

SMARTPHONES AND MOBILE APPLICATIONS AS SHOPPING TOOLS – ATTITUDES OF YOUNG RETAIL CONSUMERS IN CROATIA

Blaženka Knežević¹, Mia Delić², Nikola Knego³

Abstract

Modern information and communication technology has a very strong influence on retail customers, especially in younger generation. The majority of younger retail consumers in Croatia is using smartphones in everyday life, not only for communication and fun, but also to search, collect and compare information about desired products. The usage of smartphones and mobile applications as shopping tools within this population is of a great interest for future retail marketers and managers. In this paper we will analyze perceptions of younger consumers on smartphones and mobile applications in order to explain their potentials as retail shopping tools. Therefore, an empirical survey is undertaken in order to answer several research questions such as: how frequent young consumers use smartphones and mobile applications in general, what are main motives and what is the scope of their usage, how often do they shop via smartphones, what motivates them to use applications for mobile shopping and what are their attitudes towards mobile purchasing benefits.

Keywords: retail, m-commerce, mobile applications, buying behavior, younger consumers

JEL classification: L8, L81, L86, M31, M15

Acknowledgement

The paper has been chosen to be published in polish national Journal "Handel Wewnętrzny" - Blaženka Knežević, Mia Delić, Nikola Knego - Smartphones and Mobile Applications as Shopping Tools – Attitudes of Young Retail Consumers in Croatia, "Handel Wewnętrzny" (2015)5/358, pp. 188-202.

1. Introduction

According to eMarketer (2015) the number of smartphone users was 1.91 billion in 2015 which is almost one quarter of the world population and forecasts are that the figure will increase

¹ Corresponding author: PhD, University of Zagreb, Faculty of Economics and Business, Department of trade, Trg J. F. Kennedy 6, Zagreb, Croatia, bknezevic@efzg.hr.

² MA, University of Zagreb, Faculty of Economics and Business, Department of trade, Trg J. F. Kennedy 6, Zagreb, Croatia, mdelic@efzg.hr.

³ PhD, University of Zagreb, Faculty of Economics and Business, Department of trade, Trg J. F. Kennedy 6, Zagreb, Croatia, nknego@efzg.hr.

another 12.6% to near 2.16 billion in 2016. And according to Eurostat (2014a) more than a half of population used mobile access to Internet in 2014 (see Figure 1) and the usage of mobile Internet access grew significantly in all EU countries in comparison to 2012 no matter on the level of economic development. Moreover, Eurostat (2014b) shows that on EU-27 average 7% of population use handheld devices for purchasing and that in some countries penetration of mobile purchasing has even exceeded 15% of population (UK, Sweden, Denmark and Norway).

Therefore, we can claim that smartphones and mobile applications are opening new opportunities for marketing and retail on a global scale and that there is a need to research global and local trends in behavior of mobile-centric consumers who are using smartphones in a various ways starting from calling throughout shopping towards to content creating and sharing.

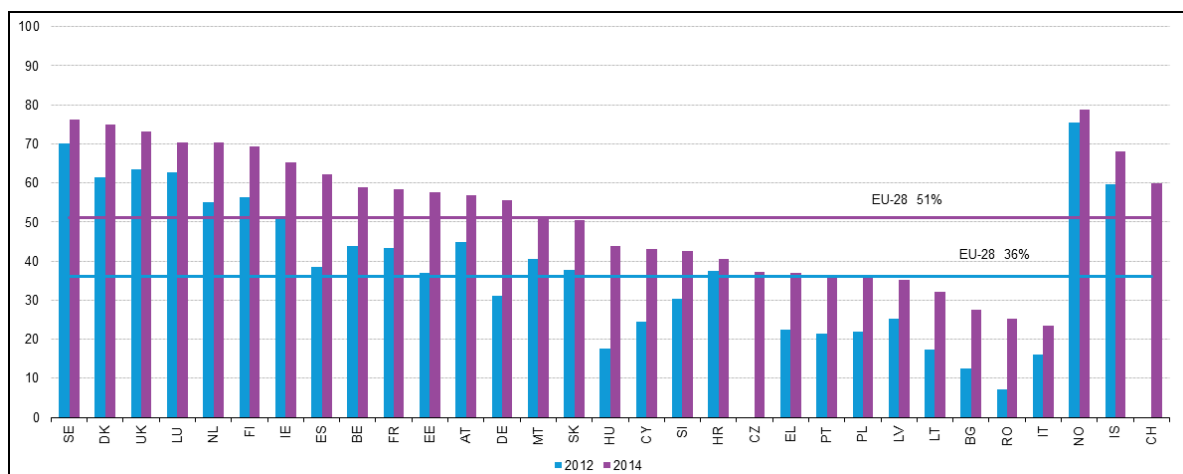


Fig. 1. Individuals who used the Internet away from home or work, 2012 and 2014 (% of individuals)

Source: Eurostat (2014a): Internet usage by individuals in 2014, [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Individuals_who_used_the_internet_away_from_home_or_work,_2012_and_2014_\(%25_of_individuals\)2.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Individuals_who_used_the_internet_away_from_home_or_work,_2012_and_2014_(%25_of_individuals)2.png) (accessed: 16th April 2015).

In the literature student population is referred to as a large part of consumer generation “Y”. This generation is technologically highly aware and willing to use digital tools in all spheres of life (Archana & Heejin, 2008; Lazarevic, 2012; Rahman & Azar, 2011; Knezevic et al., 2014), thus it is worthwhile to research how students, as a waste part of generation Y, are using modern technologies in their everyday life and to investigate their behavior as shoppers that intensively use mobile devices such as smartphones and mobile applications.

For retailers and marketers it is particularly important to investigate how young consumers use mobile devices and mobile applications as a source of information on companies

and products and what are their attitudes towards suitability, convenience and availability of mobile technology regarding retail purchasing processes, but also, it is important to investigate how do they perceive risks and security issues associated with mobile technology.

In this paper, on the basis of secondary resources, we will give a theoretical overview of m-commerce starting with key definitions and attributes of m-commerce. Then we are going to explain development drivers of m-commerce. Afterwards, we will describe sample and methodology of a primary research on usage of smartphones and mobile application among student population in Croatia. Finally, we will discuss the results of the primary research and draw conclusions on opportunities of m-commerce application for retailers when targeting young consumers.

The aim of the primary research (survey) was to answer several research questions such as: what motivates students to use smartphones and mobile application, how do they use smartphones as a shopping tool, do they research and shop via mobile devices, what is their attitude towards mobile applications in area of retail, and do they perceive opportunities of the mobile environment comparing to the traditional retailing.

2. Mobile commerce definitions and attributes

Chaffey (2007, p.132) states that mobile technologies are not new because for many years was possible to access to networks via laptop and modems. But in a full sense, mobile commerce is fully enabled throughout wireless technology and handheld devices such as PDAs (personal digital assistants), palmtop computers and mobile phones. Therefore, Chaffey (2007, p. 132) adds a wireless connection to a mobile commerce definition and he defines mobile commerce as electronic transactions and communications conducted by using different mobile devices and typically with a wireless connection. In addition, Laundon and Traver (2007, p. 84) state that mobile commerce takes traditional electronic commerce models and leverages wireless technologies to ensure mobile access to the Web and that the major advantage of m-commerce is possibility to access Internet by anyone, from anywhere using wireless devices.

Turban et al. (2008, p. 8) define mobile commerce as electronic commerce transactions and activities conducted in full or in part in a wireless environment. While Laundon and Traver (2007, p. 17) emphasize that conducted transactions are commercial. Turban et al. (2008, p. 8) set aside a specific form of m-commerce in which transactions are oriented towards individuals in specific location, i.e. based on location. This type of m-commerce is called L-commerce.

In addition, Turban et al. (2008, p. 431) emphasize that m-commerce includes B2C, B2B commercial transactions and transfer of information and services via wireless mobile devices in intrabusiness, as well. Therefore, m-commerce is considered as an extension of e-commerce. Moreover, Turban et al. (2012) suggest that there is a possibility to introduce the concept of mobile enterprise in order to improve the operations of the employees, the facilities, and the supply chains, within the enterprise and with its business partners, i.e. to apply mobile technologies in activities that are not directly oriented towards final consumer.

Chaffey (2007, p. 133) describes six main propositions of mobile Internet access from the consumer point of view:

1. There is no need of fixed location.
2. Enables location-based services when integrated with global positioning system.
3. Provides instant access to information and improves convenience because user can access Internet throughout wireless services wherever they are available.
4. Increase privacy of the individual user in comparison to the desktop Internet access.
5. There is possibility of service personalization as usage of a mobile device is usually used by only one individual.
6. There are security issues to be resolved in the next period because mobile devices can store a lot of personal data, even data on access to bank accounts (if user is accessing mobile banking system via mobile device).

According to Turban et al. (2008, p. 432) m-commerce has several value-added attributes: ubiquity, convenience, interactivity and personalization. Ubiquity refers to accessibility of information from any location in a real time. Convenience refers to ease of use of mobile devices in comparison to desktop devices which are smaller and thus more usable for information access on the move. Mobile devices improve interactivity because users are able to communicate, search for information and use services in a real time. Moreover, the individual usage of mobile devices enables a high level of personalization according needs and requests of an individual user which gives a business opportunity for delivering personalized information, products and services. The knowledge on users' physical locations in a real time creates a business opportunity to offer location-based information, services and products.

2.1. M-commerce development drivers

In 1999 the newest generation of mobile phones started to utilize WAP (wireless application protocol) as a technical standard to access Internet and World Wide Web on a mobile phone. Even though this protocol required simple web contents, that year can be recognized as a starting year of a rapid development of m-commerce. The first device that was marketed as a “smartphone” was Ericsson R380 offering features such as: calculator, address book, sending/receiving faxes and e-mails, and pager services in addition to calling and SMS services. While the first cell phone with integrated camera was launched in 2002 by Sanyo.

Increased features and possibilities required higher speed of access, thus 3G networks (introduced in 2001) enabled speeds that supported multimedia Internet connectivity and support for video calls. Since 2007 when Apple introduced iPhone the growth of mobile revolution is taken onto another level because smart phones are getting more intuitive and user friendly. And another milestone of mobile commerce development was the emergence and commercial usage of Android operation system in 2008 by several large mobile devices producers which significantly contributed to openness and price reduction of mobile devices, but also caused the revolution in mobile application development. Since 2011 large players are turning to 4G network standards at ultra-high speeds which will enable even more complex mobile services and applications.

We have to mention one more technology that supported mobile revolution. It is Wi-Fi (wireless-fidelity) enabled massive development of m-commerce because the speed of access to Internet increased rapidly. Chaffey (2007, p. 34) claims that airports, coffee bars and hotels started to offer Wi-Fi hotspots as a part of their consumer services which was a way to differentiate from other competitors, nowadays even in less developed economies in tourism it is a standard service and cannot be considered as a differentiation factor. In addition, Chaffey (2007, p. 34) points to several research studies showing that Wi-Fi was introduced in homes and offices as a technology that eliminates wires needed for networking and he claims that research studies shows that users are rather using home or office Wi-Fi networks than Wi-Fi hotspots.

According to Nielsen (2014) the significant portion of online shoppers use mobile devices as a shopping tool and this percentage is significantly growing over the time. In 2013, 44% of online shoppers were using mobile devices to shop online on the global level, while in Europe this percentage was 33%.

Turban et al. (2008, p. 433) distinct several drivers of m-commerce. The first is widespread availability and more powerful devices; the second is so called “the handset culture” which refers to the spread of mobile phones in population between the ages 15 and 25 years who are almost born with a handset in their hands. Then, the service economy which is transferring to mobile device usage more and more by offering a wide range of mobile services (such as: mobile banking, mobile parking payment, mobile travel and event tickets reservation and payment and so on). Another driver of m-commerce refers to vendors who are pushing their devices, services and products throughout m-commerce channel intensively. A will of people to work from outside of office is also an important driver of m-commerce development creating a bunch of m-workers and provoking the necessity of a new managerial approach. On the other hand, companies perceived that increased mobility of workers enables the improvement of business efficiency because business transactions are done in field and in a real time with smaller error rate. Finally, the improved in bandwidths and improved price/performance indicators are also contributing to faster growth of m-commerce, as well.

3. Methodology and sample

In this research the survey was taken on student population. Research took place in April 2015. The quantitative data was collected through online questionnaire in Google Docs. Questionnaire was distributed through social networking platform – Facebook and Google Classroom. The objective of conducting questionnaire is to understand young Smartphone users’ perception and attitude towards Apps-commerce, in order to obtain consumers’ opinions to give proper suggestions to retailers for development/improvement in Apps features.

Based on the questionnaire components of prior studies, a modified-questionnaire is developed, which consisted of four main parts: (1) General information, (2) Smartphone and mobile applications usage, (3) Users’ attitude towards Apps-commerce adoption and (4) Attitude of non-Smartphone users. Questionnaire constructs and objectives of each section are detailed in the table 1. An online questionnaire included questions of different types: one choice question, multiple choice questions and Likert scale ranking questions.

Questionnaire was structured on the basis of following literature review:

1. For modalities and motives of Smartphone and mobile applications usage: Knezevic et al. (2014).

2. For mobile applications shopping behavior, mobile shop structure and contents at online shops: Knezevic et al. (2014); Wai (2012).
3. For attitudes towards mobile applications shopping problems, obstacles and risks: Knezevic et al. (2014); Wai (2012).

Table 1. Questionnaire construct and objective

	Content	Objective
Section I	Personal information	- to collect demography information
Section II	Smartphone and mobile applications usage	- to eliminate non-Smartphone users - to examine the Smartphone penetration rate in Croatia - to gather mobile applications usage pattern
Section III	Users' perception towards mobile applications for buying products/services (motivation for using, usefulness, ease of use, risk, perceived value)	- to gather respondents' attitude towards mobile applications for buying products/services based on different consequences - to examine the relative importance of these consequences - to examine satisfaction level in different aspects (e.g. time /money)
Section IV	Attitude of Non-Smartphone users	- to examine their attitude towards future usage of Smartphone and mobile applications

Source: own work.

Male and female respondents aged between 18 and 35 were surveyed. According to the Pew Research Center's Internet & American Life Project (2011) about Smartphone adoption, working group aged between 25 and 34 is the highest Smartphone adoption group with 58%, followed by the young generation aged between 18 and 24 with 37%. With similar adoption trend within Croatian market, target group of the questionnaire focuses on the Smartphone users aged between 18 and 35. This target group is suggested with highest potential of Smartphone apps adoption due to their high acceptance to new technology and purchasing power. Large sample size provides more data for analysis. To ensure high explanatory power of result, the target respondents of this survey is 285. Table 2 shows relative frequency of sample characteristics.

Table 2. Characteristics of the sample

CHARACTERISTIC	OPTIONS	RELATIVE FREQUENCY (%)
gender	male	26
	female	74
years	18-24	58.9
	25-30	37.2
	31-35	3.9
monthly income (including allowances, scholarships, wages and/or part time job fees)	less than 65 EUR	15.1
	65 - 130 EUR	27.4
	130.1 - 260 EUR	23.5
	more than 260 EUR	34
highest level of education	high school	37.5
	bachelor	55.1
	master or more	7.4
Smartphone usage	yes	96.8
	no	3.2

Source: own work.

The gender structure of the sample was in the accordance to the student population within faculties of economics and business in Croatia. There were 74% of female and 26% of male students at the sample. As shown in table 2 above, all respondents aged between 18 and 35, in which almost 60% of respondents are from the age group of 18-24, followed by the group of 25-30, which occupied 37.2% of the population. The largest proportion of students (34%) have monthly income (in terms of allowances, scholarships, wages and/or part time job fees) more than 2000 kunas (i.e. more than 260 EUR), while there is a certain proportion of working students (27.4%) that have a smaller amount of money available for monthly spending (i.e. 130.1-260 EUR). About 55% of the participants in survey were in bachelor education level, followed by the groups of high school education accounted for 37.5% correspondingly, while 7.4% owned master degree or above.

4. Smartphone and mobile applications usage pattern

In this section, Smartphone and mobile applications usage pattern are discussed in details, including mobile applications for buying products/services.

The majority of students use Smartphones as a primary mobile device (96.8%). There are only a few non-Smartphone users at the sample (3.2%).

Among the population of Smartphone users (276), 225 respondents (81.5%) with over 2 years' experience of Smartphone usage, followed by the group with 1-2 years' usage experience (14.5%). The remaining part of sample (4%) was the users with up to one year experience. So we can conclude that this student generation has been familiar with mobile technology from their teenage ages.

The distribution of mobile applications daily (Apps) usage time was shown in figure 2. Most of the respondents spend one to two hours on Apps in a day (40.2%), while 77 respondents (27.9%) spend less than one hour on Apps on daily basis. Around 20% of respondents spend two to three hours on Apps, while only 12% of respondents may spend over 3 hours on Apps in a day, which proportion was unexpectedly low.

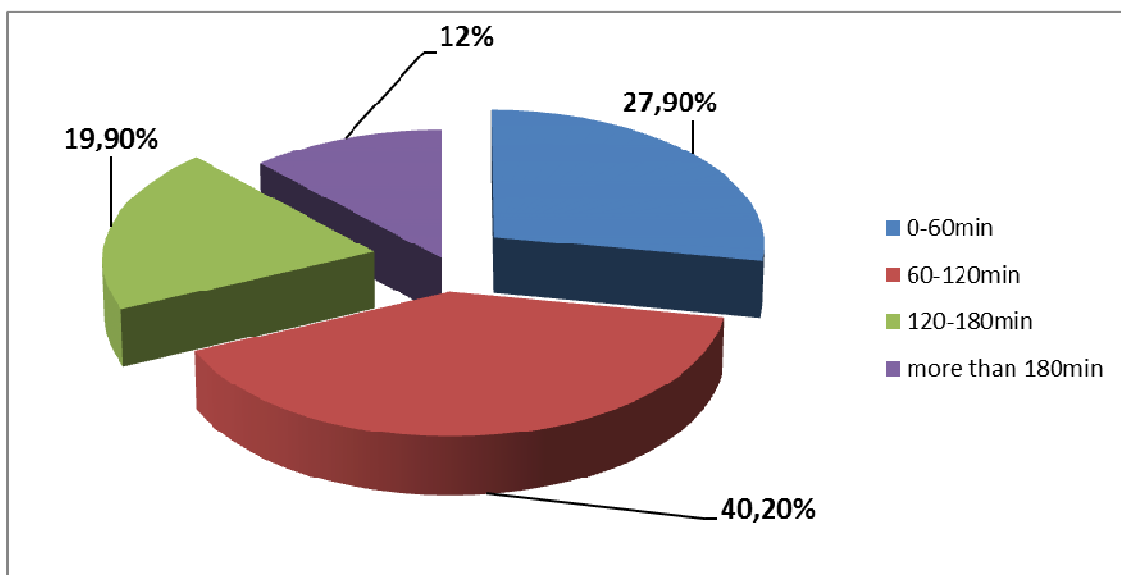


Fig. 2. Distribution of mobile applications daily usage

Source: own work.

It is interesting that Wai (2012) in his research came to very similar numbers for all categories of mobile applications users, except in the category that spends less than one hour on mobile applications. In this category falls almost 50% of its respondents.

When analyzing the types of mobile application downloaded in terms of payment, 86.2% of respondents use only free mobile applications, while 12.7% of respondents use payable mobile applications in the situation of an actual emergency. Only 1.1% of respondents download payable Apps almost always.

Majority of students in Croatia never pay for additional content within mobile applications (92.8%); only 4% of respondents sometimes pay for additional content within mobile applications.

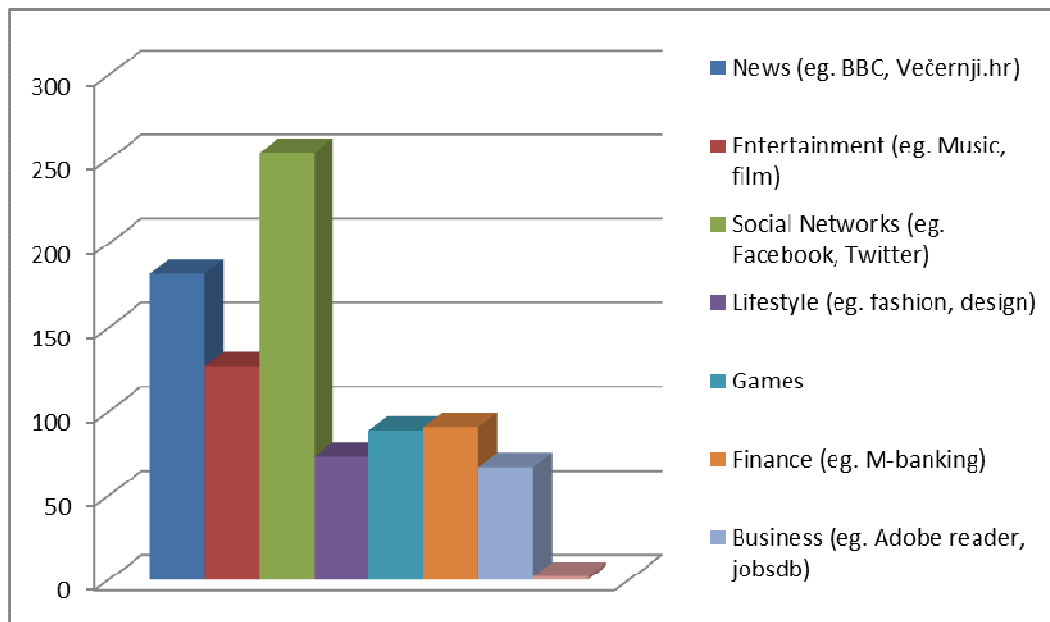


Fig. 3. Distribution of commonly used types of mobile applications

Source: own work.

Figure 3 showed the distribution of commonly used types of Apps. Not surprisingly, social network Apps was the most popular Apps category (91.9%), followed by news Apps (66.3%) and entertainment (46.2%). Balance types of Apps including lifestyle, finance, business, and games shared similar proportion, with 25%-33% respectively.

When reconsidering mobile applications as a communication channel with a targeted market, it is important to know what are motives for using mobile applications and common online activities.

In terms of motivation for using mobile applications, most of the respondents evaluated the use of mobile applications for communication with friends on social networks (64%), finding general information of personal interest (46.7%), tracking news of social events through the application of the public media (38.2%), watching and listening free multimedia content (32.7%) and finding information about desired products and services (32.4%) as the most important

motives for of using mobile applications (see Figure 4). On the other hand, playing the lottery (54.5%), shopping 24/7 (28%) and playing online games (26.9%) are evaluated as the least important motives of using mobile applications.

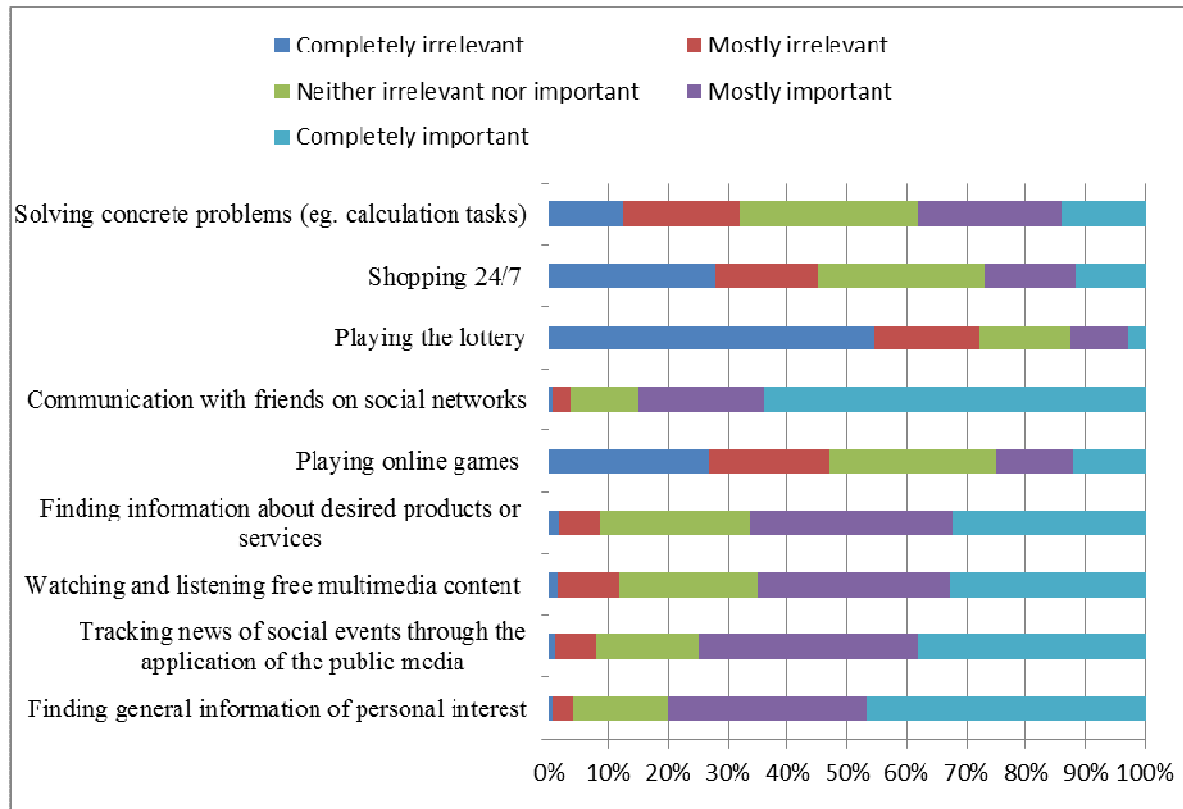


Fig. 4. Motives of using mobile applications

Source: own work.

4.1. Motives for using mobile applications for buying products and services

Majority of students in Croatia do not purchase via mobile devices (35.5%), while 30.4% of them are purchasing 2 to 6 times per year. 26.4% of respondents are purchasing once per year, while only 7.6% are online shoppers on a regular basis (more than 6 times per year).

There are great differences when analyzing types of products and services that students buy via mobile devices. Mobile shoppers within student population usually buy tickets (63.8% mobile shoppers within population). Next product group is “clothing, footwear and fashion accessories” (42.4% online shoppers within population). Around 19% of respondents are buying travel arrangements and products/services for health and beauty. While in the group food and beverages, consumer electronics, books and computer equipment there are less than 10% mobile

shoppers within student population. Present student population will become significant category of consumers in the near future, and their attitudes are important not only for present but also for future retailers.

When reconsidering mobile applications as a shopping channel, majority of students in Croatia do not purchase via mobile applications (58.2%), while 18% of respondents purchase once or two to six times per year. Respondents who have never purchased via mobile applications have not even downloaded any mobile application for buying products/services.

All students are asked to evaluate motives of using mobile applications for buying products/services (see Table 3). Saving time and benefit 24/7, which is the most quoted benefit in e-commerce literature, are recognized to be most important motives for using mobile applications for buying products/services within student population. Then follows the possibility of finding interesting products/services, comparing prices and products and checking the reviews of products/services. Benefit “checking the reviews of products/services through mobile applications” have the mod “very important” in 36.3% cases, but comparing to other benefits it is only at sixth place at the list for student population.

Table 3. Motives of using mobile applications for buying products/services

Mobile shopping benefits	Rating Average	Mod	Mod/Total
It is easier to compare prices and product information	3.96	important	37.2%
It is easier to find interesting products/services	4.07	important	48.7%
There is no pressure by salesmen like in traditional stores	3.99	important	38.9%
I save my time	4.21	very important	46%
I can shop 24/7	4.17	very important	45.1%
I can find products/services which are not available at traditional stores	3.80	moderate	31.9%
Offers are more favorable	3.83	important	32.7%
Process of purchasing is more simple and takes less effort than via mobile browsers	3.78	important	31%
The ability to locate traditional stores via mobile app	3.68	moderate	39.8%
Using mobile coupons for discounts when shopping in traditional stores	3.37	moderate	35.4%
Finding working hours of traditional stores through mobile applications	3.83	important	37.2%
Checking the availability of the product in traditional stores through mobile apps	3.77	important	30.1%
Checking the reviews of products/services through mobile applications	3.92	very important	36.3%

Note: 1 – not important; 5 – very important

Source: own work.

Examinees were also asked to describe their value on the usefulness of mobile applications to purchase products/services. For each sentence regarding problem, they were asked to choose a level of agreement starting from 1 to 5, where 1 was “I strongly disagree” and 5 was “I strongly agree”. In Table 4 we can observe statements on usefulness of mobile apps for purchasing products/services.

Table 4. Value on the usefulness of mobile applications to purchase products/services

Statement	Rating Average	Mod	Mod/Total
Apps providing wide range of information help me to make better purchase decision	3.84	agree	44.2%
Apps providing real-time and updated information help me to make better purchase decision	3.90	agree	47.8%
Apps making products recommendation based on my browsing/shopping history is useful to me	3.63	agree	43.4%
I prefer advance availability or exclusiveness of products in Apps	3.30	agree	32.7%
The Apps channel is more convenient for shopping than other channels (e.g. Internet, physical store)	3.20	neutral	44.2%
Using Apps for purchasing products/services enable me to finish my task of shopping efficiently	3.39	agree	40.7%
In general, I believe the use of Apps channel for purchasing fashion products is useful to me.	3.61	agree	38.9%

Note: 1 – strongly disagree; 5 – strongly agree

Source: own work.

Three main values of mobile apps shopping in comparison to traditional shopping are as follows: (1) providing wide range of information, (2) providing real-time and updated information and (3) making products recommendation based on my browsing/shopping history.

5. Conclusion

Mobile technology and related services influence the way in which consumers are behaving and, thus, change the way in which markets are functioning. There are predictions that by year 2020 the number of mobile users will reach one third of world population.

Therefore, there is a necessity to observe different aspects of mobile devices and applications and their usage in doing business. In this paper we explored attitudes of younger consumers in Croatia towards smartphones and mobile applications as shopping tools.

Primary research shows that almost the whole population of younger consumers in Croatia is using smartphones on very frequent basis and for a longer period. Thus, mobile technology should be reconsidered as a technology with a huge potential to generate value added

and to improve efficiency in retail industry. On the other hand there is a challenging situation of population who enjoys benefits of mobile “freebies”, thus they are becoming very hard consumer to sell something to. In addition this generation is oriented on digital socializing, so modern marketers should find the way how to use this fact for efficient marketing communication.

In Croatia in younger population there 30.4% are active mobile buyers that are purchasing several times a year via their mobile phones, and there 18% are using specialized mobile applications for retail purchases. From the aspect of young mobile shoppers, the most popular product group bought online is “tickets”.

Saving of time and availability of service 24/7 are recognized to be most important motives for using mobile applications in retail purchasing within student population in Croatia. While main values of mobile applications shopping in comparison to traditional shopping are wide range of information, real-time and updated information and available products recommendation based on individual history.

All findings presented in this paper can be used by retailers in order to adjust their communication and sales strategies towards younger consumers throughout mobile technology usage in all three purchasing phases (1) prior to purchasing, (2) in purchasing process, and (3) after purchasing. However, some future research should be oriented towards explanation and suggestion to retailers how can they adapt these findings.

Nonetheless, this paper discusses motives and benefits of mobile commerce observed by younger consumers, but there are numerous risks and obstacles of mobile commerce perceived by this population. Even though, they were the object of the survey, but are not discussed in this particular paper and have to be scrutinized in following analyses.

References

1. Archana, K., Heejin, L. (2008). Age differences in mobile service perceptions: comparison of Generation Y and baby boomers. *Journal of Services Marketing*, 22(7), 568-577.
2. Chaffey, D. (2007). *E-Business and E-Commerce*. Prentice Hall.
3. eMarketer (2015). <http://www.emarketer.com/Article/2-Billion-Consumers-Worldwide-Smartphones-by-2016/1011694#sthash.iEpRjxm3.dpuf> (accessed 24th April 2015).

4. Eurostat (2014a). *Internet usage by individuals in 2014*, [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Individuals_who_used_the_internet_away_from_home_or_work,_2012_and_2014_\(%25_of_individuals\)2_.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Individuals_who_used_the_internet_away_from_home_or_work,_2012_and_2014_(%25_of_individuals)2_.png) (accessed: 16th April 2015).
5. Eurostat (2014b). *Internet use and skills*, <https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/DAE%20SCOREBOARD%202013%20-%203-INTERNET%20USE%20AND%20SKILLS.pdf> (accessed 16th April 2015).
6. Knezevic, B., Jakovic, B., Strugar, I. (2014). Potentials and Problems of Internet as a Source of Purchasing Information – Experiences and Attitudes of University Students in Croatia. *Business, Management and Education*, 12, (1), 138-158.
7. Laudon, K. C., Traver, C. G. (2007). *E-commerce*. Prentice Hall.
8. Lazarevic, V. (2012). Encouraging brand loyalty in fickle generation Y consumers. *Young Consumers: Insight and Ideas for Responsible Marketers*, 13(1), 45-61.
9. Nielsen (2014). *E-Commerce: Evolution or Revolution in the Fast-Moving Consumer Goods World?*. August 2014, http://ir.nielsen.com/files/doc_financials/nielsen-global-e-commerce-report-august-2014.pdf (accessed 20th April 2015).
10. Rahman, S., Azhar, S. (2011). Xpressions of generation Y: perceptions of the mobile phone service industry in Pakistan. *Asia Pacific Journal of Marketing and Logistics*, 23(1), 91-107.
11. Smith, A. (2011). *35% of American adults own a smartphone*. Pew Research Center's Internet & American Life Project. Retrieved from http://www.pewinternet.org/files/old-media/Files/Reports/2011/PIP_Smartphones.pdf.
12. Turban, E., King, D., McKay, J., Marshall, P., Lee, J., Viehland, D. (2008). *Electronic Commerce 2008: A Managerial Perspective*. Prentice Hall.
13. Turban, E., King, D., Lee, J., Liang, T.P., Turban, D. (2012). *Electronic Commerce 2012: A Managerial and Social Networks Perspective*, Pearson.
14. Wai, T. K. (2012). *The study of consumer attitudes towards Smartphone applications commerce in Hong Kong fashion retail industry*. Institute of Textiles & Clothing, The Hong Kong Polytechnic University.