Persuasive AR Technology for Information Producers - Extended Abstract

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Augmented reality (AR) offers innovative ways to engage users through immersive informational experiences. However, the value of information is subjective and appears upon use. The rise of user participation in information production has amplified the importance of understanding the value of information. Prior research mostly centered around consuming information, often neglecting the experiential aspect of information production as a determinant of its value. This study investigates how gamified AR impacts information value perceptions. By combining gamification with AR, users can engage in activities that mimic game-like challenges and informational interactions against a real-world backdrop.

We developed a location-based city tour gamified AR mobile map where users can produce or consume information interactively. Figures 1-3 display the app during a tour.
Procedure: We divided participants to users and producers' groups and assigned their level of experience (low: click on object to reveal information or high: catch object and earn coins for customization).

Figure 1: During the tour

Figure 2: Information pop-up after clicking the AR object

Figure 3: Ranking the experience message

In a between-subjects design, 47 teenagers used the tool as either producers or consumers of content (a route consisting of points of interest). In the low AR experience condition, producers exhibited a higher average perceived information value (M = 3.17, SD = 0.50) compared to users (M = 2.47, SD = 0.82). The Spearman rank test indicated a moderate positive correlation between user type and perceived value $r_s(25)$ = .48, p =.012. An independent samples t-test showed a significant difference between producers' and users' value perceptions $t(25)$ = -2.78, p =.021.
Findings provide insights into perceived information value dynamics in AR gamification. With low AR experience, adopting a producer role tended to increase attributed information value compared to a user role. There is a nuanced relationship between experience and value perception, shedding light on the potential impact of persuasive technology experience levels on information appreciation and engagement.

This research demonstrates information value perception differences due to AR experience. It provides guidance for designing persuasive location-based apps to benefit tourism, education, and business as part of urban communities. Future studies should investigate higher AR experience levels and long-term impacts on value perceptions. This work contributes new knowledge at the intersection of emerging technologies and information science.