

## DOCTORAL THESIS

### Understanding problematic use of massively multiplayer online games: instrument development and theoretical model testing

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## **Abstract**

Problematic use of massively multiplayer online games (MMOGs) is an emerging societal challenge worldwide. There are increasing numbers of incident of problematic use of MMOGs and even reported cases of death from playing MMOGs excessively. With its prevalence, problematic use of MMOGs has received increasing awareness from the scientific community, the general public, and the media. Since information systems (IS) research traditionally emphasizes the positive and productive values of system usage, relatively few published studies on problematic use of MMOGs are found in mainstream IS journals. In addition, research on problematic use of MMOGs is hindered by a lack of uniform conceptualizations, valid measurement instruments, and theory-guided study.

As a step towards bridging these gaps and fostering the understanding of problematic use of MMOGs, this study aims (1) to conceptualize problematic use of MMOGs and distinguish it from its counterparts, (2) to develop and validate an instrument of it using a rigorous approach (Study 1), and (3) to propose and empirically test a theory-driven model explaining the development of problematic use of MMOGs (Study 2).

Study 1 aims to conceptualize problematic use of MMOGs, and develop and validate an instrument of it. First, drawing on the literature of problematic use of MMOGs and behavioral addiction, this study distinguishes among the often interchangeably used terms of “addiction,” “problematic use,” “excessive use,” and “dependence,” suggesting that their use requires careful consideration of the research scope and context. Second, following the robust paradigm in the IS literature, the instrument development process is carried out in three stages,

including item generation, scale development, and instrument testing. The instrument is empirically validated with 517 active MMOG players. The final instrument, consisting of 37 items, exhibits adequate levels of reliability, convergent validity, discriminant validity, and nomological validity.

The validated instrument adds to the repertoire of rigorous research instruments available to future IS researchers, helping to establish a tradition of IS research on problematic use of MMOGs and other hedonic technologies.

Study 2 aims to advance theoretical understanding of the development mechanism of problematic use of MMOGs. Drawing on the hedonic management model of addictions, this study proposes a theoretical model explaining how the duality of hedonic experiences, mood enhancement and emotional relief, derived from playing MMOGs lead to problematic use. The research model is empirically tested with 468 active MMOG players with the majority of the hypotheses supported. The findings suggest that both mood enhancement and emotional relief are important mechanisms leading to salience of gameplay, which in turn, explains the development of problematic use of MMOGs.

This study adds to the growing body of knowledge on technology usage-related problems and advances theoretical understanding of development mechanism of problematic use of MMOGs. In addition, the findings provide MMOG developers, policymakers, and educators with insights on how to alleviate problematic use of MMOGs.

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