

FREQUENTLY USED MOBILE SHOPPING APP USAGE AND CHARACTERISTICS FOR IRISH UNIVERSITY STUDENTS

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ABSTRACT

An exploratory study of mobile shopping application (app) use is described. Data was collected via an electronic questionnaire to students enrolled in a business courses at a university in Ireland. The results showed there are two categories of apps. One category contains special purpose or unique functionality. The second category contains apps of general or multi-purpose functionally. Respondents' used their most frequently used app three hours per day, between the eight to eleven in the evening. Additionally, the company providing the most frequently used app also had a physical store, the majority of respondents' purchases were made online.

Keywords: mobile apps, shopping apps, mobile app usage

INTRODUCTION

The continuing development of mobile applications (apps) has changed a variety of behaviors and actions by the users of these apps [3, 6, 9]. The functionality and services provided by an app allows users to complete most daily activities on mobile apps without needing the full functionality of a computer application. Over 2.8 million apps are available on the different app stores and are categorized by the functions and services they provide. According to the eMarketer website, shopping app availability has increased dramatically and 54% of U.S. smartphone users are using a shopping app [2]. The purpose of this research is to explore, in a preliminary fashion, the characteristics of a specific group of shopping app users, both in terms of user and shopping characteristics. The user group studied are university students, who tend to be frequent users of mobile apps and a central target for mobile shopping [8].

The remainder of the manuscript is organized as follows. First, the literature underlying the study is presented followed by a discussion of the data. Included in this latter section is a discussion of the data collection process and the resulting sample characteristics. The next section presents the statistics representing the target population's use of shopping apps. The manuscript closes with the presentation of a discussion followed by conclusions and directions for future research.

LITERATURE

The introduction of the iPhone in 2007 revolutionized how individuals interact with mobile apps through a touch screen. The continued growth of smartphones in terms of use and capabilities

has further driven the ubiquity of mobile apps [1, 7]. As a result, understanding app use is a meaningful undertaking. The technology acceptance model provides insights regarding the behavior of users to accept technology [12]. A user is likely to accept the technology, in this case mobile apps, if they perceive the app to be easy to use and has perceived usefulness. In mobile commerce though ease of use was not found to influence behavioral intent [13]. This interesting finding opens new opportunities to understand mobile commerce behavior specifically as related to shopping apps. In addition to 54% of U.S. smartphone users having a shopping app, 15% of the U.S. population buy online weekly with eight out of ten people claiming to be online shoppers [2, 11]. There is a good understanding of the U.S. population mobile use and particularly shopping apps, but what are the behaviors of people beyond our borders?

As part of a larger study, the researchers were interested in understanding Irish college student behavior related to shopping apps. Other international populations have been investigated for attitude toward, and behavioral intention to use mobile apps such as in India and Korea, but limited research of Irish mobile app behavior was been conducted [4, 5, 10]. This exploratory study was conducted to understand the types of shopping apps used by Irish college students. In future research, the aim is to compare these results to a similar U.S. population of online shoppers and shopping app users.

THE DATA

The data were collected by distributing the URL to a web-based questionnaire via email to students at an Irish university. The students were enrolled in either an undergraduate or graduate marketing course. A total of 132 students were contacted and 122 responded creating a 92% response rate.

The questionnaire asked for responses on a variety of shopping app questions as well as respondents' demographics. These demographics included age, gender, and the hours the respondents work each week while enrolled in classes. The average respondent age was 20.52 with a median of 20, and a maximum of 44 and minimum of 18 years old. The third and first quartiles were 21 years old and 20 years old respectively. Females composed 59.20% of the sample and males 40.80%. In total, 88.71% of the respondents reported working at least part-time each week while enrolled in classes. In fact, nearly 72% of the respondents reported working between 5 to 22 hours weekly while enrolled in school. Thus, a rough sketch of the average respondent in the sample is a female who is 20 to 21 years old and works part-time while enrolled in school. The full details of these demographics are displayed in Table 1.

TABLE 1
The Sample Characteristics

Age

Mean	STD	n	Maximum	Minimum	Quartile 3	Median	Quartile 1
20.52	2.72	122	44	18	21	20	20

Gender

Female 59.20%	Male 40.80%
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Hours Worked Weekly While Enrolled in Class

Hours Worked	Percentage of Respondents
5-10	18.55%
11-16	25.81%

17-22	27.42%
23-28	11.29%
29-34	4.03%
35-40	1.61%
Not employed	11.29%

THE USE OF SHOPPING APPS

Respondents were asked to report the percentages of the total apps on their smartphone across several categories. There were 12 categories of shopping apps into which these students reported the apps installed on their smartphone as a percentage of all installed apps. Among these categories, nine had at least 70% of the respondents reporting they had none of these apps installed. The nine categories were: Auction/Resell; Beauty; Electronics; Groceries; Household & Everyday Goods; Jewelry; Outdoor Gear; Vehicles; and Other. The percentages of respondents with zero shopping apps installed in these nine ranged from 72.58% to 93.60% with all the details reported in Table 2. These nine categories of mobile shopping apps which the respondents tended not to install on their smartphones appear to be somewhat unique or specialty apps. In other words, the functionality of these apps are for a very narrow, special purpose not very common to most shoppers. As a result, these functionalities are not commonly needed, and these apps not installed frequently.

The remaining three categories, Clothes & Shoes, Entertainment, and Multiple Category apps have a greater number of respondents in the non-zero category of all apps installed on the respondents' smartphones. In the case of Clothes & Shoes, 27.87% of respondents reported they had no such apps installed; 18.04 of respondents had these apps as ten to thirty percent of all phone apps; 31.16% fell in the category of 40% to 70% of installed apps; and 10.66% of respondents reported that these apps made up 90% to 100% of all installed apps. For the Entertainment category, 49.18% of the respondents reported that this category composed zero percent of all installed phone apps while 36.07% of the respondents had this category at ten to thirty percent of all their installed phone apps. The final app category is a Multiple Category (e.g., Wal-Mart, Amazon) app. In this category, 58.40% of the respondents reported having installed no such app on their smartphone while 24% reported these apps composing ten to thirty percent of all their apps, and 8.80% indicted that this category composed forty to fifty percent of all their phone apps. All the details for these last three categories are also reported in Table 2. The last three categories of mobile apps, in general, allow users to research and purchase more items and potentially more frequently purchased items. This is a contrast to the first nine categories discussed above, which appear to be more specialized.

The final four statistics reported in Table 2 provide insights into how the respondents use their most frequently used shopping apps, as opposed to which apps they use. The mean number of hours each week that this most frequently used app is three, with a minimum of zero hours and a maximum of 20 hours. If the company providing the app has a brick and mortar presence as well as an online presence, respondents reported making 63.74% of their purchases online and 13.40% of their purchases made in store. For the online purchases, the maximum of these purchases was 100% with a median of 99%. Similarly, for in-store purchases, the maximum percentage was 100% and the median was 0%. The use of these shopping apps occurred most frequently during the 8:00PM through 11:00PM evening hours.

TABLE 2
The Statistics of Mobile Shopping App Use

Percentage of Shopping Apps on Phone	
Auction/Resell	
Percentage of Shopping Apps	Percentage of Respondents
0	72.58
10-30	20.17
Beauty	
Percentage of Shopping Apps	Percentage of Respondents
0	73.39
10-30	17.76
Clothes & Shoes	
Percentage of Shopping Apps	Percentage of Respondents
0	27.87
10-30	18.04
40-70	31.16
90-100	10.66
Electronics	
Percentage of Shopping Apps	Percentage of Respondents
0	85.00
10-30	9.17
Entertainment	
Percentage of Shopping Apps	Percentage of Respondents
0	49.18
10-30	36.07
Groceries	
Percentage of Shopping Apps	Percentage of Respondents
0	87.80
10-30	5.69
Household & Everyday Goods	
Percentage of Shopping Apps	Percentage of Respondents
0	93.60
5-30	5.60
Jewelry	
Percentage of Shopping Apps	Percentage of Respondents
0	93.60
3-10	4.80
Multi	
Percentage of Shopping Apps	Category (Amazon/Walmart)
0	58.40
10-30	24.00
40-50	8.80
Outdoor Gear	
Percentage of Shopping Apps	Percentage of Respondents
0	93.60
5-10	4.00

Vehicles	
Percentage of Shopping Apps	Percentage of Respondents
0	80.80
10-30	11.20
Other	
Percentage of Shopping Apps	Percentage of Respondents
0	83.87
10-30	11.29

Time of Day Most Frequently Used App is Used

Time of Day	Percentage of Respondents
8:00PM	22.64
9:00PM	16.04
10:00PM	19.81
11:00PM	8.49

Hours Per Week the Most Frequently Used Shopping App is Used

Mean	STD	n	Maximum	Minimum	Quartile 3	Median	Quartile 1
3	3.67	99	20	0	4	2	1

If the shopping app has a store presence; Percentage of online purchases

Mean	STD	n	Maximum	Minimum	Quartile 3	Median	Quartile 1
63.72%	43.07	123	100%	0%	100%	99%	10%

If the shopping app has a store presence; Percentage of in-store purchases

Mean	STD	n	Maximum	Minimum	Quartile 3	Median	Quartile 1
13.40%	26.43	124	100%	0%	5%	0%	0%

DISCUSSION

While this study is exploratory in nature, there are some tentative results worth mentioning. Within the context of the respondents, who appear to fit the profile of traditional university students, nine of the shopping app categories appear on respondents' smartphones if they have a special need for the embedded functionality. Examples of these categories include Jewelry, Auction/Resell, and Outdoor Gear. The remaining three categories, Clothes & Shoes, Entertainment, and Multiple Category apps, have greater general appeal and appear on respondents' smartphones more frequently. This may be due to the broadness and popularity of these categories or the underlying e-tailers.

The data collected regarding how respondents use their shopping apps provide some initial insights as well. On average, respondents use their most frequently used shopping app three hours a week. Additionally, most of this use occurs in the evening hours (i.e., 8:00PM through 11:00PM). In terms of the percentage of purchases made, the majority of these are online purchases with a much smaller percentage made at brick and mortar locations.

CONCLUSIONS AND FUTURE RESEARCH

Based on this exploratory study some cautious, tentative results are provided. Among the sample of respondents, whose profile appears to fit that of a typical university student profile, there are two groupings of most frequently used shopping apps loaded on respondents' smart phones. The first category were apps with specific functionality which users load on their smart phones as their unique needs required. Within this category, the majority of respondents did not have any of these apps on their smart phones. The second category had much fewer types of most frequently used apps. However, these apps had much greater functionality than those in the former category. As a result, many more respondents had these apps on their smart phones and were designated as their most frequently used app. When the shopping app's company had both a brick and mortar location as well as the ability to shop online, the respondents overwhelmingly purchased online. Finally, these respondents used their most frequently used app three hours per week on average and most commonly shopped between 8:00PM to 11:00PM.

As mentioned earlier, this study is exploratory in nature. It is also the initial part of a large research effort. The next study in this effort is to compare these results from Irish university students to the same results for university students in the United States. The follow-on study would be to compare respondents' most and least frequently used apps for both groups of university students as well as the shopping app comparison.

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