

Rapid Communication

Exploring Experiential Value in Online Mobile Gaming Adoption

Shintaro Okazaki, Ph.D.

Abstract

Despite the growing importance of the online mobile gaming industry, little research has been undertaken to explain why consumers engage in this ubiquitous entertainment. This study attempts to develop an instrument to measure experiential value in online mobile gaming adoption. The proposed scale consists of seven first-order factors of experiential value: intrinsic enjoyment, escapism, efficiency, economic value, visual appeal, perceived novelty, and perceived risklessness. The survey obtained 164 usable responses from Japanese college students. The empirical data fit our first-order model well, indicating a high level of reliability as well as convergent and discriminant validity. The single second-order model also shows an acceptable model fit.

Introduction

MOBILE DATA SALES ARE GROWING at an astonishing pace in most industrialized countries, and will reach more than \$4.8 billion by 2009.¹ In particular, mobile game downloads account for the vast majority of data revenues, and are expected to grow sixfold by 2010,² which can be classified as a component of m-commerce. The adoption of m-commerce has been most frequently explored using existing theoretical frameworks, particularly the technology acceptance model (TAM). Bruner and Kumar applied TAM in the consumer context and found that a hedonic aspect or "fun attribute" is a stronger determinant of attitude toward handheld Internet use than is any utilitarian attribute.³ However, their study focused on a general use of the device and did not determine which specific components of the hedonic aspect are responsible for consumer adoption. The purpose of our study is to fill this research gap, by empirically measuring the factors determining online mobile game adoption.

Background

Experiential value was first proposed by Holbrook and Hirschman,⁴ who contended that many consumption experiences involve fantasies, feelings, and fun, which are of vital importance in explaining consumers' decision-making processes. In selecting the most relevant dimensions of ex-

periential value, this study draws upon Mathwick et al.'s theoretical framework.⁵ They developed the experiential value scale as a multidimensional construct in the catalogue and Internet shopping environment, and proposed a hierarchical model based on the typology suggested by Holbrook.⁶ Although Mathwick et al.'s scale is based on the retail shopping environment, it offers useful insights in explaining the value package that consumers expect to feel and enjoy in an online entertainment venue.

On this basis, we propose a value landscape framed by intrinsic/extrinsic benefits of value on one axis, and dynamic/static value on the other (Fig. 1). Here, static value comes from the consumers' distanced appreciation for the online mobile games themselves. Dynamic value, on the other hand, derives from a heightened interaction between the consumer and the online mobile games. Four dimensions are labeled as *fun*, *consumer return on investment*, *aesthetics*, and *quality*.

Methods

We followed the recommendations made by Churchill⁷ and Netemeyer et al.⁸ for developing and refining scale measures. The final measures consisted of 35 question items. The survey was administered in Japan, a country that accounts for more than half the total international mobile gaming market.⁹ Our target respondents were first- and second-year

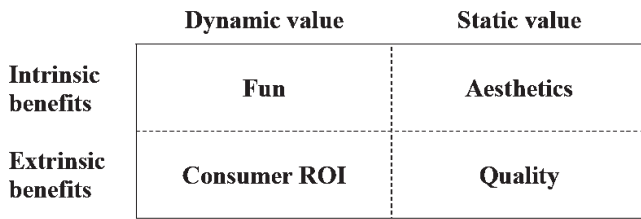


FIG. 1. Typology of experiential value in online mobile gaming adoption. Note: ROI = return on investment.

business major students from five large universities in the greater Tokyo area. Given that the majority of online mobile gamers are under 25 years old, the student sample was considered appropriate. Of the questionnaires sent out for the study, a total of 164 usable responses were obtained. With regard to the respondents' characteristics, as many as 84% of the respondents had played online games in the past. Seventy-eight percent of the respondents were male and 22% were female; 95% were between the ages of 18 and 25.

Results

We first performed an exploratory factor analysis (EFA) via SPSS 13.0 with principal component method. Only factors with eigenvalue greater than 1 were retained. Most of

the items loaded on corresponding constructs, while more than 72% of the total variance was explained. Next, confirmatory factor analysis (CFA) was conducted to establish the unidimensionality across the first-order experiential value factors. The measurement model was calibrated using AMOS 5.0 with a maximum likelihood method. The model showed a reasonable fit, with $\chi^2_{329} = 1018.50$ ($p < 0.001$), Comparative Fit Index (CFI) = 0.86, Tucker-Lewis Index (TLI) = 0.84, and Root Mean Square Error of Approximation (RMSEA) = 0.08. After carefully examining the significance of the regression weights, the magnitude of standardized residuals, and the modification indices generated from CFA we reduced the total scale to 28 items (Table 1). The revised model improved the fit, and every item loaded successfully and significantly on the proposed constructs.

We calculated composite reliability, and the scores ranged from 0.97 to 0.99, exceeding the generally recommended minimum of 0.6. In an attempt to establish convergent validity, we calculated the average variance explained (AVE) for each construct. The scores varied from 0.53 to 0.72, and all scores exceeded the recommended minimum level of 0.50. In addition, we conducted a test for discriminant validity, by confirming that the squared correlation between any two constructs was lower than the average variance extracted by either construct. Every pair met this criterion.

Because our primary research objective was to develop an instrument to measure experiential value in online mobile

TABLE 1. FIRST-ORDER CONFIRMATORY FACTOR ANALYSIS

<i>Paths</i>			<i>Standardized loadings</i>	<i>Critical ratio</i>
Intrinsic enjoyment	→	Q1	0.58	
Intrinsic enjoyment	→	Q2	0.84	7.70***
Intrinsic enjoyment	→	Q3	0.75	7.23***
Intrinsic enjoyment	→	Q4	0.85	7.75***
Escapism	→	Q5	0.84	
Escapism	→	Q6	0.81	12.17***
Escapism	→	Q7	0.90	14.38***
Escapism	→	Q8	0.85	13.23***
Efficiency	→	Q9	0.69	
Efficiency	→	Q10	0.82	12.25***
Efficiency	→	Q11	0.73	10.98***
Efficiency	→	Q12	0.71	10.32***
Economic value	→	Q13	0.67	
Economic value	→	Q14	0.88	11.16***
Economic value	→	Q15	0.87	7.83***
Economic value	→	Q16	0.77	8.48***
Visual appeal	→	Q17	0.81	
Visual appeal	→	Q18	0.86	9.17***
Visual appeal	→	Q19	0.79	8.32***
Visual appeal	→	Q20	0.75	8.11***
Perceived novelty	→	Q21	0.79	
Perceived novelty	→	Q22	0.83	9.54***
Perceived novelty	→	Q23	0.61	9.46***
Perceived novelty	→	Q24	0.66	8.62***
Perceived risklessness	→	Q25	0.82	
Perceived risklessness	→	Q26	0.85	12.87***
Perceived risklessness	→	Q27	0.88	13.44***
Perceived risklessness	→	Q28	0.78	11.34***

Note: $n = 164$; *** $p < 0.001$.

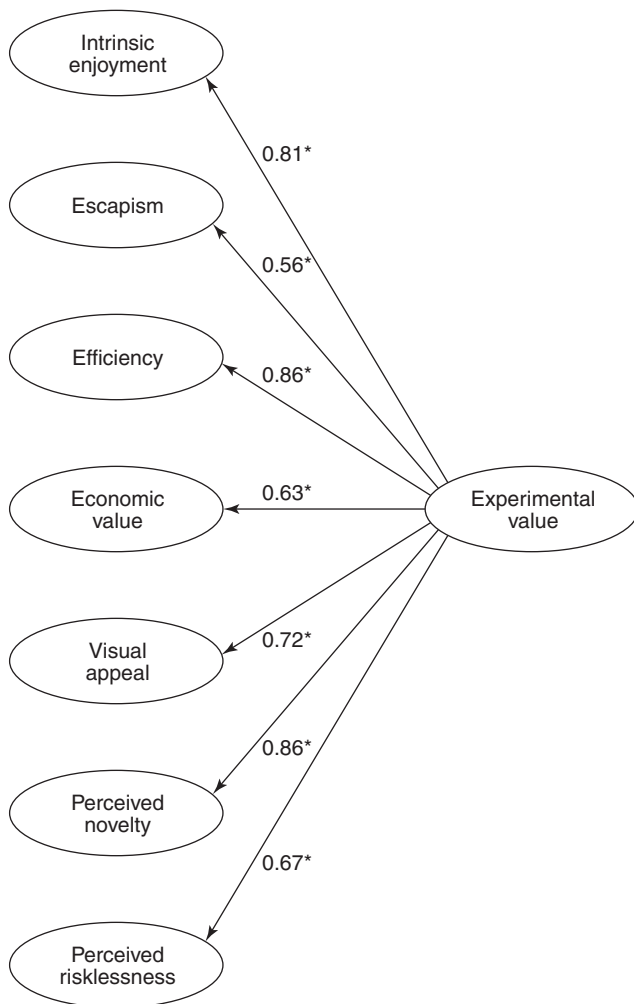


FIG. 2. Second-order measurement model. Note: Standardized coefficients. * $p < 0.001$.

gaming adoption, it seemed reasonable to assume the existence of a single overall construct of experiential value that explained the seven first-order factors. Therefore, we tested a second-order measurement model. The model exhibited an acceptable fit: $\chi^2_{340} = 653.81$ ($p < 0.001$), CFI = 0.90, TLI = 0.88, RMSEA = 0.08. All seven first-order factors loaded significantly on the second-order factor ($p < 0.001$), and the standardized coefficients ranged from 0.56 to 0.86 (Fig. 2). This confirmed the existence of the second-order factor of overall experiential value construct.

Finally, we examined the nomological validity of the scale, which refers to the degree to which a scale behaves as expected in terms of its relationships with other theoretically related outcome variables and constructs.¹⁰ We sought evidence in a construct's possession of consequential effects, by specifying predictive relationships with attitude toward, intention to download, and actual behavior to play online mobile games. The nomological model indicated an acceptable fit, while all the paths were statistically significant with high standardized coefficients.

Discussion

This study has several important implications for both academics and practitioners. First and foremost, we developed a theoretical framework identifying seven first-order factors that can be explained by a single second-order factor in the context of online mobile gaming adoption. The importance of the enjoyment factor has also been recognized in the electronic commerce literature, but this is the first attempt to study experiential aspects in the use of mobile Internet services. Second, this study corroborates Mathwick et al.'s theoretical framework in a mobile Internet context. Our second-order model appears to be consistent with their hierarchical model. However, probably the most important implication is that, whereas their experiential value scale was tested in an online shopping environment, our scale was tested in online gaming adoption. That is, our findings somewhat suggest that downloading online services in handheld devices can be seen as a purchasing behavior, and consumers are likely to seek similar attributes to enjoy their "shopping" in a mobile venue. This "shopping" aspect has not been explored in the past, and future research is needed to address the issue. Third, our results lend support to the intuition that feelings of fun and enjoyment play important roles in online entertainment.¹¹ Moreover, the verification of nomological validity suggests that the seven first-order factors significantly influence online mobile gamers' overall perception of experiential value, which in turn affects the intention to download games. Our research suggests that although practitioners must keep mobile games eye-catching and aesthetically appealing, functionality should be free of security and privacy problems. Moreover, a greater standardized coefficient of perceived novelty indicates that a rapid rotation and a wider selection is a key determinant of online mobile gaming adoption.

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Disclosure Statement

The author has no conflict of interest.

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