

Video Game Demand Scale (VGDS) data

Description:

The Video Game Demand Scale was developed by Bowman, et al. (2018). This data consists of a total of N = 660 participants gave complete answers to the 80 VGDS pool items—20 for each different type of demand—by consulting the literatures reviewed earlier in this manuscript, consulting existing open-ended data from past data collections to cull players' natural language about demand, and through deliberation within the research team. This 80-item bank was randomized and presented to participants, with items written in Likert-style with seven response options from "Strongly Disagree" to "Strongly Agree."

Format:

After a series of EFA, Bowman, et al. (2018) retained a 5-factor solution with 26 items, in which cognitive, emotional, and social demand factored in line with reviewed literature, and physical demand was factored into only two dimensions reflecting controller demand and physical exertion, respectively.

- The cognitive demand dimension items are principally about directed and purposeful thinking—perhaps most directly capturing the mental and rational aspects of video game play. the retained items are more closely aligned with the extent to which a game engages the player's mental faculties—like the notion of attentional demand
- The emotional demand involves items with colloquial references to game-induced affect is notable: the game *tugged on heartstrings* and *gave me the feels*. These items coalesced with items reflecting perceived player-centered emotions (being *emotionally invested*, *moved*, and having *emotional responses*) and context-centered emotions (in that *emotions ran high* and that emotions were *unexpected*).
- Two different types of physical demand emerged in the data, with *game controls* being *very natural*, *second nature*, and *easy to handle* being more associated with the discrete controller device (controller demand) and being *physically exhausted* and feeling *drained after gameplay* that seem to focus more holistically on involving the entire body in physical activity (exertional demand).
- The social demand factor similarly comprised items indicating a convergence of items representing both game-induced sociality (it was an *important part of the game*) and player-initiated sociality (feeling *obligated to others*), as well as items suggestive of both explicit awareness of and response to others through concrete influences (they *had an impact on how I played*) and more heuristic assessments of their influence that may suggest more implicit social demand (being *aware of others*)

Description of the original 80 items (boldfaced items were retained after EFA, with factor name in parathesis):

COG1 - The game left me mentally exhausted.

COG2 - The game involved a lot of problem-solving.

COG3 - The game was cognitively demanding. (Cog)

COG4 - I had to think very hard when playing the game. (Cog)

COG5 - The game required a lot of mental gymnastics. (Cog)

COG6 - The game was confusing to me.

COG7 - The game's challenges were very clear to me.

COG8 - It was very easy to comprehend this game.

COG9 - The mental challenges in this game had an impact on how I played. (Cog)

COG10 - This game doesn't require a lot of mental effort. (Cog)

COG11 - I was able to figure that game out quickly.

COG12 - When playing this game, my brain felt overloaded.

COG13 - This game made me question my own intelligence.

COG14 - It took a lot of thinking to understand the point of the game.

COG15 - This game was unexpectedly complicated.

COG16 - I didn't have to pay very close attention to the game while playing.

COG17 - The game made me draw on all of my mental resources. (Cog)

COG18 - The game required me to keep track of a lot of things.

COG19 - The game stimulated my brain. (Cog)

COG20 - I had to think through what was happening in the game.

EMOT1 - I was emotionally exhausted after playing the game.

EMOT2 - I was emotionally invested in the game.

EMOT3 - The game really got to me.

EMOT4 - The game gave me the feels. (Emotional)

EMOT5 - I cared deeply about what was happening in the game.

EMOT6 - I was moved by the game. (Emotional)

EMOT7 - I wasn't emotionally invested in the outcomes of the game.

EMOT8 - When playing, I was emotionally wrapped up in the game.

EMOT9 - I had emotional responses to the events in the game.

EMOT10 - My emotions ran high while playing this game.

EMOT11 - The game tugged at my heartstrings. (Emotional)

EMOT12 - I had a lot of unexpected feelings during gameplay. (Emotional)

EMOT13 - I felt emotionally detached from this game.

EMOT14 - The events in the game really didn't matter to me.

EMOT15 - Things happening in the game weren't relevant to me.

EMOT16 - I had a strong emotional bond with the game content. (Emotional)

EMOT17 - Playing the game got me riled up.

EMOT18 - I'm passionate about the game.

EMOT19 - I felt conflicted about things that happened in the game.

EMOT20 - The emotions that I felt while playing this game had an impact on how I played.

PHYS1 - I was physically exhausted after playing. (Exertional demand)

PHYS2 - I felt strained after playing. (Exertional demand)

PHYS3 - The game required a lot of physical movement from me.

PHYS4 - The game's controls were like second nature to me. (Controller demand)

PHYS5 - The controls were very natural to me. (Controller demand)

PHYS6 - The controls felt like an extension of me.

PHYS7 - My body felt drained after gameplay. (Exertional demand)

PHYS8 - I had a difficult time finding different game controls when I needed to.

PHYS9 - The game was physically relaxing for me.

PHYS10 - The game controls were easy to handle for me. (Controller demand)

PHYS11 - The game was physically demanding. (Exertional demand)

PHYS12 - The game required very little input from me.

PHYS13 - The game controls tripped me up. (Controller demand)

PHYS14 - I felt a lot of physical discomfort when playing.

PHYS15 - I was physically overwhelmed when playing the game.

PHYS16 - The game required constant input from me.

PHYS17 - I was tired after playing this game.

PHYS18 - The physical requirements to play this game had an impact on how I played.

PHYS19 - I had to do a lot of things simultaneously while playing this game.

PHYS20 - I felt rushed while trying to play this game.

SOC1 - After playing the game, I just felt like I needed to be alone.

SOC2 - This game was socially demanding. (Social)

SOC3 - While playing, I was aware of others in the game. (Social)

SOC4 - I felt that I was constantly being watched while playing.

SOC5 - This game was unexpectedly social for me.

SOC6 - During gameplay, I felt strong social connections with others.

SOC7 - I felt pressure to have relationships with others in the game.

SOC8 - I felt obligated to others, while playing. (Social)

SOC9 - I felt taxed after being around others in the game.

SOC10 - It took a lot out of me to be around others in the game.

SOC11 - The social connections in this game were very energizing to me.

SOC12 - When playing, I could feel the presence of others around me.

SOC13 - I was compelled to interact with others in the game. (Social)

SOC14 - I was exhausted after having so many social interactions in this game.

SOC15 - I was concerned with how I interacted with others in the game.

SOC16 - I cared a lot about what others thought of me in the game.

SOC17 - Being around others in the game had an impact on how I played. (Social)

SOC18 - I didn't notice any others while playing the game.

SOC19 - The game placed a priority on social relationships.

SOC20 - Socializing was an important part of playing this game. (Social)

The data were retrieved from <https://osf.io/x5jch> on Aug 7, 2025, and processed with the following R code:

```
HS=VGDS[,1:80]
colnames(HS)=c(paste0("COG",1:20),paste0("EMOT",1:20),paste0("PHYS",1:20),paste0("SOC",1:
20))
write.csv(HS,"vgds.csv",row.names = F)
```

References

Bowman, N. D., Wasserman, J., & Banks, J. (2018). Development of the video game demand scale. In *Video games* (pp. 208-233). Routledge.