

The Effect of the Attractiveness of Mobile Music Applications on the Level of User Loyalty

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Abstract

The purpose of this study is to investigate the relationship between application attractiveness and loyalty to mobile music applications. The application attractiveness is operationalized into four dimensions: richness of music contents, music app design quality, music app functionality, and promotion. The hypotheses are postulated and tested using a sample of 370 student respondents from Henan Polytechnic University and Henan Institute of Technology, China. The result shows that there is a positive correlation between loyalty and three application attractiveness aspects: richness of music contents, music app design quality and music app functionality. Based on the results of this study, the research put forward constructive suggestions about improving mobile music application loyalty. Finally, several conclusions, managerial suggestions, limitations and future research are proposed.

Keywords : Mobile Music Applications, Loyalty, Application Attractiveness

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1. Introduction

1.1 Background

With the rapid growth of the pool of smart phone users, and the transition of music industry medium into the mobile Internet, smart phones have quickly become the most important carrier of music. Ease of access to network of music transferred from the traditional PC desktops to mobile music apps, together with the seamless integration of online listening, downloading, sharing and other flourishing rich features of mobile music applications gradually changes the way people listen to music. According to IiMedia Research's "Q3 China Mobile Music Client Market Research", data shows that in the third quarter of 2014, the number of Chinese Mobile Music clients has reached 317 million, an increase of 7.8% over the previous quarter. The active users of mobile music applications follow a steady growth trend.

However, compared to the situation in traditional business environment, in the network environment, consumers' brand loyalty has become ever more fragile. Networks, as a transparent and open information space, give users a richer brand choice. Such changes makes it easy to transfer the desire for continual use or purchase. For this reason, establishing and maintaining brand loyalty in the network environment has become a serious problem that must be addressed by management [Aaker, 2009].

2. Literature Review

At present, there is no unified definition of mo-

bile music applications in the industry. Service provider (SP) mainly refers directly to those businesses that provide digital music services to users. Online music market service providers include major digital music sites, such as Xiami, a music network, which offers a service platform where providers integrate music content and orient artists (as original content creators) to issue and sell their digital music. In the mobile music market, value-added service providers include Network-based players such as QQ Music, Kugou Music, Xiami Music, NetEase Cloud Music, which provide users with diverse digital music experiences. User experience elements, from the perspective of a website designer, include such dimensions as user experience strategy, scope, structure, skeleton, and surface.

2.1 Richness of Music Contents

In the context of web design, contents have been identified as the most important characteristic contributor to the loyalty of web sites and as one of the key reasons that users repeat to use a site [Lohse and Spiller, 1998; Nielsen, 1999; Ranganathan and Ganapathy, 2002]. Agarwal and Venkatesh found that content was weighted as the most important MUG (Microsoft Usability Guidelines) category contributing to loyalty of web sites across multiple industries both among customers and investors [Kärkkäinen and Laarni, 2002; Palmer, 2002].

Lohse and Spiller suggest that the availability of relevant content is one of the key reasons for a user's return to a web site. In the context of mobile sites, the ability to locate relevant con-

tent quickly has been identified as the single most important factor in mobile service use [Lohse and Spiller, 1998; Ballard and Miller, 2001].

2.2 Music App Design Quality

User interface design is an essential element in Web application development. Design quality of a web site has been a subject of extensive study. Kaikkonen and Ruto found that users of mobile phones preferred a flatter hierarchy to a deeper hierarchy, and tended to make extensive use of keyword search despite the input limitations of the devices [Venkatesh and Ramesh, 2006].

A brand is helpful in maintaining customer loyalty and the long-term operation of a company. High service quality will increase customer satisfaction and make the users more willing to recommend the website to other people and generate the effect of public praise marketing [Casaló et al., 2008; Sweeney and Swait, 2008; Hoehle and Venkatesh, 2015].

2.3 Music App Functionality

The decision-making process of online shopping will affect the complicity of shopping behavior. Therefore, good recommendation function will help consumers to make decisions. The most popular supporting search functions of online music stores are songs or music ranking, album category, and the introduction of the album or singer, and real time recommendations [Lee and Kwon, 2008]. For a music search sys-

tem, the music content buyers can also get indirect benefits by getting segmented ranking slots that may reduce search costs [Yoo and Kim, 2012].

2.4 Promotion

A well-planned trial and service promotion can attract more users. In addition, in relation to membership activity & discounts, a better member discount program and member activities can enhance the loyalty of members [Sandulli, 2007; Chen et al., 2009].

2.5 Loyalty

Because of the growing importance of Internet services, several researchers have attempted to find ways to improve website fidelity and increase consumer's intention to buy [Abbott, Chiang et al., 2000]. Jacoby and Chestnut [1978] explore the meaning of loyalty by distinguishing the psychological loyalty from behavioral loyalty. However, it is not enough to explain loyalty only by the theory of attitude or behavioral loyalty. Oliver subsequently defines brand loyalty as "a consumer's deep commitment to the brand that will continue to re-purchase or re-visit the product or service in the future) [Oliver, 1999]"...

Following Oliver's view this research accepts that loyalty includes both behavioral loyalty and attitude loyalty, that is, customers' preference of products, their behavior of continued use, and intention to promote purchase via word of mouth.

3. Research Model and Hypothesis

Hypothesis

- H1** : Richness of Music Contents has positive effects on Loyalty of Mobile Music Applications
- H2** : Music App Design Quality has positive effects on Loyalty of Mobile Music Applications
- H3** : Music App Functionality has positive effects on Loyalty of Mobile Music Applications
- H4** : Promotion has positive effects on Loyalty of Mobile Music Applications

4. Method and Results

The questionnaire was designed with two major categories of five variables, in which four variables measure the attractiveness index as the independent variables and the measurement of the loyalty as the dependent variable and measured by the five-point Likert scale. From 1 to 5 points, respectively, are strongly disagree, disagree, indifferent, agree, and strongly agree.

4.1 Data Collection

Questionnaires were issued on May 6, 2017 through online questionnaire survey (<https://www.sojump.com/>). Respondents are undergraduate

students and aged 19~24 years old from Henan Polytechnic University and Henan Institute of Technology in Henan province, China. Usable sample size was 370.

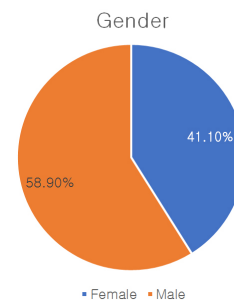
4.2 Data Analysis

Sample characteristics

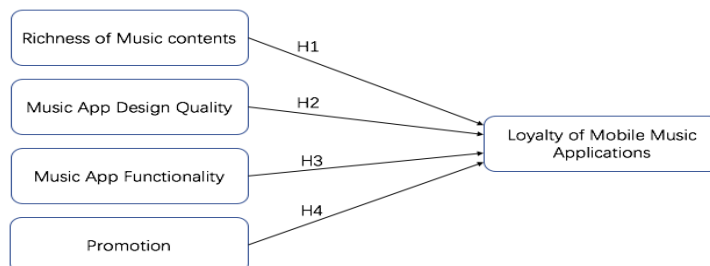
Gender distribution: As can be seen from <Table 1> and <Figure 1>, there are 218 male samples and 152 female samples. The number of female samples is lower than that of male samples, accounting for 41.1% of the total number of samples.

<Table 1> Sample Distribution by Gender

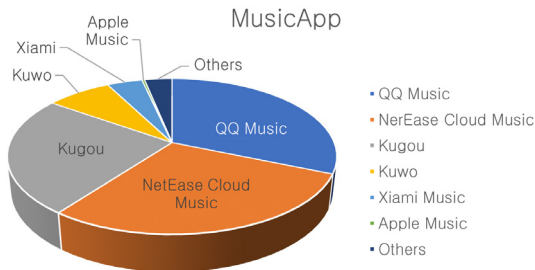
		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	218	58.9	98.9	58.9
	Female	152	41.1	41.1	100.0
	Total	370	100.0	100.0	



<Figure 1> Sample Distribution by Gender



Distribution of the most frequently used mobile music APP: In terms of the frequency of the use of music App, the rank of the use of applications sites are as follows: from largest to smallest share, QQ Music, NetEase Cloud Music, Kugou Music, Kuwo Music, and Xiami Music.

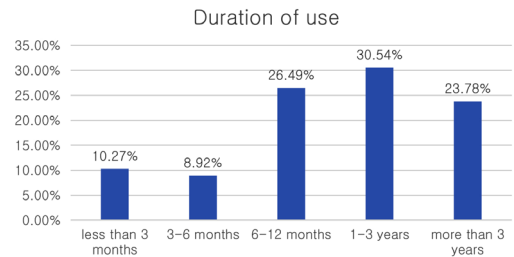


<Figure 2> Distribution of the Most Frequently Used Mobile Music APP

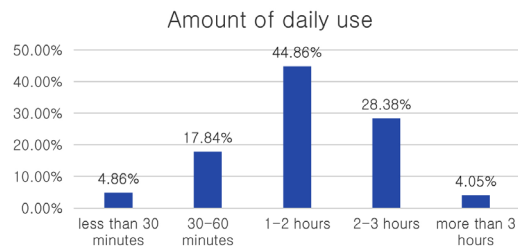
Distribution of duration of use: The median duration of use of the respondents is 1 year to 3 years, the number of samples is 113, accounting for 30.54% of the total sample, followed by 6~12 months, 98 users accounting for 26.49%. The number of users of more than 3 years of use is 88, accounting for 23.78%. The results are shown in <Figure 3>.

Distribution of amount of daily use: For the average daily use time of the respondents from 1 hour to 2 hours, the number of samples is 166, accounting for 44.86% of the total sample, fol-

lowed by 2~3 hours, the number of samples was 105, accounting for 28.38%. The number of samples per day for more than 2 hours is only 15, accounting for 4.05%. The results are shown in <Figure 4>.



<Figure 3> Distribution of Duration of Use

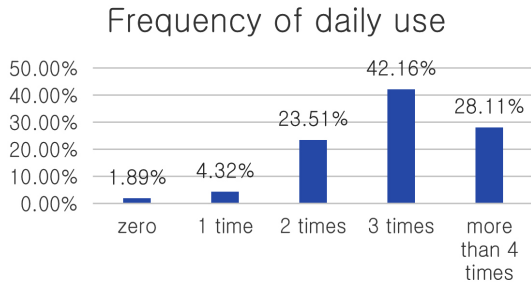


<Figure 4> Distribution of Amount of Daily Use

In terms of the frequency of mobile music APP usage per day, the median was 3 times (156 samples, accounting for 42.2% of the total number of samples). It's not hard to see that most of respondents use mobile music APP more than one time a day. The results are shown in <Figure 5>.

<Table 2> Major Music Apps

		Music App			
		Frequency	Percent	Valid Percent	Cumulative Percent
Vaild	QQ Music	116	31.4	31.4	31.4
	NetEase	107	28.9	28.9	60.3
	Kugou	91	24.6	24.6	84.9
	Kuwo	28	7.6	7.6	92.4
	Xiami	15	4.1	4.1	96.5
	Others	12	3.2	3.2	99.7
	Apple	1	.3	.3	100.0
	Total	370	100.0	100.0	



<Figure 5> The Frequency of Mobile Music APP Usage per Day

Factor Analysis

<Table 3> is a summary of the result of factor analysis of the attractiveness and loyalty of mobile music applications. L2, L3, L5, L6 are items of Loyalty of mobile music APP. R1, R2, R4 are items of richness of music contents. D1, D2, D3 are items of mobile music design quality. F4, F5 are items of mobile music functionality.

<Table 3> Result of Factor Analysis

	Component				
	1	2	3	4	5
L3	0.813	0.285	0.169	0.208	0.146
L2	0.799	0.205	0.108	0.255	0.197
L6	0.706	0.355	0.106	0.237	0.204
L5	0.697	0.472	0.129	0.226	0.133
D2	0.373	0.784	0.179	0.179	0.220
D3	0.382	0.739	0.169	0.306	0.155
D1	0.454	0.703	0.159	0.309	0.209
P3	0.136	0.070	0.837	0.210	0.038
P2	0.126	0.235	0.833	0.067	0.136
P1	0.075	0.071	0.778	0.181	0.424
R1	0.321	0.255	0.252	0.799	0.188
R2	0.434	0.290	0.264	0.690	0.203
R4	0.296	0.510	0.196	0.615	0.256
F5	0.288	0.224	0.377	0.194	0.748
F4	0.326	0.376	0.231	0.320	0.662

Extraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 6 iterations.

P1, P2, P3 are items of promotion.

Reliability Analysis

The Cronbach’s alpha values for the Loyalty scale is 0.904, Richness is 0.910, Design Quality is 0.921, Functionality is 0.834 and Promotion is 0.839. It’s indicating that the entire scale had a very high internal consistency and that the data had a very high reliability. At the same time, the CITC (the total correlation of the corrected items) of each item is more than 0.5, which indicates that the questionnaire has high reliability and conforms to the accepted reliability test standard. The results are shown in <Table 4>.

<Table 4> Result of Reliability Analysis

	Cronbach’s Alpha	N of items
Loyalty	.904	4
Richness	.910	3
Design Quality	.921	3
Functionality	.834	2
Promotion	.839	3

Correlation Analysis

It can be seen from <Table 5> that 3 factors of correlation coefficient between attractiveness and loyalty is greater than 0.7 and the significance level is above 0.01, indicating that 3 factors are significantly correlated with loyalty and have a very large positive impact on loyalty of mobile music application.

Based on above results, H1, H2, H3 are supported, while H4 suggesting promotion has positive effects on Loyalty of Mobile Music Applications is not supported.

<Table 5> Correlations among Variables

Correlations						
		Richness	Design Quality	Functionality	Promotion	Loyalty
Richness	Pearson Correlation	1	.776**	.784**	.532**	.751**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	370	370	370	370	370
Design Quality	Pearson Correlation	.776**	1	.831**	.437**	.805**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	370	370	370	370	370
Functionality	Pearson Correlation	.784**	.831**	1	.591**	.769**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	370	370	370	370	370
Promotion	Pearson Correlation	.532**	.437**	.591**	1	.391**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	370	370	370	370	370
Loyalty	Pearson Correlation	.751**	.805**	.769**	.391**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	370	370	370	370	370

**Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

From <Table 6>, we can find that R (multi-variate correlation coefficient) of the four independent variables and loyalty variables is 0.839, R-squared is 0.705, which means that the four variables can explain 70.5% of the loyalty

variables Variance. The normalized regression coefficients of the three independent variables are positive numbers, indicating that the influence of the three factors on loyalty is positive and the hypothesis 1, 2, 3 are proved to be accepted again.

<Table 6> Regression Result Summary

Model Summary									
						Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.839 ^a	.705	.702	.462	.705	217.798	4	365	.000

<Table 7> Result of Regression Analysis

Coefficients ^a						
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.435	.116		3.765	.000
	Richness	.242	.046	.267	5.325	.000
	Design Quality	.396	.054	.412	7.373	.000
	Functionality	.271	.060	.272	4.532	.000
	Promotion	-.076	.030	-.092	-2.541	.011

a. Dependent Variable: Loyalty

5. Conclusions

Application attractiveness have significant impact on loyalty of mobile music applications. The results show that there is a positive correlation between loyalty and three application attractiveness dimensions: richness of music contents, music app design quality and music app functionality.

5.1 Practical Implications

In any industry, the development of new markets, and access to new users is often expensive. However, if users maintain brand loyalty, then the costs can be greatly reduced. Brand loyalty is the core component of brand equity, which can reduce marketing costs, create trading leverage, attract new users and compete for business to win time. High quality music enjoyment, friendly and comfortable visual presentation, easy to use interface, vast online library resources are the suggested dimensions that will lead user's desire to remain as a loyal user and prevent transfer to different sites.

With the music APP market gradually maturing, the future of mobile music application competition will change from focusing on user experience to focusing on copyright and content dispute. At the beginning of this contest, QQ Music seems to have occupied the best position. Earlier this year, NetEase Cloud music got banned by QQ music, music on this application cannot be shared to the QQ space and WeChat friends. At the same time QQ music and South Korea's top entertainment companies: YG Enter-

tainment, etc. are cooperating so that many exclusive music resources were seized first by QQ. The current giant is approaching a grim situation: the other digital music service providers are identifying their own advantages and disadvantages, clearing their own products and brand positioning, and are finding flexible ways to deal with challenges to secure their own loyal customer base.

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