ANALYSIS OF ONLINE USER DATA WITH SURPRISING RESULTS

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Abstract

In this scientific paper the differences of the use between mobile applications ("apps") and internet-based online portals ("browser") were examined. The analysis object was an Austrian news portal, which in October 2015, in addition to the classic online portal, offered its users a mobile app. This study analyzed the access and usage data of the news portal in a first step with Google Analytics and thus drew comparisons between "classic" usage processes via Internet browsers and accesses via "Apps". In a second research step, a user survey with almost 400 participants was carried out. It was measured how users perceive the use of media content via mobile applications and whether there are differences to the evaluated online statistics.

We saw that the users stayed on the app almost twice as long on the website than when accessing the browser. When compared to page calls, apps are obviously a disadvantage, in contrast to web browsers. While the app users call an average of 1.12 articles per usage, there were 1.79 item calls per usage for accesses via the mobile / tablet / desktop browser.

The additional online survey among users of the news portal was able to evaluate almost 400 valid questionnaires. One of our surprising results showed that users are obviously not aware of the longer dwell time in apps. While the statistics clearly proved that content is viewed in apps for a longer period of time, the user appears to be different and does not feel any difference here. And another result was astonishing: The users have the impression that they read more articles in apps than on the website. while our data proved that more articles are read when accessing the desktop.

Keywords: Internet usage, media use, application, app, desktop, differences, online survey

1 INTRODUCTION

How is the use of apps different from normal desktop usage? And how do users rate their Internet use? While a number of studies have already been carried out, a master thesis (Leitner, 2016, supervised by Peter Schneckenleitner) at the University of Applied Sciences Kufstein Tyrol has aimed to compare the

perceived user behavior with the measured user behavior. Although the analysed news portal does not want to be named, it is worth taking a look at the surprising insights gained.

2 THEORETICAL BACKGROUND AND STATUS QUO

The "Technology Acceptance Models" (TAM) (Davis, Bagozzi, & Warshaw, 1989), originally designed to predict the acceptance of computers, is intended in this case not only for the degree of acceptance of mobile devices and apps, but also for knowledge about factors which significantly influence the acceptance. The „perceived usefulness" as well as the „perceived ease of use" or "usability" are regarded as the most important influencing factors on the acceptance of a new technology of the users.

The perceived usefulness is described as a probability with which the use of the respective technology increases the productivity of the user. The perceived usability refers to the extent to which the use of a technology is associated with effort. The term "effort" is not defined by Davis, which is why it is assumed at this point that both expenditure of time, as well as mental and physical expenditure is meant.

TAM assumes that both the perceived usability and the usability influence the attitude of the users to a particular technology. While the perceived benefit of an application also has a direct impact on users' usage, "usability" influences the perceived benefits and thus only indirectly the user intention. This interplay of factors ultimately results in whether a technology is used and thus accepted by users or not. This means that the decision of whether users consume content through mobile devices and "apps" depends heavily on how useful, how user-friendly, and how appealing (design) the respective technology is felt. These aspects are therefore asked in the empirical part of the study in order to obtain conclusions about the acceptance of mobile applications of our investigated news portal.

What is the current situation regarding online use in Austria? The Reuters Digital Report (2016, p.63) provides insights into the channels on which Austrians consume their news. Over the classic desktop with 64% most messages receive the Austrian users. However, the share has fallen by 3 percentage points compared with the previous year. On the other hand, the share of the smartphone has grown by 10 percentage points and is 51% in 2016. In addition, the use of tablets rose by 3 percentage points to 21 percent. Easily modified data shows a recent study (statista, 2017) about the devices with which the users in Austria access the Internet. With 68%, the smartphone is the number 1 preferred device, followed by notebook (58%), desktop PC (44%) and tablet (34%).

Mobile web usage in Austria is generally high. According to the Mobile Marketing Association Austria (MMA, 2016) between 78 per cent and 93 per cent of the Austrians access Internet by mobile devices - depending on the respective state.

In terms of advertising, OMS (Steinbrenner, 9.5.2014) has investigated mobile and classic daily newspaper web pages. Mobile showed strengths, which is about ten per cent above the desktop advertising, above all with brandawarness. Desktop advertising is better for the image, which is mainly due to the more extensive possibilities of emotional advertising like storytelling.

3 RESEARCH DESIGN AND METHODOLOGY

The present study includes two steps of analysis. In a first step, Google Analytics data were evaluated and then hypotheses were checked. Google Analytics is a free web analytics tool, which allows, depending on the configuration, a variety of user data to be recorded. The data analysis only takes into account data from 21 October 2015, the date of the app launches. Web application data also starts with the start of the app introduction, in order to exclude any seasonal differences in media usage behavior and to make the data of the individual platform comparable.

The following hypotheses are to be examined:

H1: Content is viewed in apps longer than with browers (desktop).

H2: In apps, on average, more sites are accessed than on desktop.

In step 2, a computer-based, written online user survey was performed to re-examine the analyzed data. It was of particular interest to compare hard facts with the perceptions and opinions of the users. In order to generate valid results, the "concentration principle" was used. The concentration principle deliberately excludes units of the population which are not relevant for the survey. Since the questionnaire for the survey in this work deals with differences in the use of the app in contrast to the browser usage, only those app users are relevant, who have already used articles by browser before the app was introduced. Thus two "filter questions" were asked at the beginning of the questionnaire. Ultimately, the targeted sample size of

200 people was clearly exceeded. After adjustment by the filter questions, a total sample of 382 persons was obtained.

4 RESULTS

4.1 DATA ANALYSIS

The Google Analytics data clearly shows that the average visit duration in apps is significantly higher than in the case of Internet browser access. While users spend an average of 76 seconds on the website, this value is 147 seconds when accessed via the mobile application. Media content is thus viewed in apps by 93 per cent longer than via Internet browser. However, since the duration of the visit is influenced by factors such as "usability", this does not necessarily mean that users actually consume more content in apps. For this reason, the "application usability" criterion was checked with a subsequent survey using a control question.

Tab. 1: Google Analytics Data shows that users spend more time on apps than on browsers.
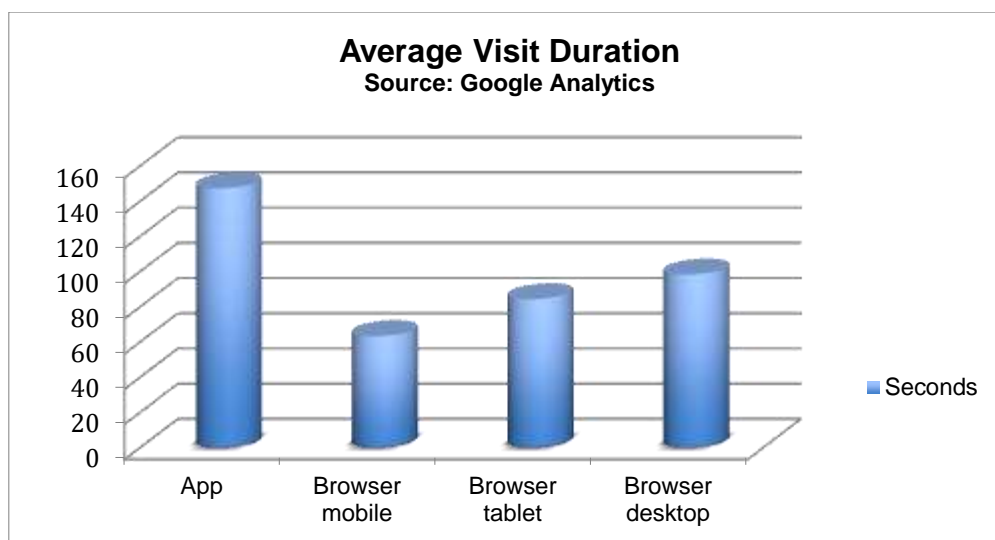
With 98 seconds desktop-users are on average the longest on the website. However, desktop also lagged behind the app. At the shortest, namely 63 seconds, recipients of mobile devices stay on the website. Accesses via tablets, lie in the middle with 84 seconds.

Since more page views mean usually higher advertising revenues, the number of page impressions is a key success factor for online media portals that finance themselves exclusively through advertising.

Tab. 2: More web-pages are viewed when accessed by browser than by an app.
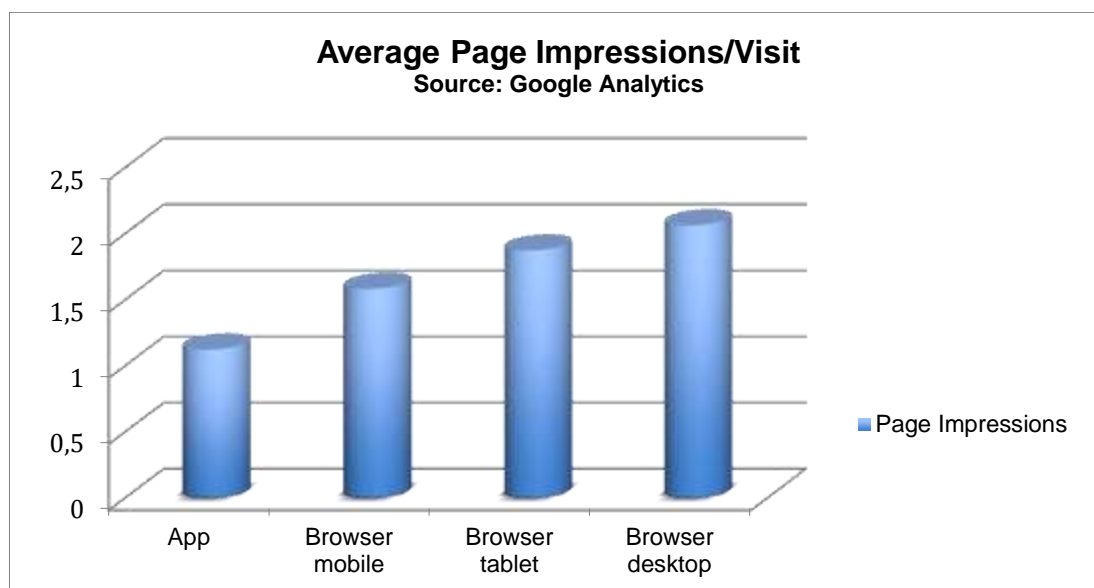
With the number of page impressions, apps are compared with browsers obviously at a disadvantage. While users of the app access an average of 1.12 articles per usage, this is an average for browser access of 1.79 articles per usage. The small number of page impressions can be explained that users obviously only read the latest article in the app.

For our hypotheses, this means:

H1: Content is viewed longer in apps than on the site: verified
Articles are viewed in apps longer (+93 %) than on Internet browsers.
H2: In apps, on average, more content is viewed than on the website: falsified
In apps fewer articles are read than via Internet browsers. The difference is 0.67 article per usage.

4.2 Online Survey

For the results of the online survey, valid statements of 382 people were considered. The following questions were asked:

"In the app I view articles longer than on the website"

"In the app, I view more more articles per reading process than on the website"

"This app is clear and easy to use"

"This app is useful"

Central influencing factors according to the "Technology Acceptance Model" were asked. In addition, the "usability" control question to the app served to rule out errors in the interpretation of the measurement results. This results in hypothesis 1:
H1: Users have the impression of viewing articles in the app longer than on the website.

Tab. 3: Our users do not see any difference between app and browser according the dwell time.

"In the app I view articles longer than on the website."
Source: Online Survey
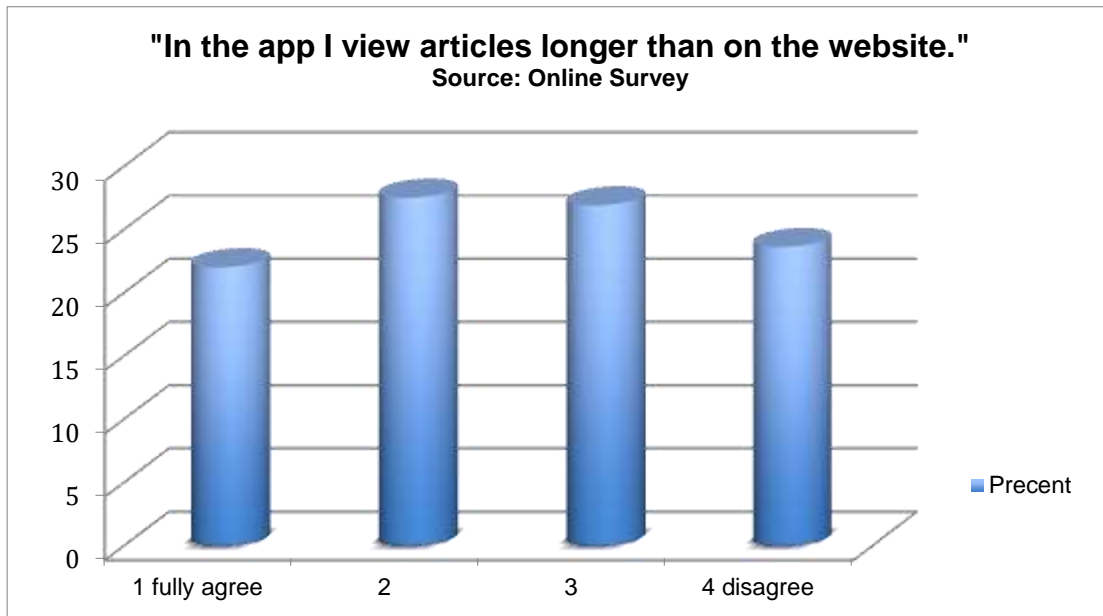
It is obvious that there are no trends among the users in a specific direction. The middle and outer scale points are nearly identical. This was the only KPI surveyed, with no tendency to be identified. App users do not have the impression that they spend more time consuming media content on the app than on the site. H1 was thus falsified.

Our next hypothesis was:

H2: Users have the impression to view more articles in the app than on the site.

Tab. 4: Our users are convinced to view more articles in an app than on the website.

"In the app I view more articles than on the website."
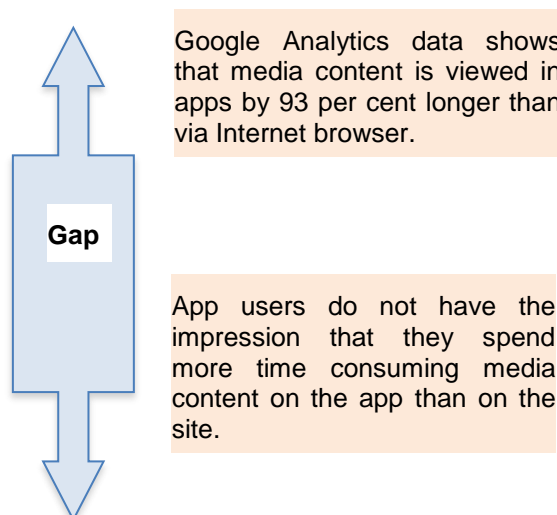**Source: Online Survey**
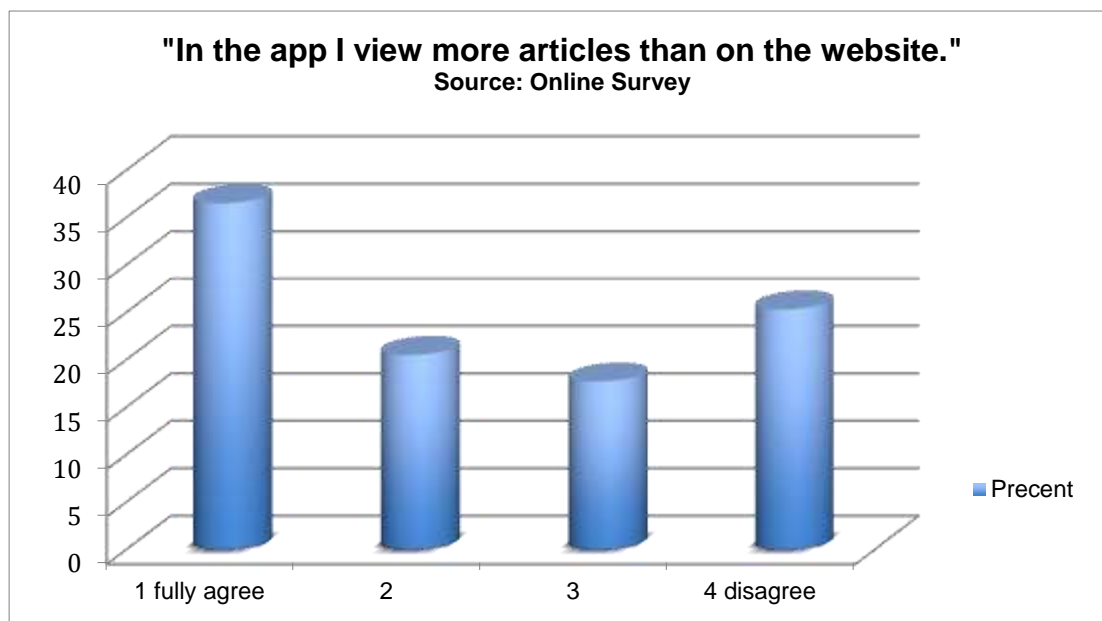
The data clearly shows that the users are convinced to view more articles in apps than on the website. With 57 to 43 percent, the users agreed (fully agree/agree) with the statement "to read more articles in the app." H2 is thus verfied.

5 RESUME & IMPLICATIONS

Looking at the Google Analytics data it is a fact that users view article in apps by 93 per cent longer than on the website. Data from the survey reveals, however, that users are not aware of this difference in media usage.

Fig. 1: Differences between data und survey concerning the dwell time

Google Analytics data shows that media content is viewed in apps by 93 per cent longer than via Internet browser.

Gap

App users do not have the impression that they spend more time consuming media content on the app than on the site.

The explanations for this can be manifold. On the one hand, the users might simply need more time to orientate because of a poor usability of the app. However, this was excluded in our study by means of control questions. The overwhelming part of the user describes the app as clear and easy to use. The users are thus actually more faced up to content in apps, it is few browsed, but more read. This statement would also underpin the gained insight that the average number of articles viewed is lower in the app than in the browser. While an average of two articles per usage is viewed when accessing the desktop, users view only one article in apps. But users are convinced to view more articles in the app than on browsers.

Fig. 2: User feelings are completely contrary to the collected data.
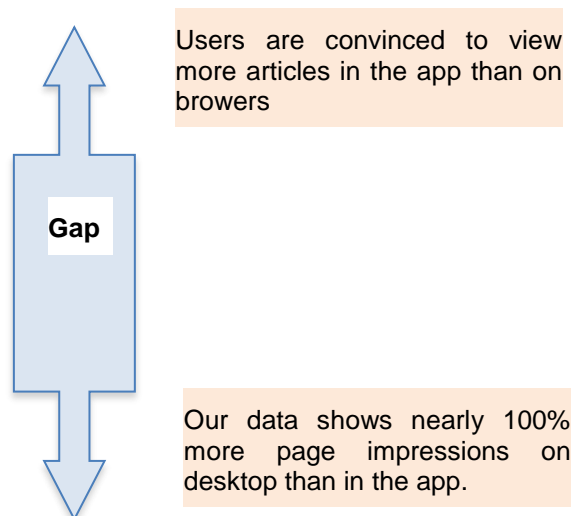
However, the fact is that users are not aware of the differences in media usage and their statements are completely contrary to the collected data. This aspect puts general user surveys (about the usage behavior of apps, etc.) into a completely different light. The reliability of results from user surveys - a proven tool in market research - is therefore to be questioned critically. Measured data is thus the most valid instrument for determining differences in media usage behavior. However, measurements only provide data for "what" and not for "why". Also a role in the collected data could play the different attitude to the information search of the users. Are information actively searched by users or is there a passive information reception? Here, classical theory models from communications science would be applicable, such as the Informational Utility Approach (Atkin, 1973) or the Uses & Gratification Approach, UGA (Katz et al., 1974). The UGA for example focus is on what people do with the media and it characterizes the users as active and motivated in their media use.

What are the implications of the findings? The fact that the user has the impression to read more articles in the app can mean an increased involvement to brands and contents. This would point to an increased advertising impact of apps. But this is just an assumption, our study does not manifest that. It means further research is needed here. Other studies are also missing, more data could help to improve our study. We investigated a news portal. How would the results in other sectors look, would there be sector-specific differences? The results could also be different under other sociodemographic conditions (gender, country, culture, age-specific, etc.). Our study thus provides numerous links for further research in an interdisciplinary field.

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