Georgia Southern University

Digital Commons@Georgia Southern

Association of Marketing Theory and Practice Proceedings 2022

Association of Marketing Theory and Practice Proceedings

2022

Gamification Usage and Platform Loyalty in Esports Livestreams: An Analysis of Unobserved Heterogeneity with FIMIX-PLS And IPMA

Yizhou Qian
Louisiana State University and Agricultural and Mechanical College, yqian@lsu.edu

Jeam Martinez
Louisiana State University and Agricultural and Mechanical College, jmmartinez@lsu.edu

Robbie Matz
Belmont University, robbie.matz@belmont.edu

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/amtp-proceedings_2022

Part of the Management Information Systems Commons, Marketing Commons, Sports Management Commons, and the Technology and Innovation Commons

Recommended Citation

Qian, Yizhou; Martinez, Jeam; and Matz, Robbie, "Gamification Usage and Platform Loyalty in Esports Livestreams: An Analysis of Unobserved Heterogeneity with FIMIX-PLS And IPMA" (2022). *Association of Marketing Theory and Practice Proceedings 2022*. 67.
https://digitalcommons.georgiasouthern.edu/amtp-proceedings_2022/67

This conference proceeding is brought to you for free and open access by the Association of Marketing Theory and Practice Proceedings at Digital Commons@Georgia Southern. It has been accepted for inclusion in Association of Marketing Theory and Practice Proceedings 2022 by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.

Gamification Usage and Platform Loyalty in Esports Livestreams: An Analysis of Unobserved Heterogeneity with FIMIX-PLS And IPMA

Tyreal Yizhou Qian

Louisiana State University

Jean Martinez

Louisiana State University

Robbie Matz

Belmont University

EXTENDED ABSTRACT

The global esports audience is expected to reach 728.8 million in 2021 with projections that the number could grow to 920.3 million by 2024 (Newzoo, 2021). Although some traditional TV networks are beginning to broadcast esports events (Kim et al., 2021), the majority of esports content is consumed on livestreaming platforms such as *Twitch, YouTube, Douyu, and Huya* (Li et al., 2020). These livestreaming platforms are best known by their capacity to foster value co-creation through interpersonal interactions and immersive environments (Qian, 2021). Notably, a burgeoning approach to augment esports viewing experience is through the implementation of gamification, an application of gameplaying elements (e.g., points, rankings, progress) which generate gameful experiences to encourage engagement with products or services (Hamari & Koivisto, 2015a; Hamari & Koivisto, 2015b; Huotari & Hamari, 2017; Koivisto & Hamari, 2019; Li et al., 2020). Although gamification as a marketing strategy has been adopted by a myriad of fields and sectors such as education (Hamari et al., 2016), human resource management (Mitchell et al. 2020), and health and wellbeing (Johnson et al., 2016), academic acumen of the application of gamification in the entertainment domain, in particular social livestreaming services, still lags behind (Koivisto & Hamari, 2019; Li et al., 2020). While a handful of studies have explored the effects of gamification (Bitrián et al., 2021; Xi & Hamari, 2020a; Xi & Hamari, 2020b), these have largely overlooked the antecedents to gamification usage. Furthermore, existing gamification studies have assumed homogeneous gamification performances, without empirically identifying data characteristics' heterogeneity. To fill these gaps, our study aimed to assess the importance and effectiveness of the technology acceptance model (TAM) variables, i.e., perceived ease of use (PEU), perceived usefulness (PU), and perceived enjoyment (PE) (Davis, 1989; Van der Heijde,n 2004) in predicting gamification usage (achievement, immersion, and socialization) in esports livestreams. We further adopted the finite

mixture partial least squares (FIMIX-PLS) approach to uncovering unobserved heterogeneity in path modeling outcomes as well as implemented importance performance map analysis (IPMA) to offer a more nuanced understanding about platform loyalty, which is key to customer retention (Hair Jr et al., 2016; Ringle & Sarstedt, 2016; Ringle et al., 2015).

An online survey was distributed during the 2020 League of Legends (LoL) World Championships (Worlds), the annual culminating tournament of professional LoL (LOLESPORTS, 2020). We chose Douyu and Huya as the representative social livestreaming platforms for this study as Worlds was livestreamed on both platforms featuring a comprehensive set of gamification systems. A total of 396 valid responses were collected. Screening questions along with a thorough examination of participants' demographics indicated our sample was a good representation of the target population. We adapted Xi and Hamari's (2020b) conceptualization which categorize gamification systems in terms of achievement (AG), immersion (IG), and socialization (SG). Achievement, immersion, and socialization gamification were measured by using a formative-formative hierarchical component model (HCM) (Sarstedt et al., 2019). Specifically, AG was operationalized as a higher-order construct formed by lower-order constructs: level system, tasks, and predictions. Similarly, IG was formed by badges, customization, and viewing tools. SG was formed by community forum, chat, and team competition. Lower-order gamification constructs were also measured formatively in terms of perceived importance (7-point Likert scale) and interaction frequency (5-point Likert scale). We measured PEU, PU, and PE using the scale adapted from Van der Heijden (2004), while measures for platform loyalty (PL) were derived from Srinivasan et al. (2002). All items were measured on a 7-point Likert scale.

SmartPLS (v. 3.3.3) was used for statistical analysis. First, we evaluated and confirmed the reliability and validity of the measurement model following the guidelines by Hair Jr et al. (2017). The structural model explained 24.3%, 28.7%, 28.4%, and 28.8% of variance for AG, IG, SG, and PL, respectively. Path analysis revealed that all paths linking the TAM determinants and gamification were significant and positive except for the non-significant effects of PE on AG and PU on IG and SG. Next, we performed IPMA which calculated the effectiveness and performance scores for PEU, PU, PE, AG, IG, and SG on PL. Results showed that PEU (.29), AG (.29), IG (.17), and SG (.17) exhibited the highest importance score in determining the strength of PL. Although performance scores of PP (79.40) and PU (78.19) were found to be the highest, their importance scores were relatively lower than those of other predictors. To account for unobserved heterogeneity, FIMIX-PLS analysis was conducted. In line with Sarstedt et al. (2022), we assessed classification criteria including AIC_4, BIC, CAIC, AIC, MDL_5, EN statistic, and relative segment sizes, determining that the two-segment solution should be retained. Consequently, the FIMIX-PLS hard clustering was performed based the two-segment solution which was then considered as an input for partial least squares predication-oriented segmentation (PLS-POS). PLS-POS results indicated that no significant difference existed in the path coefficients and R^2 values across the original sample and the two segments. It was therefore inferred that the data was not influenced by unobserved heterogeneity and that the original model could be accepted on the aggregate level.

The first implication of this study supports the application and extension of TAM in the gamification literature as we highlighted the central role of PEU in promoting AG, IG, and SG usage (Van der Heijden, 2004). The IPMA results suggest that PEU, AG, IG, and SG should be marked most important in fostering platform loyalty. Even so, it should be noted that AG, IG, and SG had the lowest performance scores, indicating additional resources should be allocated to improve their performance. Moreover, this study made the initial attempt to identify and capture unobserved heterogeneity in gamification research. Although unobserved heterogeneity was not an issue in our data, it may cause theoretical mismatch and erroneously simplify the underlying complexity of individual differences (Sarstedt et al., 2022). Future researchers consequently should account for the effects of distinct preferences (e.g., attitudes, behaviors) and demographic characteristics (e.g., age, gender) when conducting gamification research.

Keywords: *gamification, loyalty, livestreaming, esports, unobserved heterogeneity, FIMIX-PLS, IPMA*

References are available upon request.

ABOUT THE AUTHORS

Tyreal Yizhou Qian is an Assistant Professor of Sport Management in the School of Kinesiology at Louisiana State University. His research is primarily focused on the impact of new media (e.g., esports, livestreaming services) and motivational information systems (e.g., gamification) on consumer behavior. Dr. Qian's secondary research interest lies in the cultural, social, economic, and political complexities of the contemporary Asian sports industry.

Jean Martinez is an Associate Professor of Sport Management in the School of Kinesiology at Louisiana State University. Dr. Martinez primarily conducts research within the human resource management function of sport organizations. He helped found the Journal of Sport Administration and Supervision, serving as editor shortly after, and also was a guest editor for the Journal of Applied Sport Management. Dr. Martinez is the past president of the Applied Sport Management Association. Prior to entering academia, he worked for several years in college athletics and in non-profit marketing.

Robbie Matz is an Assistant Professor of Sport Administration at Belmont University. Dr. Matz's research interests include amateur and professional golf, with an emphasis on women's golf. He is a published author and has presented research at sport management conferences around the world including Europe, Canada, and Australia. He has served on multiple committees for the North American Society for the Sociology of Sport and is a founding board member for the Graduate Program in Sport Management Alumni Network at CSULB.