

MOTIVATION TO PLAY SCALE (MOPS)

POSTER PROPOSAL: **Motivation to Play Scale (MOPS): Measuring Gaming Motivation With a Comprehensive Instrument**

Author(s): Elisabeth Holl, Gary L. Wagener, and André Melzer (University of Luxembourg)

ABSTRACT: With the growing interest in gaming, the motivation why people play has become a focus of research. Scales assessing gaming motivation are mostly based on either motivation theories or on self-constructed items adapted to specific genres. Despite the amount of existing scales, measures often lack validation or leave out important and novel motives. Therefore, the Motivation to Play Scale (MOPS), a work-in-progress project, aims at identifying a holistic instrument validated by systematically collecting and evaluating already existing items. A first evaluation survey ($N = 555$) resulted in preliminary version of the MOPS measuring 14 gaming motives (e.g., competition, escapism) using 59 items ($\alpha = .94$).

Introduction

With billions of players worldwide gaming has become an omnipresent phenomenon both in society and daily lives. As so many people are drawn towards these virtual worlds, research has tried to explore their motivation. For example, early work of Bartle (1996) defined four types of players: achievers, explorers, socializers, and killers. Based on this taxonomy, Yee (2007) identified three higher-order motives (i.e., achievement, social, and immersion) for playing online role-playing games. Other scholars applied already existing theories (e.g., self-determination theory) on the gaming context (e.g., Ryan et al., 2006). Furthermore, rather novel motives not covered by earlier models (e.g., monetary motivations in E-sports: Bányai et al., 2019, stress reduction: Reinecke, 2009) or those relevant only for specific genres (e.g., exergames: Adam & Senner, 2016, *Pokémon Go*: Cheng, 2019, or *World of Warcraft*: Fuster et al., 2012) have been proposed. Although a great amount of scales has been developed, gaming scholars so far have not agreed on one comprehensive and fully validated measure of motivations to play. Therefore, the current study introduces the *Motivation to Play Scale (MOPS)*. Instead of adding further items to the list, the MOPS follows a bottom-up approach based on an extensive literature review to identify and evaluate already existing items on gaming motivation. As this is an ongoing project, results will be reported on a preliminary basis and supplemented for possible presentation at the International Communication Association Conference in 2021.

MOTIVATION TO PLAY SCALE (MOPS)

Current study

Based on guidelines for systematic reviews (Moher et al., 2015) a thorough literature search was initiated using the databases *PsycINFO*, *PsycARTICLES*, and *Web of Science* with the following search term devised by a team of experienced game scholars and librarians:

("video game*" OR "videogame*" OR "digital game*" OR "electronic game*" OR "computer game*" OR "online game*" OR MMO* OR gaming)
AND motiv* AND (scale* OR questionnaire* OR measure* OR item* OR instrument*).

The search string was applied to title, abstract, and keywords (for all databases), subject headings as well as test and measures records (for *PsycINFO/ARTICLES*). The search was not restricted to specific populations, game genres, or languages. After removing duplicates from 1,663 results, abstracts were screened for relevancy. For example, several results on game-based learning assessed intrinsic motivation as an outcome and were removed. Remaining publications were fully scanned for items assessing gaming motivation, pooling all available items of the original measures. After splitting several ambiguous statements (e.g., “chatting with and getting to know other people”), 1,234 items were streamlined to fit the phrase “I play video games to/because ...”. In addition, duplicates were removed, as was true for overly specific items (e.g., “to be the most famous model” when playing *goSupermodel*; van Reijmersdal et al., 2013), items describing behavior or feelings, and items in the form of statements but not motivations (e.g., “I try to make sessions last as long as possible”; Koo et al., 2007). Further streamlining led to a final pool of 147 statements. For a detailed workflow of the selection process, see Figure 1. The final item pool was then evaluated in a large-scale survey.

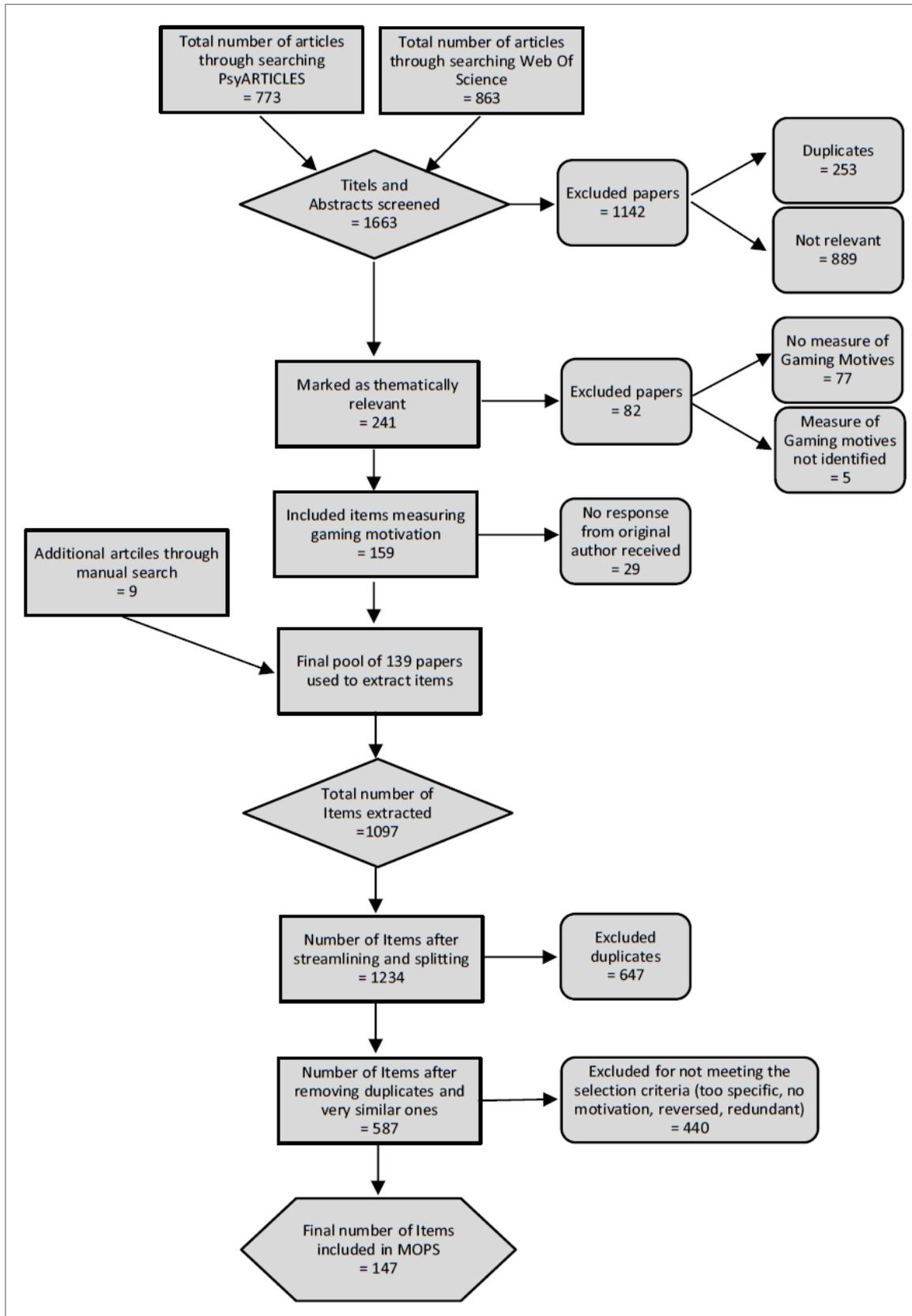
Participants

$N = 555$ participants took part in a first evaluation survey. Participants were recruited via social media and local websites. Inclusion criteria were being 18+ years old and having played video games at least once. 69.9 % of participants identified as male, 29.7 % as female and 0.4 % did not wish to indicate their gender. The age range of participants was between 18 and 66 years ($M = 27.5$, $SD = 8.01$). On average participants spent $M = 14.55$ ($SD = 13.02$) hours per week on gaming and listed *Call of Duty* ($n = 44$), *FIFA* ($n = 20$), and *Animal Crossing* ($n = 19$) as their favorite games.

MOTIVATION TO PLAY SCALE (MOPS)

Figure 1

Workflow of the systematic literature review on gaming motivation assessment.



MOTIVATION TO PLAY SCALE (MOPS)

Measures

Besides providing information on basic demographics (e.g., age, gender) and gaming related questions (e.g., favorite game, gaming hours/week), participants answered the final pool of 147 motivation items on a scale from 1 (completely agree) to 5 (completely disagree). Item examples are shown in Table 1. In order to estimate convergent validity, 24 items of the PENS+ (Oliver et al., 2016; Rigby & Ryan, 2007), a well-validated questionnaire on gaming and need satisfaction, were rated by participants as well ($\alpha = .93$). To measure discriminant validity participants filled out the *Dirty Dozen* scale (Jonason & Webster, 2010; $\alpha = .84$), which aims at measuring so-called dark personality characteristics.

Factor Analyses

An initial exploratory factor analysis (EFA) on all 147 items was performed using principal axis factoring and Promax rotation, because players could score on several motivations. Cronbach's α for all items was .98, with a Kaiser-Meyer-Olkin (KMO) value of .95. In a first step, items loading less than .4 on more than one factor were removed. Subsequently, factors that had a high proportion of light-weighted items ($< .4$ and $< .7$ if factors had more than six items) were excluded. In a second step, only item loadings over .7 were retained to reach a total number of approximately four to six items per factor. The remaining items were used to conduct a second EFA repeating the reduction procedure following the identical protocol. A confirmatory factor analysis will be conducted until May 2021.

Preliminary results

Through EFAs the initial pool of 147 items was reduced to 59 items ($\alpha = .939$; KMO criterion = .934), which are distributed over 14 factors (see Table 1). All factors presented rotated Eigenvalues greater than 1 and explained 58.18% of the variance. Validity analyses revealed a general correlation of the MOPS and the PENS+ (Oliver et al., 2016; Rigby & Ryan, 2007) of $r = .75$ ($p < 0.01$). In contrast, MOPS and the Dirty Dozen scale (Jonason & Webster, 2010) had a correlation of $r = .20$ ($p < 0.01$) as reasonable subfactors (e.g., *Machiavellism* and *antisocial*) were significantly related.

Table 1

Motivation to Play Scale (MOPS) factor structure with reliabilities and exemplary items.

MOTIVATION TO PLAY SCALE (MOPS)

Factor	Number of items	α	Item examples: “I play video games ...”
Enjoyment	4	.82	because it is entertaining.
Achievement	4	.84	to collect items.
Competition	5	.86	because it is competitive.
Control	4	.84	because I am free to do as I please.
Skills	4	.86	because it improves my concentration.
Self-concept	5	.87	to feel valued.
Game aspects	6	.89	to explore imaginary worlds.
Escapism	5	.88	to get away from my problems.
Relaxation	3	.74	to relax.
Boredom	4	.84	to kill time.
Catharsis	5	.91	to channel my aggression.
Antisocial	3	.75	to commit violent acts, I cannot in real life.
Social	5	.88	to interact with others
Nostalgia	2	.74	to feel nostalgia.

Discussion

The present work-in-progress study presents a scale development based on systematic literature review on gaming motivation. This approach allowed for the identification of an exhaustive pool of items incorporating facets of gaming motivation, some of which have been neglected or underrepresented in other measures. The preliminary MOPS includes 59 items assigned to 14 factors explaining 58.18% of the variance. So far, reliability and validity measures were convincing. Nevertheless, further analyses of items (e.g., item-total correlation) and factor structure (e.g., confirmatory factor analysis) are still missing. Nevertheless, we believe that we have created a promising tool for evaluating gaming motivations, which significantly expands the research field of elucidating players' motivation in the rapidly developing field of gaming.

References

- Adam, C., & Senner, V. (2016). Which Motives are Predictors for Long-term Use of Exergames? *Procedia Engineering*, *147*, 806–811. doi: 10.1016/j.proeng.2016.06.310
- Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The psychology of Esports: A systematic literature review. *Journal of Gambling Studies*, *35*(2), 351–365. doi: 10.1007/s10899-018-9763-1

MOTIVATION TO PLAY SCALE (MOPS)

- Bartle, R. (1996). Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD Research, 1*(1), 19. <http://www.arise.mae.usp.br/wp-content/uploads/2018/03/Bartle-player-types.pdf>
- Cheng, Y. (2019). The mediating effects of motivation for playing Pokémon Go on internet gaming disorder and well-being. *The American Journal of Family Therapy, 47*(1), 19–36. doi: 10.1080/01926187.2019.1583614
- Fuster, H., Oberst, U., Griffiths, M., Carbonell, X., Lusa, A. C., & Talam, A. (2012). Psychological motivation in online role-playing games: A study of Spanish “World of Warcraft” players. *Anales de psicología, 28*(1), 274–280.
- Jonason, P. K., & Webster, G. D. (2010). The dirty dozen: A concise measure of the dark triad. *Psychological Assessment, 22*(2), 420–432. doi: 10.1037/a0019265
- Koo, D.-M., Lee, S.-H., & Chang, H.-S. (2007). Experiential motives for playing online games. *Journal of Convergence Information Technology, 2*(2), 13. doi: 10.1.1.217.3161
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., & Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews, 4*(1), 1. doi: 10.1186/2046-4053-4-1
- Oliver, M. B., Bowman, N. D., Woolley, J. K., Rogers, R., Sherrick, B. I., & Chung, M.-Y. (2016). Video games as meaningful entertainment experiences. *Psychology of Popular Media Culture, 5*(4), 390–405. doi: 10.1037/ppm0000066
- Reinecke, L. (2009). Games and recovery: The use of video and computer games to recuperate from stress and strain. *Journal of Media Psychology: Theories, Methods, and Applications, 21*(3), 126–142. doi: 10.1027/1864-1105.21.3.126
- Rigby, S., & Ryan, R. (2007). The Player Experience of Need Satisfaction (PENS): An applied model and methodology for understanding key components of the player experience. Retrieved from *Immersyve. Com/PENS_Sept07. Pdf*.
- Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. *Motivation and Emotion, 30*(4), 344–360. doi: 10.1007/s11031-006-9051-8
- van Reijmersdal, E. A., Jansz, J., Peters, O., & van Noort, G. (2013). Why girls go pink: Game character identification and game-players’ motivations. *Computers in Human Behavior, 29*(6), 2640–2649. doi: 10.1016/j.chb.2013.06.046
- Yee, N. (2007). Motivations for play in online games. *CyberPsychology & Behavior, 9*(6), 772–775. doi: 10.1089/cpb.2006.9.772