Awareness and Perceived Usefulness of Online Personalization Activities

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Abstract. *Businesses are utilizing personalization activities to individually communicate with their customers depending on their needs and preferences. A study with University students has been conducted to survey, if this user group is aware of personalization activities and if they perceive any usefulness of the individualized communication.*

It has been found, that the awareness of personalization activities is very high on the online retail platform Amazon, but decreases for the search engine Google and is around a half for the social media platform Facebook.

The perceived usefulness of personalization activities depends on the initial buying intention of the user. Personalization activities which aid or expand an existing buying intention of customers are perceived as more useful than personalization activities, which aim on the generation of additional buying intentions.

Keywords. personalization, survey, mobile communication, E-Commerce, social media, search engine

1 Introduction

The advances in technology allow corporations to communicate with their customers independently of place and time. Especially due to mobile communication devices such as smartphones, customers are enabled to retrieve information and experiences about products and services everywhere and every time [1].

Nevertheless, customers have to analyze the information pool that is provided via digital communication technology, because they need to find information that is relevant in regard of their personal preferences and needs [2]. To aid customers, and thus gain a competitive advantage [3], businesses started to implement personalization activities [4].

It remained unclear if customers are aware of the conducted activities by corporations, to collect information about the usage behavior as well as the needs and preferences of users and subsequently provide ideally matched information to them. It is conceivable that especially, a young, innovative and technology-affine target group of University students should know about personalization, which is influencing their daily information retrieval.

Previous research yielded results which highlighted that – from a business point of view – different personalization activities and environments of digital communication alter the characteristics and value of personalization constraints [5]. In this explorative study, the aim is to highlight, if such results are also possible from a customer and user point of view and additionally generate an overview on possible hypothesis for further research. Thus, this paper describes the results of a conducted preliminary survey with 870 University students regarding the awareness as well as perceived usefulness and perceived benefits and risks of personalization activities on social media platforms, search engines and E-Commerce platforms. Also insights into the usage behavior of mobile communication technology of the participants are provided.

The paper is structured as follows: in section one, a brief general introduction is made and in section two an introduction into personalization is given. Subsequently in section three, the methodology, structure of the survey and sample data are described. In section four the results are highlighted and grouped by the survey structure. First, the usage behavior of the participants is depicted. Subsequently, the awareness as well as the perceived risks and benefits of personalization on Facebook, Amazon and Google are illustrated. The paper is concluded and limitations are described in section five.

2 Personalization

Research on personalization is very widespread and strikes different areas ranging from Computer Science over Business Informatics and Information Science to Marketing research. Although there have been several approaches to find an overall description of

personalization, a commonly agreed definition was never found by the scientific community, because of the manifold application areas. Nevertheless, two prevalent definitions should be emphasized for this contribution (see Table 1).

Table 1. Definition of personalization

[6]	"Personalization is a process of providing relevant content based on individual user preferences, and personalized web sites obtain preferences information implicitly by tracking customer purchase or usage habits."
[7]	"Personalization is a firm's decision on the marketing mix suitable for the individual that is based on previously collected customer data."

Several contributions focus on general theory building for personalization activities [4] [8] [9] [10]. Out of the broad literature basis, one specific model should be emphasized for this contribution (see Figure 1).

	Implicit	Explicit
Content	Individuated / Categorical	Individuated / Categorical
User Interface	Individuated / Categorical	Individuated / Categorical
Channel / Information Access	Individuated / Categorical	Individuated / Categorical
Functionality	Individuated / Categorical	Individuated / Categorical

Figure 1. Classification Scheme of Personalization [4]

The classification scheme of personalization by [4] is divided into three dimensions, which are object (what), target (to whom) and origin (who).

This contribution is especially focusing on the awareness and perceived usefulness of content personalization in various application areas, whereas the other described areas are not in the focus of this study.

3 Methodology and sample

The study is based on a quantitative analysis utilizing an electronic survey tool named 'LimeSurvey'. The survey was conducted from January to March 2013 with 870 voluntary-participating University students from which 86% (n=751) finished the survey correctly. No incentives were offered for participation and the participation was also not component of any grading system. The analysis of the retrieved survey data is based on SPSS and on Excel spreadsheet analysis.

The survey consisted of 67 questions in total, whereat not all of them were obligatory for each participant and not all are directly related to the research purpose in this article. For example the types of devices and operating systems are part of another general research project but also relevant background information when assessing awareness and perceived usefulness of online personalization. The survey was divided into five separate parts. The first part asked for the usage behavior of mobile communication technology and social media of the participants. Subsequently in the second part, participants were asked for their usage of the social media platform Facebook, their awareness of conducted personalization activities and perceived benefits and risks. Part three and part four asked for similar question in regard to the E-Commerce platform Amazon and the search engine Google. The survey was closed with a section of demographic questions.

The intended target group of the study was University students in Austria. The survey participants were chosen utilizing a random sampling technique and distributed by the University Press Office to students only. Students were chosen as participants from a practical and a scientific point of view. On the one hand, they are easily accessible, which is the practical reason for this sample group. On the other hand, it is also scientifically relevant to survey this sample, because students as digital natives are more technophile as other sample groups and they are early adopters of innovations in technology and communication. Additionally, around two thirds of all students are employed in Austria, which assures them an exalted standard of living [11]. Thus, surveys in this sample group can be utilized as indicators for further research in studies throughout other samples.

From 870 retrieved responses, 112 were eliminated due to partly unanswered or invalid responses. 751 valid responses were the basis for further analysis. A demographic overview of the participants is depicted in Table 2.

Table 2. Demographic overview

	Frequency	**%**
Male	191	25.43%
Female	560	74.57%
Average age	25.54 years	

4 Results

The average age of all participants was 25.54 years, which was intended through the target group selection of University students. It was surprising, that female participants took part so actively and contributed nearly 75% of all responses.

Approximately one fourth of the survey participants are studying Natural Sciences (25.40%), another fourth are studying the Humanities (24.83%), 21.88% are registered for Business Sciences or Law studies, the rest is enrolled in technical studies, Medicine or others.

Most of the participants are Bachelor students (44.85%), followed by Diploma students (27.84%), Master students (19.81%) and Doctoral candidates (7.50%).

4.1 Usage behavior

In the first section of the survey, the usage behavior of mobile communication technology as well as social media was surveyed.

69.5% of all participants are already using a smartphone and on average they possess their phone for around 14.57 months. Smartphone penetration strongly diverges in age classes, where the youngest generation owns more smartphones than the oldest generation [12]. The smartphone penetration of Austrian University students increased by 10.4% in the last year, starting from 59.1% in March 2012 [13], which is also consistent with ongoing global trends (see Table 3).

Table 3. Smartphone possession

	Female	Male	Total
Smartphone: yes	391	131	522
Smartphone: no	169	60	229
Total	560	191	751

The market share of smartphone operating systems in the conducted study is consistent with global studies, which show that Android is by far the most used operating system with 70%, followed by iOS from Apple with 21% [8] (see Figure 2). Only marginal differences emerged with 69% market share for Android and 19% market share for Apple iOS.

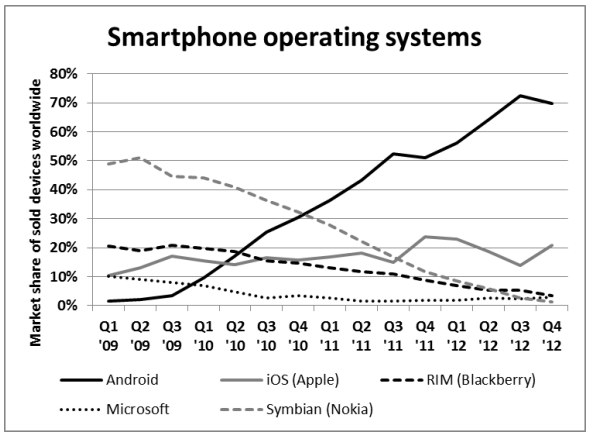

Figure 2. Market share of smartphone OS [14]

The participants answered, that they have approximately 28 applications installed on their smartphone compared to approximately 24 installed on their tablet computers. Every seventh participant (14.27%) is already using a tablet computer, where the distribution on gender is almost equal with a small advance of male participants. 17.4% of all male participants use tabled computers compared to 13.22% of all female participants.

The participants were also asked to state if they ever used the positioning functionality of their mobile phone. 46.2% of all participants answered, that they used it. This corresponds to 67% of all smartphone users. 33.9% of all participants answered, that they did not use the positioning functionality and 151 of the respondents (19.9%) are not sure if they ever used this functionality.

Asking for their social media usage behavior, 81.1% of the participants responded that they use social media platforms, 17.4% are not using such platforms and 1.5% are not sure. From the participants, who are using social media platforms, the great majority is active on Facebook (95.12%). The market leader is pursued by a group consisting of Twitter (10.08%), Google+ (9.76%) and Xing (8.94%). LinkedIn the English-speaking equivalent of Xing is used by only 2.93% of all participants. StudiVZ the german-speaking Facebook equivalent – once with a market share of 80% and more – fell down to a remaining usage rate of 1.63% (see Figure 3).

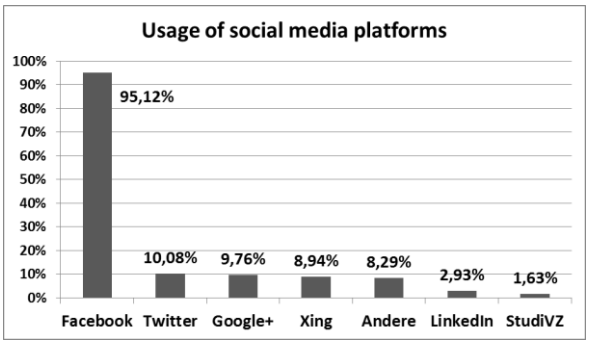

Figure 3. Usage of social media platforms

Regarding the quantitative usage of social media platforms, 53.18% responded, that they use such platforms for less than 30 minutes a day. 30.02% use it between 30 and 60 minutes a day, whereas 12.72% use it between 60 and 120 minutes a day. Only 4.08% are very heavy users of social media and spend 120 minutes a day and more on social media platforms.

The devices with which social media platforms are accessed dramatically changed throughout the last years. Now, more than two thirds of the participants (69.92%) are using their laptop to access social media platforms. Nearly every second participant (49.60%) uses a smartphone to gain access. Only 31.13% are logging in to social media platforms by their desktop PC and 66 or 8.71% of all participants are active on social media platforms using their tablet.

4.2 Facebook

Nearly 80% of all respondents are using the social network Facebook. Only 20.1% are not using the platform. The usage intensity of Facebook corresponds with the overall usage intensity of social media platforms, which shows, that most of the time, the study participants are spending on Facebook (see Figure 4).

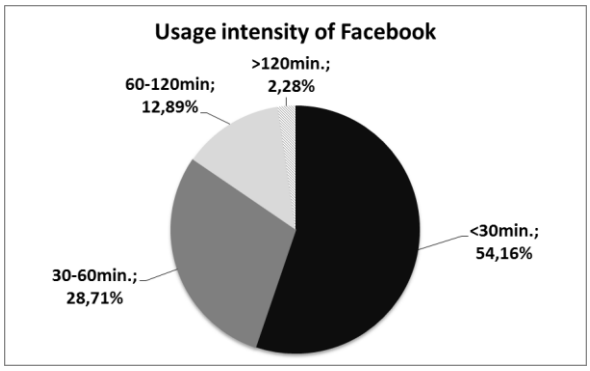

Figure 4. Usage intensity of Facebook

Although nearly half of the respondents are using Facebook for more than 30 minutes a day, only 48.20% have seen personalized advertisings on the platform. 51.80% are not aware of the fact, that the Facebook ads are personalized and matched with their individual needs and preferences. Surprisingly, the fraction of male respondents that is aware of personalized advertising on Facebook is 62.82%, whereas only 48.04% of the female respondents recognized personalized advertisings (see Table 4). Only a small part of the respondents of 8.1% has ever clicked on one of these personalized advertisings to inquire more about a certain product or service.

Table 4. Awareness of personalized advertisings on Facebook

	Female	Male	Total
Awareness: no	243	63	306
Awareness: yes	263	96	359
Total	506	159	665

Although only half of the respondents ever were aware of a personalized advertising, 53.98% of all respondents are feeling incommoded by the advertisings. 48.02% of female respondents answered, that they are not disturbed by the advertisings but only 39.62% of male respondents agreed with this answer. So, also a discrepancy in acceptance of personalized advertisings can be found here.

Similar answers were retrieved when the usefulness of personalized advertisings was surveyed. 55.19% of all respondents find personalized advertisings on Facebook useful. Female participants are less critical than male participants, because 57.14% of female respondents find personalized advertisings useful, but only 49.09% of male participants (see Table 5).

Table 5. Perceived usefulness of personalized advertisings on Facebook

	Female	Male	Total
Usefulness: no	222	84	306
Usefulness: yes	296	81	377
Total	518	165	683

The willingness to allow Facebook directly to use the name of the user for personalized advertisings is very low. Only every fifth respondent (19.67%) would agree that Facebook can use her name to enhance advertisings. The disagreement is higher for male participants (85.97%) than for female participants (78.51%).

If Facebook users were able to switch off the advertisings, 94.68% would do so even if they are personalized (see Table 6). A slight divergence is found between male and female participants, because 95.62% of female participants would switch off personalized advertisings but only 91.76% of male participants. This is surprising because the general acceptance of personalized advertisings is lower in the group of male participants.

Table 6. Switch off personalized advertisings

	Female	Male	Total
Switch off: no	23	14	37
Switch off: yes	503	156	659
Total	526	170	696

In terms of benefits and risks of personalized advertisings on Facebook, the respondents made some clear statements.

For businesses, the benefits of personalized advertising lie in the possibility to optimize the segmentation of their marketing campaigns. Hence, so the respondents, businesses are enabled to raise their revenue and benefit. For Facebook, the benefit of personalized advertisings is clearly the funding of the platform itself. For customers, the benefits are the provision of matched advertisings which could lead to interesting and relevant offerings of companies that were unknown before. But also time saving aspects were mentioned.

The answers regarding the risks of personalized advertisements on Facebook were clear. The customers are afraid, that they are spied out and that businesses use the gathered data to manipulate future buying decisions. Data privacy issues were mentioned frequently. Additionally, advertisings in general and personalized advertisings in detail are perceived as annoying. They are hindering the users of social media platforms in their original usage intention.

The answers regarding the benefits of personalized advertisings are split in three separate groups, where the businesses as advertiser, Facebook as advertising platform and the customers themselves are seen as profiteer of such activities. Nevertheless, the respondents perceive that the risks of personalized advertisings are solely beard by the customers.

4.3 Amazon

Amazon is the world's largest online retailer, which is also illustrated by the responses of the survey participants. 84.09% of all respondents are using Amazon only 15.91% are not using the online retailer.

No divergence was found between male and female participants.

The participants access the online retail platform with various devices. 46.10% are using a desktop computer, 15.58% a laptop. Surprisingly, 78.86% are using their smartphone to access Amazon. Only 6.20% of all participants are using a tablet to access Amazon. A divergence in gender usage can be spotted. While 61.88% of all male participants are using a desktop computer to access Amazon, only 40.72% of female participants are doing so. An inverted result can be described for smartphone usage. While already two out of three (66.88%) male participants are accessing Amazon with their smartphone, already 82.94% of the female participants are utilizing their smartphone to access the online retailer (see Table 7).

Table 7. Devices for Amazon access

	Female	Male	Total
Usage in general	469	160	629
Desktop	191	99	290
Laptop	71	27	98
Smartphone	389	107	496
Tablet	2	13	39

Although the usage of Amazon through smartphones is very high in this sample, only 10.22% of the respondents have ever used the mobile application of Amazon and only 7.44% have ever bought a product using the mobile application.

Opposed to the findings regarding the awareness of personalization activities on Facebook, most of the respondents are aware, that personalization is happening on Amazon. 92.57% of all participants answered, that they are aware that Amazon is suggesting products based on one's own past buying behavior and the buying behavior of other customers. 65.94% of the participants find these personalized suggestions useful. Female participants are more depreciative than male participants. 36.10% of all female participants don't agree that personalized product offerings are useful, while only 27.91% of the male participants do not perceive a usefulness of personalized product offerings based on buying behavior and personal preferences (see Table 8).

Table 8. Perceived usefulness of personalized product offerings on Amazon

	Female	Male	Total
Usefulness: yes	331	124	455
Usefulness: no	187	48	235
Total	518	172	690

Even if one third of the customers perceive that the personalized product offerings are not useful, only every fourth customer (23.81%) is not buying offered products. 57.88% are purchasing offered products at least seldom and rather seldom. 16.52% are purchasing such products rather often and 1.79% of all customer are often purchasing personalized product offerings based on customer buying behavior (see Figure 5). The study highlights that female participants are more often buying personalized offerings than male participants. While the 32.41% of the female participants state that they purchase 'rather seldom' only 25.44% of the male participants say so. But only 23.86% of all female participants state that they purchase personalized product offerings on Amazon 'seldom' opposed to 37.28% of all male participants. One fourth (25.05%) of all female participants were completely able to resist the purchase ('never') but only one fifth (20.12%) of all male participants.

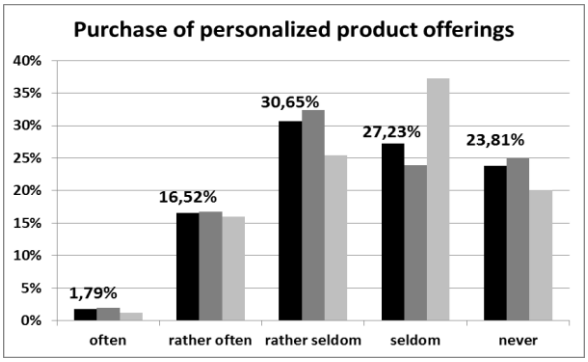

Figure 5. Purchase of personalized product offerings on Amazon

Regarding the benefits and risks of personalization activities on Amazon, the participants responded:

There are several benefits related to personalized product offerings on Amazon. On the one hand, customers are enabled to compare prices to find the most suitable offering for them. Additionally, it helps to save time if related products are displayed or if attachments for a selected product are highlighted. On the other hand, customers perceive it is easier to find a suitable product, which they would like to buy, than on other online shopping platforms. A main respond was the differentiation between Facebook and Amazon. Facebook is not a platform for purchases, so personalized advertisings or offerings are not equally useful than on Amazon. Amazon is a platform, which is used if customers would like to buy a product. Thus, the participants find it helpful if personalized offerings are displayed because they perceive it as assistance in their initial intention and not as manipulation.

As risks of personalization on Amazon was perceived, that the gathering and analysis of data by Amazon could lead to privacy issues. Nevertheless, this perceived risk was not as distinctive as it was for Facebook. Additionally, customers fear that Amazon could tempt them to purchase products which they do not need. It was also mentioned, that the offered multiplicity of products is affecting the initial buying intention and makes the buying situation more complex. Some participants also state that they are feeling pursued. Finally, participants also revealed

that they are annoyed by the marketing messages of Amazon and that the algorithm which should provide suitable products is not working correctly because they cannot find relevant products.

4.4 Google

The search engine Google is used by 98.8% of the study participants. Regarding the search engine Google, 77.94% of all participants are aware of the fact, that Google personalizes the search results. 75.33% are also aware, that the Google proposes personalized search terms. 55.25% state that they find it useful to received personalized search results. 57.08% perceive it as useful that personalized search terms are proposed by Google. Nevertheless, there are again differences between male and female participants (see Tables 9 to 12).

While 24.73% of female participants were not aware of the fact, that the search results are personalized, only 14.21% of male participants did not know this fact. With 26.94% (female) and 17.98% (male) the numbers are almost equal for the awareness of the proposition of personalized search terms. The perceived usefulness also differs: 43.32% of female participants do not find it useful that Google personalizes the search results, while 48.93% of male participants are refusing personalized results. 41.10% of female participants state that personalized search terms are not useful, while 48.14% of male participants say so.

Table 9. Awareness of personalized search results on Google

	Female	Male	Total
Awareness: yes	420	163	583
Awareness: no	138	27	165
Total	558	190	748

Table 10. Perceived usefulness of personalized search results on Google

	Female	Male	Total
Usefulness: yes	314	96	410
Usefulness: no	240	92	332
Total	554	188	742

Table 11. Awareness of personalized search terms on Google

	Female	Male	Total
Awareness: yes	404	155	559
Awareness: no	149	34	183
Total	553	189	742

Table 12. Perceived usefulness of personalized search terms on Google

	Female	Male	Total
Usefulness: yes	321	98	419
Usefulness: no	224	91	315
Total	545	189	734

Coming to personalized ads on Google, 71.36% of all participants have already seen a personalized advertising on Google. Only 20.0% of all male participants and 31.11% of all female participants have never seen such advertisings (see Table 13).

From the participants that are aware of personalized advertisings, 12.38% have actively clicked on one of these ads.

Table 13. Awareness of personalized ads on Google

	Female	Male	Total
Awareness: yes	381	152	533
Awareness: no	172	38	210
Total	553	190	743

The perceived usefulness of such ads is rather low. Only 23.81% of all participants find that personalized advertisings on Google are useful, while 76.19% stated that such advertisings are not useful. The distribution for male and female participants are almost equal (see Table 14).

Table 14. Perceived usefulness of personalized advertisings on Google

	Female	Male	Total
Awareness: yes	130	41	171
Awareness: no	407	140	547
Total	537	181	718

The benefits of personalization activities on Google are described by the participants as: enhances the easiness of searches on the Internet. Personalized search terms and personalized results are time saving, because relevant results and terms are already provided, which is a fast and efficient way of retrieving information. Thus, the personalization activities of Google are useful. Personalization of search terms can also help to overcome language barriers. All in all, the personalized results and search terms enhance the relevance of the results which is beneficial for the users. For businesses the personalization activities of Google could help to raise the customer buying intention.

The risks of personalization activities on Google are manifold. As on Facebook and Amazon, users of Google are afraid, that privacy issues could arise. For example, that Google is able to profile the daily habits of an individual and sell it together with million other data sets to marketing companies. But also the constriction of possible offerings and results is seen as risk. Possible relevant results are eliminated and due to this filter, inferior providers of products and services are ranked at the top. It also constricts the cognition of the 'real world'. Additionally, it is annoying and could be utilized to manipulate customers. Finally, the utilized algorithm generates personalized results and search terms, which are not relevant for the individual.

5 Conclusion and Limitations

The exploratory study revealed that the awareness and perceived usefulness of personalization activities on social media platforms, online purchase platforms and search engines diverges among possible users within the young generation in Austria.

While the awareness of personalization activities on Amazon is very high (92.57%), it decreases if the focus falls on Google (around 75% to 77%) and only a half of the participants is aware that Facebook implemented personalization activities (48.20%).

Similar is the situation regarding the perceived usefulness of personalization activities. While two third (65.94%) of the participants find personalization activities on Amazon useful, only around a half of the participants perceive the usefulness of personalization on Google and Facebook.

In any case, the perceived usefulness was strongly interrelated with the intended usage motivation of the platform. It can be stated, that personalization activities, which aid or expand an existing buying intention of customers (e.g. Amazon) are more accepted than personalization activities, which aim on the generation of buying intentions (e.g. Facebook or Google).

As a main conclusion of this exploratory study, it was found, that the previous results which highlighted relevant differences in possible personalization activities from a business point of view in regard of the activity, the industry and the power of personalization constraints, can be basically confirmed. Also from a user point of view, these main differences regarding the activity and industry are observable. It is now crucial to develop a theoretical solid hypothesis for this phenomenon, which can be tested and were these and further results can be validated in more depth.

Due to the reason that a quantitative research design was chosen, the limitations lie in the retrieved details. Based on the gained results, further research should be conducted in terms of constructing relevant hypothesis based on stronger theoretical foundations and conducting in-depth interviews to discover more motives and stimuli of customers in regard of personalization activities and subsequent buying intentions.

Additionally, a very young, female and high-qualified sample participated in the study. While a young and high-qualified sample was intended due to the study design, the preponderance of female participants was not. Due to this reason, the gender divergences were depicted to reduce this limitation. The focus on student participants reduces the generalizability of the survey results but was intended in terms of the research design.

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