarcely use other telephone functions. Majority of respondents representing the “Reserved” group are students in small centres.

“Non-users of the Internet” use mobile phones the least frequently. They talk and send text messages with similar frequency as the “Reserved”, they listen to music slightly less frequently, but they take pictures and play games on telephone remarkably less frequently. This group comprises people of relatively smaller pocket money who live in small towns. Furthermore, mothers of studied “Non-users of the Internet” have lower level of education than mothers of respondents belonging to other clusters. The group was represented in the whole sample by 20% of young consumers.

Summing up the results of conducted cluster analysis, it must be stated that the process of virtualisation of behaviours is observed among around 2/3 of studied consumers. Among the “Sociables”, virtualisation mainly concerns the process of communicating with friends, whereas in the case of “Intense users” it includes a broad scope of needs satisfied thanks to the use of mobile Internet. In the group of “Reserved”, virtualization is limited only to scarcely frequent use of social networking sites and Internet browsers. Apart from this, behaviours of this cluster are similar to behaviours of “Non-users of the Internet”.

## Conclusions

Progressing virtualisation of young people’s behaviours have been observed in recent years. Particularly, more and more needs are satisfied thanks to the use of the Internet on mobile phones. However, the lack of access to appropriate equipment and lack of access to the very Internet are not the only obstacles to the development of this phenomenon. Behaviours of the “Reserved” type and partly also of the “Sociable” type identified during the conducted research show that making no use of virtualization that is offered by mobile Internet is a result of lack of interest of young people in satisfying their needs in this way. Therefore, the thesis formulated at the beginning can be verified with some limitations. Virtualization of behaviours definitely has a diversified intensity among individual groups of young people; however, age is not the major determinant of these differences as it was predicted. Age only affects the equipment they have in terms of mobile phones. Significant differences in the access to mobile phones is observed in younger age groups – people around 12 to 14 years of age. It seems that satisfying social needs via mobile phones favours the development of social life until some time. However, a very intense use of this equipment is competitive to social activity which results in limiting communication with friends.

It ought to be stated that the results of conducted classification are partly convergent with the results of segmentation research conducted by Wilska [2003], Torlak et al. [2011], or Alt and Pal [2011]. This proves that Polish teenagers adjust some globally occurring trends to their behaviours.



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## Virtualization of Behaviours of Young Consumers

More and more frequent manifestation of virtualization of youth behaviors is satisfying needs by the Internet available through the mobile phone. The purpose of this article is characterization of young consumers' behaviors connected with using the Internet in such a way as well as carrying out their typology. The conducted analysis allowed for creation of consumers' typology for which k-means method was used. There were identified 4 consumers' categories: "Sociables", "Intense users", "Reserved" and "Non-users of the Internet". The basis for achieving mentioned aims are outcomes of the poll conducted in the 2013/2014 school year among youths aged 14–19.

### **Wirtualizacja w zachowaniach młodych konsumentów**

Coraz częściej spotykanym przejawem wirtualizacji zachowań młodzieży jest zaspokajanie przez nią potrzeb za pomocą Internetu dostępnego w telefonach komórkowych. W artykule przyjęto dwa cele. Pierwszym jest scharakteryzowanie tych zachowań młodych konsumentów, które są związane z korzystaniem z mobilnego Internetu, zaś drugim – przeprowadzenie typologii młodych konsumentów ze względu na zakres i sposób wykorzystywania przez nich telefonu komórkowego do łączenia się z Internetem. W wyniku przeprowadzenia typologii zidentyfikowano wśród młodzieży cztery typy: „towarzyskich”, „powściągliwych”, „intensywnych użytkowników Internetu” oraz „niekorzystających z Internetu”. Podstawę dla realizacji tych celów stanowiły informacje pochodzące z badań ankietowych przeprowadzanych w roku szkolnym 2013/2014 wśród młodzieży w wieku od 14 do 19 lat.