

Ohlms, Marie L.; Melchers, Klaus G.; Lievens, Filip

Article — Published Version

Perceptions of Game-Based Assessments: The Role of Test Takers' Occupational Background

International Journal of Selection and Assessment

Provided in Cooperation with:

John Wiley & Sons

Suggested Citation: Ohlms, Marie L.; Melchers, Klaus G.; Lievens, Filip (2025) : Perceptions of Game-Based Assessments: The Role of Test Takers' Occupational Background, International Journal of Selection and Assessment, ISSN 1468-2389, Wiley, Hoboken, NJ, Vol. 34, Iss. 1, <https://doi.org/10.1111/ijsa.70040>

This Version is available at:

<https://hdl.handle.net/10419/335617>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.




If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

RESEARCH ARTICLE OPEN ACCESS

Perceptions of Game-Based Assessments: The Role of Test Takers' Occupational Background

Marie L. Ohlms^{1,2}  | Klaus G. Melchers¹  | Filip Lievens³ ¹Institute of Psychology and Education, Universität, Ulm, Germany | ²Institute of Psychology, Albert-Ludwigs-Universität, Freiburg, Germany | ³Lee Kong Chian School of Business, Singapore Management University, Singapore, Singapore**Correspondence:** Marie L. Ohlms (marie.ohlms@psychologie.uni-freiburg.de)**Received:** 8 October 2024 | **Revised:** 21 November 2025 | **Accepted:** 13 December 2025**Funding:** Studienstiftung des deutschen Volkes**Keywords:** applicant perceptions | game | game-based assessment | gamification | individual differences | occupational background | personnel selection

ABSTRACT

Game-based assessments (GBAs) have become increasingly popular in personnel selection. However, research on perceptions of GBAs has yielded mixed results, highlighting the need to explore variables that may shape perceptions of GBAs. Therefore, we examined whether test takers' occupational background and other person-related characteristics (i.e., gender, age, video game usage, openness to experience) are associated with their perceptions of GBAs. $N = 179$ individuals from technical and social occupational backgrounds rated their perceptions of GBAs and non-gamified tests. We found that GBAs were generally rated more positively than non-gamified tests in terms of organizational attractiveness, behavioral intentions toward the organization, enjoyment, and modernity. Furthermore, test takers' occupational background and several individual difference variables were related to perceptions of GBAs. These findings show the need to include individual difference variables as antecedents in applicant reaction models.

The war for talent puts organizations under increasing pressure to identify and hire qualified candidates. Accordingly, organizations are seeking strategies to position themselves as attractive employers in order to attract qualified applicants to work for them. A shift towards innovative and technology-based selection methods that enable a more engaging and entertaining experience for candidates while offering organizations valuable insights into applicants' job-related skills and abilities represents one of these strategies (Chamorro-Premuzic et al. 2016).

A method that has gained particular popularity in organizations in recent years is game-based assessment (GBA), that is, the use of (computer) games as personnel selection tools to measure the constructs of interest (Landers and Sanchez 2022; Ohlms et al. 2024b).¹ Depending on their specific configuration (e.g., game elements), GBAs can take on various forms and might be used to measure any combination of knowledge, skills, abilities, or other characteristics (KSAOs, Landers and Sanchez 2022). It has been

suggested that GBAs can help organizations to position themselves as attractive employers, as GBA is an innovative method that could attract applicants through playful design, which may lead to better applicant perceptions and an improved organizational image as compared to traditional methods (e.g., Bhatia and Ryan 2018; Woods et al. 2020). Applicant perceptions, in turn, are crucial as they influence key assessment outcomes such as applicants' performance in selection tests and their intentions to accept a job offer (Hausknecht et al. 2004).

However, the evidence for these proposed benefits of GBAs on applicant perceptions is somewhat mixed: Some studies found more positive applicant perceptions of GBAs compared to traditional non-gamified tests (e.g., Landers et al. 2022), while others revealed more negative applicant perceptions of GBAs (e.g., Ohlms et al. 2024a). One potential explanation for these mixed findings may be that there are person-related differences in perceptions of GBAs (Barends and Ohlms 2025; Ramos-Villagrasa et al. 2022). For instance, individuals with high levels

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2025 The Author(s). *International Journal of Selection and Assessment* published by John Wiley & Sons Ltd.

Summary

- Game-based assessments (GBAs) have become increasingly popular in personnel selection, but it remains unclear whether GBAs are equally attractive to all applicants
- This study contributes to our understanding of whether individual differences, including the occupational background, gender, age, video game usage, and openness to experience can explain differences in applicant perceptions of GBAs
- In general, GBAs were rated more positively than non-gamified tests on organizational attractiveness, behavioral intentions towards the organization, enjoyment, and modernity but participants from technical occupational backgrounds had somewhat more positive perceptions than individuals from social occupational backgrounds
- Perceptions of the GBAs were also more negative for older test takers, while individuals who had more video game usage or who were more open perceived GBAs more positively

of video game usage and high technology self-efficacy tend to perceive GBAs more favorably than those with lower levels of video game usage and lower technology self-efficacy (Ellison et al. 2020; Ohlms and Melchers 2025; Ohlms et al. 2024a). Unfortunately, a practical challenge for organizations is the inability to collect these psychological variables, such as video game usage, during the application process. Instead, organizations can typically only rely on observable or documentable proxy variables such as applicant's occupational background. Occupational background, in turn, may be related to systematic differences in demographic and psychological characteristics relevant to GBA perceptions. For instance, it may well be assumed that applicants from technical occupational backgrounds are more likely to be men and use video games more often, compared to applicants with a social occupational background who are stereotypically more likely to be women and have less video game usage (Charles and Bradley 2009; Kuhn and Wolter 2022; Su et al. 2009).

The occupational background of applicants may thus provide organizations with a practical cue through which to anticipate variations in perceptions of GBAs, however, this also raises important concerns. If individuals from different occupational backgrounds systematically differ in their perceptions of GBAs, owing, for instance, to differences in video game usage, this may call into question the perceived fairness and universal applicability of GBAs in selection processes, and may result in unintended disadvantage. Such a disadvantage may occur indirectly if particular applicant groups perceive the assessment context as being less relevant to the job or less fair in terms of procedure, which can decrease their motivation to take the test and thus their performance (Hausknecht et al. 2004). For instance, applicants who do not play video games often may find the game mechanics confusing or irrelevant to the job, leading to a lower perceived fairness and performance, regardless of their actual abilities (Ohlms, Hohner, et al. 2025).

Hence, examining whether test takers' occupational background is associated with their perceptions of GBAs not only has practical usefulness but also contributes to the discourse on how individual differences are associated with applicant perceptions of selection instruments.

One reason why applicants from different occupational backgrounds may differ in their perceptions of technology-based GBAs may be that GBA performance requires at least some technical competencies. Consequently, applicants from less technologically advanced occupational backgrounds may have more negative perceptions of GBAs (see Bauer et al. 2006, for a similar argument), whereas applicants from more technologically advanced occupational backgrounds may see some connection between the content of a GBA and the KSAOs required for their job, leading to more positive applicant perceptions. Furthermore, identifying such occupational background group-based differences in GBA perceptions enables organizations to make informed decisions about when and for whom GBAs are more or less appropriate to use in personnel selection processes.

The present study therefore examines whether test takers' occupational background impacts their perceptions of GBAs. Particularly, we assessed whether individuals from occupations that require predominantly technical skills rather than social skills (referred to in this article as technical vs. social occupational background, Peterson et al. 2001) have more favorable attitudes toward GBAs. Specifically, we have chosen to compare the perceptions of test takers from technical and social occupational backgrounds because the required KSAOs, the educational background, and the vocational interests differ considerably between these two occupational fields (Holland 1996; National Center for O*NET Development 2024). Additionally, we sought to examine how the person-related characteristics of potential applicants (i.e., age, gender, video game usage, and openness to experience) relate to their perceptions of GBAs. This stems from assumptions (Bhatia and Ryan 2018; Fetzer et al. 2017) that these psychological and demographic variables may also be associated with applicants' perceptions of GBAs, although initial empirical evidence yielded mixed results, leaving a need for further research before definite conclusions can be drawn.

In doing so, our study aims to provide empirically informed insights into how test takers' occupational background and person-related characteristics are related to applicant perceptions of GBAs that may help to explain the divergent findings in previous studies (e.g., Landers et al. 2022; Ohlms et al. 2024a). Specifically, we provide insights into whether test takers' occupational background, as well as their age, gender, video game usage, and openness, are associated with their perceptions of GBAs. To do so, we used applicant perception variables from Gilliland's (1993) fairness model as well as more modern applicant perception variables (i.e., enjoyment, modernity of the organization) that may be particularly relevant in the context of GBAs (Ohlms et al. 2024b). Our findings may help to clarify the divergent results observed in prior studies and offer implications for whether GBAs constitute a "one size fits all" solution that improves perceptions across different applicant groups or whether their use should be adapted to specific applicant groups to promote fairness and acceptance. Theoretically, our findings illuminate whether individual difference variables influence applicant perceptions. This provides valuable

empirical information on whether such variables need to be explicitly incorporated into theoretical models of applicant reactions (e.g. Hausknecht et al. 2004; Landers and Sanchez 2022) as factors that influence how applicants evaluate (digital) selection instruments. Moreover, our results may offer valuable information for organizations seeking to tailor their selection instruments to the specific needs of the industry and applicant group in order to attract and target suitable job seekers.

1 | Theoretical Background and Previous Research on Applicant Perceptions of Game-Based Assessments

One reason why applicant reactions matter to organizations is the growing war for talent (Vaiman et al. 2021), because of which organizations cannot afford to put off applicants with selection processes that are not well-received. Meta-analytic evidence has shown that traditional non-gamified personality and cognitive ability tests, particularly those used to pre-select applicants, are only moderately accepted by applicants (e.g., Anderson et al. 2010; Hausknecht et al. 2004). This may be explained by Gilliland's (1993) fairness model, the most important applicant reaction model. It postulates ten rules of procedural fairness (e.g., perceived job-relatedness, opportunity to perform) as important for the perception of fairness, with procedural fairness describing the perceived fairness of the selection process. The fairness rules of perceived job-relatedness and opportunity to perform may be only partially met in traditional non-gamified tests. First, this may be due to the fact that non-gamified personality and cognitive ability tests typically do not provide a direct link to the actual work task, as the items are often abstract, and thus these tests may reflect little job-relatedness. Secondly, the opportunity to present oneself may be limited in traditional non-gamified tests, which usually have a rigid structure with predetermined response options.

In recent reviews and book chapters, GBAs have been discussed as a promising way to improve applicants' perceptions compared to traditional tests (e.g., Bhatia and Ryan 2018; Woods et al. 2020). Theoretically, on the basis of Gilliland's fairness model (as well as on Landers and Sanchez 2022 extension of it to the context of game-related assessments), this may be explained by the fact that GBAs can integrate a storyline that embeds the actual items in a context (e.g., a simulation of a work day) and that thereby induces a higher level of perceived job-relatedness. In addition, because technology-based GBAs are fundamentally different from traditional tests in terms of their controls and appearance, they may be perceived differently in terms of their perceived opportunity to perform. For instance, in a GBA, applicants may have the opportunity to move freely around in the game environment and to choose the order in which they complete the GBA's tasks (e.g., Ohlms et al. 2024a), which may increase their perceived opportunity to perform.

Moreover, empirical evidence confirmed that adherence to the fairness rules and perceptions of procedural fairness have substantial positive correlations with applicants' attitudes and behavioral intentions toward the organization, such as the perceived organizational attractiveness and the likelihood of

accepting a job offer (Hausknecht et al. 2004). Thus, if GBAs improve the perceived fairness of the selection process, they may also lead to higher perceived organizational attractiveness and more positive behavioral intentions toward the organization compared to traditional tests.

Technology-based GBAs may improve not only traditional applicant perception variables, but also more novel perception variables such as the perceived enjoyment of the selection instrument and modernity of the organization. GBA is a relatively new selection method. Thus, applicants may perceive the use of such a new selection method as a signal that an organization has a modern culture, embraces new trends, and that people working in such an organization have an innovative mindset (Bangerter et al. 2012; Spence 1973). In addition, applicants may consider GBAs, which are games developed for selection purposes, as more enjoyable than traditional non-gamified tests without any game elements.

Research on GBAs is still relatively sparse and the few studies that have been published in the context of personnel selection and assessment have yielded mixed results so far. Landers et al. (2022), for example, compared applicants' perceptions of a GBA measuring cognitive ability from the mini-game genre with a traditional paper-pencil cognitive ability test. Their results showed that this GBA was rated more positively than a paper-pencil cognitive ability test in terms of intrinsic motivation, test motivation, test anxiety, procedural justice, distributive justice, perceived job relatedness, and test propriety. Similarly, Ohlms et al. (2024b) discovered that potential applicants perceived GBAs as more enjoyable and modern than paper-pencil or computer-based tests. Finally, al-Qallawi and Raghavan (2022) analyzed actual user reviews of different mobile-based GBAs and found that applicants generally showed positive perceptions of GBAs and perceived them as novel. In the same study, negative reactions to mobile-based GBAs were mostly associated with technical problems (e.g., connection errors, bugs). In contrast to these three studies, there is also some evidence that applicants' perceptions of GBAs can be more negative than those of their traditional counterparts or that there are no differences. Ohlms et al. (2024a), for example, found that an adventure genre GBA that assessed cognitive ability was perceived as less fair, and was related to lower organizational attractiveness and behavioral intentions but to higher test anxiety compared to a paper-pencil cognitive ability test. Finally, in another study Ohlms et al. (2024b) found that potential applicants rated GBAs and their traditional counterparts equally well on perceived fairness, job-relatedness, and opportunity to perform.

Given the paucity of prior research on applicant perceptions of GBAs that could provide a rationale for specific hypotheses, and the mixed results of the few studies that have been conducted, we propose the following research question:

Research Question 1: Are GBAs rated differently from non-gamified tests on (a) procedural fairness, (b) job relatedness, (c) opportunity to perform, (d) organizational attractiveness, (e) behavioral intentions, (f) modernity, and (g) enjoyment?

One potential explanation for the inconsistent findings regarding applicant perceptions of GBAs across studies may be that person-related characteristics influence how applicants perceive selection instruments, particularly digital or gamified ones.

However, Gilliland's (1993) fairness model primarily focuses on procedural justice rules and contextual features of the selection process. It does not account for individual difference variables that may shape how these processes are perceived and evaluated. Although Landers and Sanchez (2022) extended Gilliland's model to the context of GBAs by emphasizing game design elements such as mechanics and dynamics, their framework also neglects person-related characteristics as potential antecedents of applicant perceptions. Addressing this theoretical gap, we propose that incorporating person-related characteristics such as occupational background, gender, age, video game usage, and openness to experience improves theoretical accounts of why applicants react differently to GBAs.

2 | Occupational Field and Applicant Perceptions of Game-Based Assessments

As noted in the introduction, applicants' occupational background and the job they are applying for might affect their attitudes toward a technology-based GBA (see Ramos-Villagrasa et al. 2022; Woods et al. 2020). Given that different job profiles vary considerably regarding the level of technology, communication, and/or interpersonal skills required for a specific occupation, GBAs may more or less reflect the KSAOs required for a particular occupation (Woods et al. 2020) and may also be more or less aligned with the image people have of a particular occupation (Holland 1996). According to Holland's (1996) well-established classification of occupational images and types, GBAs might be perceived as congruent with the competencies, interests, and self-beliefs of individuals working in realistic occupations (i.e., according to Holland's classification, these are occupations that require technical and mechanical skills as well as the use of machines and tools). For example, a technology-based GBA might be perceived as face valid for people with occupational backgrounds that require predominantly technical skills (Peterson et al. 2001), such as engineers or computer scientists, because technical skills are also required to complete a technology-based GBA (Woods et al. 2020). Additionally, jobs that require good technical and digital skills often demand fewer social skills (e.g., software programmer, National Center for O*NET Development 2018). According to Holland's (1996) typology, realistic occupational types also show low similarity to social occupational types (i.e., occupations that require interpersonal competencies as well as skills in teaching, nurturing, and caretaking). Therefore, people with an occupational background in and applying for realistic job types may be less likely to expect the job and its selection process to include social components. Thus, the lack of social interaction in completing a GBA may be perceived as less negative by applicants from technical occupational backgrounds because social interaction is not considered relevant to the job.

In contrast, social occupations, such as kindergarten teachers or therapists, are characterized by social interaction with humans, and engaging with technical systems plays a subordinate role in these occupations (Holland 1996; National Center for O*NET Development 2024). Therefore, it is conceivable that people from social occupational backgrounds who are applying for jobs in social occupations may wonder why they have to complete a technology-based selection procedure to get a job offer, as this does not match the image they have of a social occupation

(Holland 1996). Matching this rationale, research shows that individuals working in social occupations (e.g., healthcare sector) tend to be averse to the introduction of new technologies in the workplace (e.g., Holden et al. 2016; Shulzhenko and Holmgren 2020). Accordingly, perceptions of technology-based GBAs may potentially vary depending on the occupational background or the level of technological skills required for a job (Woods et al. 2020).

In line with this reasoning, research on applicant perceptions found that perceptions of selection instruments can vary depending on the applicant's occupational background and the job for which they are applying (e.g., Martin and Nagao 1989; Murphy et al. 1990). For example, Martin and Nagao (1989) found that the use of nonsocial paper-pencil and of computer-based interviews for a high-status managerial position resulted in significantly higher levels of applicant dissatisfaction with the selection process compared to applicants for a low-status clerk position who perceived a nonsocial interview process to be appropriate for the position. This suggests that the perceived job relatedness of a given selection instrument can be influenced by one's occupational background and the specific job for which one is applying (e.g., Martin and Nagao 1989; Murphy et al. 1990). Independent of the content of a technology-based GBA, this may contribute to higher job-relatedness perceptions for people with a technical occupational background. As discussed above, the perceived job relatedness, in turn, may have far-reaching consequences for organizations, as it is related to the perceived procedural fairness of the selection process, organizational attractiveness, and other behavioral intentions toward the organization (e.g., job offer acceptance intentions, Hausknecht et al. 2004). Accordingly, the question arises as to whether individuals from technical occupational backgrounds, for whom GBAs may generally provide some degree of job relatedness, consider GBAs to be more suitable for selecting applicants for a vacancy than individuals from non-technical occupational backgrounds, for whom technology-based GBAs have lower job relatedness.

Given that technical and social occupations differ in terms of the technical skills required to perform these jobs and the degree to which one must interact with technical systems (National Center for O*NET Development 2024), we compared the perceptions of GBAs of test takers from these two occupational backgrounds. Based on Holland's (1996) classification of occupational images and types and the above-discussed research, which suggests that applicants with technical occupational backgrounds may perceive GBAs as fairer, and organizations that use them as more attractive, we propose the following hypothesis:

Hypothesis 1. *GBAs are rated more positively by test takers with technical occupational backgrounds than by test takers with social occupational backgrounds with respect to (a) procedural fairness, (b) job relatedness, (c) opportunity to perform, (d) organizational attractiveness, and (e) behavioral intentions.*

3 | Person-Related Characteristics and Applicant Perceptions of Game-Based Assessments

Another possible explanation for the mixed results on applicants' perceptions of GBAs may be related to individual

differences in perceptions of GBAs based on person-related differences. Therefore, we also aimed to examine whether test takers' gender, age, video game usage, and openness are associated with their perceptions of GBAs. These person-related characteristics are theoretically expected to be particularly related to perceptions of GBAs (Bhatia and Ryan 2018). Although some initial studies examined the relationship between person-related characteristics and perceptions of GBAs, the empirical evidence remains limited and inconsistent—which highlights the need for systematic replication, extension, and further research before drawing final conclusions. For instance, research on gender differences in perceptions of GBAs has yielded equivocal results: Although Ohlms and Melchers (2025) found no differences between men and women, other studies reported that men tend to evaluate GBAs more favorably than women do (Ellison et al. 2020). These inconsistencies underscore the importance of further research to broaden the available empirical basis and to establish more generalizable insights in this still emerging field. Nevertheless, there are several reasons to expect gender differences in GBA perceptions. First, women may have less favorable perceptions of GBA than men because they are often less motivated to play video games, play them less frequently than men, and tend to have lower technology self-efficacy (e.g., ESA 2023; González-González et al. 2022; Greenberg et al. 2010; Hartmann and Klimmt 2006; Lucas and Sherry 2004). Second, (video) games often contain competitive content and lack meaningful social interaction, which renders them less enjoyable to women than to men (Hartmann and Klimmt 2006). These factors may cause women to perceive GBAs as less attractive or appropriate for personnel selection purposes compared to men.

The role of age has received even less attention in the literature. To our knowledge, only two studies investigated whether age is associated with GBA perceptions—likely because much of the research is based on student samples with limited age variability (e.g., Ohlms et al. 2024a). Two studies used non-student samples: Ellison et al. (2020) found no age-related difference in perceptions, whereas Ohlms and Melchers (2025) reported a negative relationship between age and perceptions of GBAs. From a theoretical perspective, it seems plausible that older applicants may be more skeptical of novel selection instruments such as GBAs than younger applicants are. This may be because older people tend to play fewer video games (ESA 2022), usually find new technologies more challenging to use than younger people (Hauk et al. 2018), and tend to have a lower computer self-efficacy and less video game usage (Reed et al. 2005; Williams et al. 2008).

With regard to video game usage, it can be expected that applicants who play video games in their spare time, and thus have extensive experience with video games and enjoy playing them, might also have more positive perceptions of GBAs than applicants who have little or no experience with video games. Compared to other person-related characteristics, initial studies examining the association between video game usage and perceptions of GBAs offer more consistent results. In alignment with this assumption, Ohlms et al. (2024a) and Ohlms and Melchers (2025) found that video game usage was positively associated with test taker perceptions of GBAs.

Finally, individuals with high openness to experience are curious and flexible in their values and attitudes (Costa and

McCrae 1992). Accordingly, applicants with higher openness may perceive novel selection procedures, such as GBAs, more positively than applicants with lower levels of openness (Ryan and Ployhart 2000). In line with this, previous research found that individuals who score higher on openness are more willing to adopt novel, technology-based applications (e.g., Guadagno et al. 2008; Witt et al. 2011) and perceive technology-based selection procedures more positively (e.g., Oostrom et al. 2010). So far only one study examined the role of openness to experience in perceptions of a gamified assessment (Georgiou and Nikolaou 2020) and this study found only a marginal positive association between openness and perceptions.

By replicating and extending prior research in a more age-diverse sample and simultaneously examining four person-related characteristics, our study contributes building a more cumulative and generalizable evidence base. On the basis of the above considerations and of findings on person-related differences in perceptions of technology-based selection instruments in general and GBAs in particular, we posit that person-related characteristics such as gender, age, video game usage, and openness are related to applicants' perceptions of GBAs. That is:

Hypothesis 2. *Men perceive GBAs more positively than women.*

Hypothesis 3. *Age is negatively associated with perceptions of GBAs.*

Hypothesis 4. *Video game usage is positively associated with perceptions of GBAs.*

Hypothesis 5. *Openness to experiences is positively associated with perceptions of GBAs.*

4 | Methods

4.1 | Procedure and Sample

The study was conducted online and used a quasi-experimental design between-groups to determine effects of the occupational background from which participants stem (social vs. technical occupational background) on perceptions of GBAs and of non-gamified tests. We recruited participants through social media (e.g., LinkedIn), e-mail, or via direct contact. All participants evaluated both types of assessments. The order of the two types of assessment was determined randomly for each participant.

After giving their informed consent, all participants were presented with the same cover story: They were asked to imagine that they were looking for a job, had applied at two different organizations, and were now invited by both organizations to participate in an online assessment. One organization used a non-gamified test and the other a GBA. Based on the approach by Ohlms et al. (2024b), participants were each shown a video of approximately 4.5 min in length, featuring examples of GBAs and non-gamified computer-based tests to illustrate to them what these two selection tools might look like. The video of non-gamified tests showed various examples of cognitive- and of personality-oriented tests. Furthermore, to clarify for participants that GBAs may take on very different appearances, the video of GBAs included examples of various GBAs from different vendors (e.g., Aon assessment, LTP), with different designs, game genres (e.g., adventure, mini-game, role-play,

simulation), that measured different constructs (e.g., cognitive ability, personality). The constructs targeted in the examples provided for non-gamified tests and GBAs were thus kept constant by presenting assessments for both types of instruments that assessed personality as well as cognitive abilities.

Directly after reading the description and watching the video of either the non-gamified tests or the GBAs, participants rated various applicant perception variables related to the respective type of selection instrument. Finally, participants answered questions about their video game usage, and openness, as well as their demographics. The order in which the selection instruments (i.e., GBA vs. non-gamified test) were shown was determined randomly across participants.

We conducted a priori power analyses to determine the required sample size to test our hypotheses and research question with a power of 0.80. The analysis revealed a required sample size of $N = 108$ for a one-way analysis of variance (ANOVA) with repeated measurements to detect a small to intermediate-sized main effect to examine Research Question 1 ($f = 0.15$, correlation among repeated measures = 0.40). Furthermore, for the power analysis for the multivariate analysis of variance (MANOVA) related to Hypothesis 1, we assumed a small to intermediate effect size of $f^2 = 0.10$. This analysis revealed a sample size of $N = 134$ for five dependent variables. Furthermore, to examine the association between person-related characteristics and applicant perceptions by conducting two-tailed bivariate correlation analyses required a minimum N of 84 to detect a medium-sized effect of $r = 0.30$. Thus, we aimed to collect data from at least 134 participants.

Inclusion criteria were that participants (a) were currently working, would work (e.g., were currently studying or in training), or had worked in an occupation requiring predominantly technical or social skills (for a list of occupations classified as social or technical occupational field, see Table S1 in the supplemental material) and (b) answered both attention check items correctly (see below). For the present study, occupational backgrounds were classified as social when they require a high level of interpersonal interaction and involve little use of technology. In contrast, technical occupational backgrounds were defined as jobs in which technology is required for the majority of daily tasks. Here, the classification of occupations from O*NET (National Center for O*NET Development 2024) was used as a guideline. To test whether our categorization of social and technical occupational backgrounds was accurate, we had a second coder who was blind concerning the study's research goals and who independently coded the occupational backgrounds that participants reported. The classification of the second coder showed substantial overlap with our categorization of the occupational backgrounds ($\kappa = 0.79$, Landis and Koch 1977). Altogether, we excluded 60 participants prior to data analysis, 41 as they did not have a technical or a social occupational background, 16 as they failed the attention check, and 3 as they failed both inclusion criteria.

The final sample consisted of 179 participants (60.9% female, 38.0% male, 1.1% diverse), of which 109 were considered to have a social occupational background and 70 to have a technical occupational background. In the sample, age ranged from 18 to 79 years with a mean of 32.27 ($SD = 14.39$). Of the participants, 72.1% indicated that they already knew non-gamified computer-based tests, while 14.5% had only heard of GBAs.

4.2 | Measures

4.2.1 | Applicant Perception Variables

To measure the different applicant perception variables, we used established scales. Furthermore, unless specified differently, all items were answered on 5-point Likert scales ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Scales for which no German version existed were translated into German and checked via back-translation. All items are shown in Table S2 in the online supplement.

Perceived procedural fairness (three items; mean $\alpha = 0.90$), job relatedness (two items; mean $\alpha = 0.91$), and opportunity to perform (four items; mean $\alpha = 0.90$) were measured with three subscales of the Selection Procedural Justice Scale (Bauer et al. 2001) in a German translation used by Ohlms et al. (2024). We used a German translation from Ohlms, Melchers, and Lievens (2025) of five items each from Highhouse et al. (2003) to capture organizational attractiveness (mean $\alpha = 0.88$) and behavioral intentions (mean $\alpha = 0.89$). We assessed modernity of the organization using a semantic differential with two adjective pairs on a 5-point Likert scale (mean $\alpha = 0.83$) taken from Kanning et al. (2019). Furthermore, enjoyment of the test was assessed using three items (mean $\alpha = 0.92$) from Wilde et al. (2009).

We conducted a confirmatory factor analysis (CFA) with seven correlated factors to examine whether the different applicant perception variables represent separable factors. This CFA showed adequate fit for both the applicant perception variables concerning the GBA, $\chi^2_{\text{GBA}}(231) = 354.95$, $p < 0.001$, $CFI_{\text{GBA}} = 0.97$, $SRMR_{\text{GBA}} = 0.04$, $RMSEA_{\text{GBA}} = 0.06$, and concerning the non-gamified test, $\chi^2_{\text{test}}(231) = 479.51$, $p < 0.001$, $CFI_{\text{test}} = 0.93$, $SRMR_{\text{test}} = 0.06$, $RMSEA_{\text{test}} = 0.08$.

We also tested several alternative models. First, we tested a single-factor model that fitted poorly, $\chi^2_{\text{GBA}}(252) = 1344.90$, $p < 0.001$, $CFI_{\text{GBA}} = 0.70$, $SRMR_{\text{GBA}} = 0.09$, $RMSEA_{\text{GBA}} = 0.16$; $\chi^2_{\text{test}}(252) = 1454.17$, $p < 0.001$; $CFI_{\text{test}} = 0.65$, $SRMR_{\text{test}} = 0.10$, $RMSEA_{\text{test}} = 0.16$. We found that the seven-factor model fitted significantly better than the single-factor model, $\Delta\chi^2_{\text{GBA}}(21) = 989.95$, and $\Delta\chi^2_{\text{test}}(21) = 974.67$, both $ps < 0.001$. Secondly, we conducted a CFA with six correlated factors that defined organizational attractiveness and behavioral intentions as one factor, $\chi^2_{\text{GBA}}(237) = 396.36$, $p < 0.001$, $CFI_{\text{GBA}} = 0.96$, $SRMR_{\text{GBA}} = 0.04$, $RMSEA_{\text{GBA}} = 0.06$; $\chi^2_{\text{test}}(237) = 546.44$, $p < 0.001$; $CFI_{\text{test}} = 0.91$, $SRMR_{\text{test}} = 0.06$, $RMSEA_{\text{test}} = 0.09$. This six-factor model performed significantly worse than the seven-factor model, $\Delta\chi^2_{\text{GBA}}(6) = 41.41$, and $\Delta\chi^2_{\text{test}}(6) = 66.94$, both $ps < 0.001$. And thirdly, we conducted a CFA with five correlated factors that defined the variables of Gilliland's fairness model (i.e., perceived job-relatedness, procedural fairness, opportunity to perform) as one factor and separate factors for organizational attractiveness, behavioral intentions, modernity, and enjoyment. This model fitted moderately, $\chi^2_{\text{GBA}}(242) = 567.97$, $p < 0.001$, $CFI_{\text{GBA}} = 0.91$, $SRMR_{\text{GBA}} = 0.05$, $RMSEA_{\text{GBA}} = 0.09$; $\chi^2_{\text{test}}(242) = 736.31$, $p < 0.001$; $CFI_{\text{test}} = 0.86$, $SRMR_{\text{test}} = 0.06$, $RMSEA_{\text{test}} = 0.11$. Furthermore, the fit for this five-factor model was significantly worse than for the seven-factor model, $\Delta\chi^2_{\text{GBA}}(11) = 213.02$, and $\Delta\chi^2_{\text{test}}(11) = 256.8$, both $ps < 0.001$. Thus, taken together we considered the results of the CFAs as support for considering the applicant perception variables as separable constructs.

4.2.2 | Person-Related Characteristics

In addition to the demographic variables, the other person-related characteristics of interest were measured with established scales. First, participants' video game usage (e.g., "I often play video games", $\alpha = 0.93$) was measured using a 5-item scale from Bourgonjon et al. (2010) in the German translation from Ohlms, Melchers, Kanning, et al. (2025). Finally, we used ten items from the German version of the HEXACO-60 (Moshagen et al. 2014) to measure openness (e.g., "I like people who have unconventional views", $\alpha = 0.69$).

4.2.3 | Attention Check

We included two attention checks in our study. First, after answering the applicant perception items, participants were asked which selection instrument they had just evaluated, allowing them to choose between "game-based assessment", "computer-based test", and "I don't know". And second, in between the applicant perception items another attention check was included: "We would like to know if you read everything carefully. Therefore, please tick 'strongly agree' to show that you read everything". All participants who failed one or both of these attention checks were excluded from the study.

5 | Results

Means, standard deviations, intercorrelations, and reliabilities for the study variables are shown in Table 1. Intercorrelations for the perceptions of the GBA are presented below the diagonal and intercorrelations for the perceptions of the non-gamified test are presented above the diagonal. In line with previous research, younger participants and men reported higher video game usage than older participants and women (e.g., Gkorezis et al. 2021; Ohlms, Melchers, Kanning, et al. 2025).

Before testing the hypotheses and research question, we examined whether participants from the two occupational backgrounds differed on the various individual difference variables using *t*-tests for independent groups as well as regarding gender

using a χ^2 -test. In line with common workforce statistics (U.S. Bureau of Labor Statistics 2024), there was a significant difference between occupational background groups in terms of gender, with more women than men having a social occupational background and more men than women having a technical occupational background, $\chi^2(1) = 19.88$, $p < 0.001$. Furthermore, and not surprisingly, participants from the two occupational backgrounds also differed in terms of their video game usage, with individuals with a technical occupational background having higher scores, $t(131.34) = 2.25$, $p = 0.03$, and we also found a significant difference in age, $t(125.88) = 2.23$, $p = 0.03$, indicating that participants with a social occupational background were on average younger than participants with a technical occupational background. Participants from the two backgrounds did not differ regarding openness, $t(177) = 0.13$, $p = 0.90$.

Given the significant differences between the two occupational groups, we followed Spector's (2021) advice and examined potential covariates (i.e., gender, age, video game usage, openness) individually in the subsequent analyses. Hence, we conducted exploratory correlation analyses to examine how the different individual characteristics related to participants' perceptions of GBAs and computer-based tests (see below).

5.1 | Perceptions of Game-Based Assessments Versus Non-Gamified Tests

Separate means and standard deviations for game-based and non-gamified assessments for all applicant perception variables for the two occupational backgrounds are depicted in Table 2. To examine Research Question 1, which asked whether different applicant perception variables would be rated differently for GBAs than for non-gamified tests, we conducted a series of one-way ANOVAs with repeated measurement, with the different applicant perception variables as the dependent variable and the selection instrument (GBA vs. non-gamified test) as the independent variable. Results of the ANOVAs indicated that GBAs were rated more positively than non-gamified tests regarding organizational attractiveness, behavioral intentions,

TABLE 1 | Descriptive information and correlations among study variables.

Variable	MD	SD	1	2	3	4	5	6	7	8	9	10	11
MD			0.62	32.27	1.91	3.62	2.89	2.92	2.63	3.05	3.17	2.96	3.33
SD			0.49	14.39	1.10	0.58	1.04	0.95	0.90	0.86	0.80	1.00	1.14
Gender ^a	0.62	0.49	(-)	-0.28***	-0.36**	.14	-0.11	-0.04	-0.09	-0.02	-0.09	.08	.04
Age	32.27	14.39	-0.28***	(-)	-0.19**	.21***	.02	-0.03	.02	-0.12	-0.05	.05	.002
Video game usage	1.91	1.10	-0.36***	-0.19**	(0.93)	-0.11	.06	.06	.06	.09	.11	-0.12	-0.08
Openness	3.62	0.58	.14	.21**	-0.11	(0.69)	-0.06	.04	-0.02	-0.03	-0.04	-0.03	.05
Procedural fairness	2.79	1.01	-0.04	-0.18*	.19*	-0.07	(0.90)	.61***	.63***	.67***	.62***	.31***	.31***
Job relatedness	2.83	0.97	.03	-0.29***	.18*	-0.02	.66***	(0.91)	.71***	.68***	.61***	.28***	.36***
Opportunity to perform	2.66	0.95	-0.05	-0.20**	.21**	-0.05	.71***	.72***	(0.90)	.68***	.58***	.20***	.32***
Organizational attractiveness	3.31	0.91	-0.02	-0.32***	.26***	.03	.61***	.68***	.61***	(0.88)	.81***	.35***	.42***
Behavioral intentions	3.34	0.83	-0.04	-0.24**	.21**	.16*	.63***	.63***	.55***	.84***	(0.89)	.37***	.38***
Modernity	4.19	0.81	.05	-0.17*	.05	.06	.41***	.31***	.31***	.49***	.44***	(0.83)	.23**
Enjoyment	3.91	1.09	.07 ^a	-0.36***	.25***	-0.001	.44***	.46***	.44***	.64***	.59***	.48***	(0.92)

Note. $N = 179$. Intercorrelations for perceptions of the GBA are presented below the diagonal, and intercorrelations for perceptions of the non-gamified test are presented above the diagonal. Mean scale reliabilities (internal consistencies) are shown in the diagonal. Gender is coded as 0 = male, 1 = female.

^a $n = 177$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

TABLE 2 | Results of the one-way ANOVAs with the ratings of a) GBAs and b) non-gamified tests on the different perception variables as dependent variables and the occupational background as independent variable.

Dependent variable	GBA		<i>d</i>	Non-gamified test		<i>d</i>
	Social <i>M</i> (SD)	Technical <i>M</i> (SD)		Social <i>M</i> (SD)	Technical <i>M</i> (SD)	
Procedural fairness	2.74 (0.99)	2.87 (2.74)	0.13	2.92 (1.05)	2.83 (1.03)	-0.09
Job relatedness	2.76 (0.92)	2.94 (1.04)	0.19	2.87 (0.99)	2.99 (0.88)	0.13
Opportunity to perform	2.56 (0.91)	2.83 (0.99)	0.29**	2.60 (0.94)	2.66 (0.84)	0.07
Organizational attractiveness	3.20 (0.94)	3.48 (0.83)	0.31*	3.02 (0.93)	3.09 (0.74)	0.08
Behavioral intentions	3.23 (0.85)	3.51 (0.76)	0.34*	3.09 (0.83)	3.28 (0.73)	0.24

Note: $N_{\text{social}} = 109$; $N_{\text{technical}} = 70$. Positive values for Cohen's *d* indicate higher means for technical occupations.
* $p < 0.05$; ** $p < 0.10$.

enjoyment, and perceived modernity of the organization, all $F_s > 7.67$, all $p_s < 0.007$. According to Cohen's (1988) guidelines, the effect for modernity was large ($d = 1.35$), the effect for enjoyment was moderate ($d = 0.52$), and the effects for organizational attractiveness ($d = 0.29$) and behavioral intentions ($d = 0.21$) were small. In contrast, there were no significant differences between the two selection methods concerning ratings of procedural fairness, job relatedness, and opportunity to perform, $F_s \leq 1.85$, all $p_s \geq 0.17$.

5.2 | Effect of the Occupational Background on Perceptions of Game-Based Assessments

To assess whether individuals with a technical occupational background show more positive perceptions of GBAs than individuals with a social occupational background (Hypothesis 1), we conducted a MANOVA and subsequent ANOVAs with the different perception variables of GBAs as dependent variables and the occupational field as the independent variable. The multivariate effect was not significant, Wilk's $\lambda = 0.96$, $F(5, 173) = 1.56$, $p = 0.17$, $\eta^2 = 0.04$, but subsequent ANOVAs revealed significant effects of the occupational field for organizational attractiveness (Hypothesis 1d), $F(1, 177) = 4.16$, $p = 0.04$, $d = 0.31$, and behavioral intentions toward the organization (Hypothesis 1e), $F(1, 177) = 5.01$, $p = 0.03$, $d = 0.34$, indicating higher ratings by participants with technical occupational backgrounds than participants with social occupational backgrounds (see Table 2). Furthermore, the difference between the two occupational backgrounds for opportunity to perform fell just short of significance, $F(1, 177) = 3.35$, $p = 0.07$.

In addition, we examined exploratively whether the occupational background also influenced perceptions of non-gamified computer-based tests. Therefore, we conducted another MANOVA, this time with the different applicant perceptions of non-gamified tests as dependent variables. We found that neither the multivariate effect, Wilk's $\lambda = 0.96$, $F(5, 173) = 1.51$, $p = 0.19$, $\eta^2 = 0.04$, nor the subsequent ANOVAs were significant, all $F_s < 2.49$, all $p_s > 0.11$. Thus, participants with social and technical backgrounds did not differ in their perceptions of non-gamified tests.²

5.3 | Relationships Between Person-Related Characteristics and Applicant Perception Variables

In addition to investigating the impact of the occupational background on perceptions of GBAs, we also aimed to explore how participants' gender, age, video game usage, and openness would be related to perceptions of this assessment method (Hypotheses 2 to 5). To do so, we determined two-tailed correlations between participants' person-related characteristics and the different applicant perceptions (see the correlations below the diagonal in Table 1).

Regarding the perceptions of GBAs, we found significant negative correlations between participants' age and all applicant perception variables, with medium-sized correlations for organizational attractiveness ($r = -0.32$, $p < 0.001$) and enjoyment ($r = -0.36$, $p < 0.001$), as well as small correlations for the other perception variables (all $r_s > |-0.16|$, all $p_s < 0.03$), supporting Hypothesis 3. Similarly, in line with Hypothesis 4 there were small but significant positive correlations between participants' video game usage and all perception variables (all $r_s > 0.18$, all $p_s < 0.01$), except for modernity ($r = 0.05$, $p = 0.49$). Furthermore, the participants' openness was positively related to their behavioral intentions toward the organization ($r = 0.16$, $p = 0.03$), while the correlations for the other perception variables were not significant (all $r_s < |0.07|$, all $p_s > 0.38$). Thus, Hypothesis 5 was partly supported. Additionally, in contrast to Hypothesis 2, gender did not correlate with any of the perception variables (all $r_s < |0.08|$, all $p_s > 0.35$).

As we found a correlation of $r = -0.19$ ($p = 0.01$) between participants' age and video game usage, we determined partial correlations between age and the applicant perception variables while controlling for video game usage. The partial correlations were only slightly smaller (decreased by $r = 0.03/0.04$ in comparison to the initial product-moment correlations), suggesting that differences video game usage account for only a small portion of the relationship between age and applicant perception variables.

Finally, we also considered the correlations for the non-gamified tests exploratively. In contrast to the correlations with perceptions of GBAs, all the correlations between participants' person-related characteristics and these perceptions were rather small and nonsignificant (see the correlations above the diagonal in Table 1).

Taken together, the analyses related to Hypotheses 2 to 5 revealed that particularly individuals' age and video game usage as well as, to some extent, their openness, were associated with their perceptions of GBAs. These person-related characteristics, however, were not related to perceptions of non-gamified tests.

6 | Discussion

The primary aim of the present study was to explore whether occupational background and person-related characteristics are associated with perceptions of GBAs, in order to help explain the mixed results regarding applicants' perceptions of GBAs in previous studies (e.g., Landers et al. 2022; Ohlms et al. 2024a, 2024b). More specifically, our first goal was to examine whether test takers' occupational background affects their perceptions of GBAs. Although an applicant's occupational background may serve as a proxy for other person-related characteristics, it is often one of the few pieces of available information an organization may have when job seekers apply. Our second goal was to investigate whether person-related characteristics (i.e., gender, age, video game usage, openness) are related to perceptions of GBAs. In doing so, we adhered to a call for research by Ramos-Villagrasa et al. (2022) in providing a deeper understanding of relevant variables that may explain differences in test takers' perceptions of GBAs (see Ramos-Villagrasa et al. 2022). Furthermore, we sought to explore whether applicant reaction models such as Gilliland's (1993) fairness model and its extension to the GBA context by Landers and Sanchez (2022) should take person-related characteristics into account as antecedents of applicant perceptions of digital selection instruments. By highlighting the role of such individual difference variables, our study advances theory by proposing that expanded fairness models should incorporate individual difference antecedents that shape how applicants perceive GBAs.

Concerning the first goal, our results indicate that test takers' occupational background indeed tends to influence their perceptions of GBAs. Specifically, we found that individuals with occupational backgrounds requiring predominantly technical skills rated organizational attractiveness and behavioral intentions toward an organization using GBAs for personnel selection and assessment more positively than did individuals with occupational backgrounds requiring mostly social skills. Interestingly, participants' occupational background was not related to fairness perceptions (i.e., procedural fairness, job relatedness, opportunity to perform). Thus, our findings suggest that test takers' occupational background may not be related to their perceptions of fairness in relation to Gilliland's (1993) justice model. However, test takers' occupational background may be relevant to their broader evaluations of the organization and their intentions to pursue employment.

Regarding the second goal, person-related characteristics appeared to be associated with perceptions of GBAs, suggesting that this novel assessment method may not improve perceptions equally for all applicants. In line with results by Ohlms and Melchers (2025) and Ohlms et al. (2024a), we found that video game usage was positively related to GBA perceptions. Consistent with previous research (Ohlms and Melchers 2025; Ohlms et al. 2024a), we found that test takers' age was significantly related to perceptions of GBAs, with younger individuals

having more positive attitudes toward GBAs than older individuals. However, this result stands in contrast to findings by Ellison et al. (2020), who found no age-related differences in perceptions of a cognitive GBA, though the reasons for this inconsistency remains uncertain. Generally, age-related differences in GBA perceptions are plausible. Older individuals generally report lower computer self-efficacy and are less likely to use video games frequently, which are factors that may contribute to their greater skepticism toward GBAs compared to younger applicants (Reed et al. 2005; Williams et al. 2008). In line with results from Georgiou and Nikolaou (2020), participants' openness appears to have relatively weak positive relationship with their perceptions of GBAs. In addition, and consistent with recent findings by Ohlms and Melchers (2025), but in contrast with earlier studies from Ohlms et al. (2024a) and Ellison et al. (2020), our results did not show an association between gender and perceptions of GBAs. One possible explanation for the absence of gender-related differences in our study may lie in the changing landscape of gaming behavior. Recent representative statistics indicate that video game usage is now almost equally distributed across genders, with 53% of players identifying as male and 46% as female (ESA 2023). However, men and women continue to differ in the types of games they prefer playing. As a result, variations in the specific game mechanics or aesthetics used in different GBAs may differentially appeal to certain gender groups—potentially explaining why some studies report gender differences and others do not.

Our findings suggest that individuals' video game usage and their age may help to some extent to explain the equivocal results across studies. Test takers from technical occupational backgrounds used video games more frequently and were younger than participants from social occupational backgrounds. Accordingly, test takers' age and their video game usage may provide two reasons why test takers from technical occupational backgrounds had more positive perceptions of GBAs than test takers from social occupational backgrounds. When we controlled for test takers' gender, video game usage, and age, more positive perceptions of GBAs were still evident for test takers from technical occupational backgrounds. Thus, occupational background appears to explain (some of) the variance in applicants' perceptions of GBAs over and above video game usage and age.

Furthermore, our findings showed that GBAs were generally rated more positively in terms of perceived organizational attractiveness, behavioral intentions, enjoyment, and modernity of the organization compared to more traditional non-gamified computer-based tests. In particular, there was a large effect for perceived modernity of the organization, a medium-sized effect for enjoyment, as well as small effects for organizational attractiveness and behavioral intentions. Thus, in line with previous findings on GBAs (Ohlms et al. 2024a, 2024b), our results suggest that the use of GBAs might serve as an employer branding tool, helping organizations to position themselves as modern and to provide a more enjoyable applicant experience. In contrast, the use of GBAs seems to have less influence on direct perceptions of the actual assessment such as fairness perceptions. This is consistent with previous findings on GBAs that imply that not all applicant perceptions variables are affected equally positively (see Ramos-Villagrasa et al. 2022). More specifically, in their literature review, Ramos-Villagrasa

et al. emphasized that playful selection methods show the largest improvements on organizational attractiveness compared to their traditional counterparts, whereas positive effects on perceptions of procedural fairness and motivational outcomes were only small in most studies (e.g., Georgiou and Nikolaou 2020; Hommel et al. 2022; Landers and Collmus 2022).

These findings also raise concerns about the potential of GBAs to indirectly disadvantage certain applicant groups. If applicants from certain occupational backgrounds, or those who play video games less frequently, perceive GBAs as being less fair, engaging, or job-related, they may be less motivated to take the assessment, which could result in poorer performance. A recent study by Ohlms, Hohner, and Melchers (2025) indeed found that test takers with less video game usage performed worse on GBAs.

Taken together, our findings advance applicant reaction theories by showing that characteristics related to the individual, such as test takers' occupational background, age, video game usage, and openness to experience can systematically influence how they perceive GBAs. This implies that relevant conceptualizations such as Gilliland' (1993) applicant reaction model, as well as its extension to the GBA context (Landers and Sanchez 2022), should be explicitly extended to incorporate such person-related antecedents, given that they can impact how applicants perceive GBAs (Hausknecht et al. 2004).

Alternatively, beyond Gilliland's (1993) applicant reaction model, future research could draw on alternative theoretical frameworks that have been widely applied to explain technology acceptance and use. One such model is the Technology Acceptance Model 3 (TAM, Venkatesh and Bala 2008). The central assumption of the original TAM (Davis 1989) was that individuals' intention to use a technology is determined by their perceived usefulness (i.e., the extent to which a person thinks that using a technology enhances their performance or makes it easier) and perceived ease of use (i.e., the degree to which using a technology is free of effort). TAM3 extends this by adding determinants of perceived ease of use, such as computer self-efficacy, computer anxiety, and perceived enjoyment (Venkatesh and Bala 2008). Applying TAM3 to the context of GBAs could therefore help explain why applicants with lower technology self-efficacy or higher technology anxiety may perceive GBAs as more difficult to use and, consequently, perceive them less favorably than individuals with high technology self-efficacy or low technology anxiety. Another suitable framework could be the Unified Theory of Acceptance and Use of Technology (UTAUT, Venkatesh et al. 2003). UTAUT postulates that an individual's behavioral intentions and actual technology use are driven by performance expectancy, effort expectancy, social influence, and facilitating conditions. Importantly, the model also emphasizes the moderating role of individual difference variables, including gender, age, experience, and voluntariness of use, which influence the strength of these relationships. In the context of GBAs, these moderators could explain why specific applicant groups, such as older individuals or those with limited gaming or technology experience, might evaluate GBAs less favorably than younger or more experienced applicants. Integrating insights from these technology acceptance models with applicant reaction models could therefore provide a more comprehensive theoretical foundation for understanding how

applicants perceive and evaluate technology-based selection procedures such as GBAs.

6.1 | Practical Implications

Regarding applicant perceptions, GBAs may not be equally appropriate for all applicant groups—or in other words, GBAs might be used selectively to target specific applicant groups. Our results suggest that younger and more open individuals, as well as those who play video games more often, may perceive GBAs more favorably than older individuals and individuals with limited openness and video game usage. Similarly, potential applicants from technical occupational backgrounds might perceive organizations using GBAs for personnel selection and assessment at least slightly more positively and may be more likely to accept a job offer from such organizations than potential applicants from social occupational backgrounds. Thus, when organizations must decide whether to use a traditional computer-based test or a GBA with comparable psychometric properties, it might be recommended to consider, in particular, the use of GBAs for young people, those who frequently use video games, and open-minded applicant groups for technical positions in order to motivate potential applicants to apply and to encourage them to accept a job offer. In contrast, GBAs seem less suitable for older individuals, and people who use video games less frequently. Consequently, recruiters and organizations may select either a GBA or a more traditional assessment to select applicants depending on the applicant target group they aim to reach.

6.2 | Limitations and Directions for Future Research

We acknowledge several limitations. The first limitation arises from the fact that participants were only shown videos of different GBAs and computer-based tests and did not complete whole assessments. Nevertheless, by showing participants a wide variety of different GBAs and computer-based tests (keeping the constructs constant across GBAs and computer-based tests), we aimed to give participants a detailed overview of what these assessments might look like by showing that GBAs can vary in their specific design and content.

Another limitation of our study is that we examined and compared only two different occupational backgrounds: technical versus social occupational backgrounds. We considered these occupational backgrounds as good examples of occupational backgrounds that differ considerably concerning computer and technology usage (National Center for O*NET Development 2024) and interests (Holland 1996). Nevertheless, we encourage future research to examine a wider range of different occupational backgrounds and to assess how various occupational groups might differ in their perceptions of GBAs. Related to this, another limitation concerns the classification of participants into technical and social occupational backgrounds. Although this categorization was informed by the O*NET occupational framework (National Center for O*NET Development 2024) and showed substantial coder agreement, the occupational diversity within each group may have introduced heterogeneity that could have affected the results. Using broader categories allowed for a more generalizable

examination of trends across occupational domains. Future research should consider focusing on more narrowly defined and clearly distinguishable occupational backgrounds (e.g., software developers vs. nurses) to enhance conceptual clarity and interpretability of between-group comparisons.

A further limitation concerns the relatively small sample size of the technical occupational background group. Although our a priori power analysis indicated sufficient power for the main analyses, future studies may aim to replicate our findings with a larger sample in order to additionally detect smaller differences between occupational groups for certain variables.

Another limitation of our study is that we used a cross-sectional design, meaning we were unable to draw causal conclusions about the associations between person-related characteristics and applicant perceptions of GBAs. Therefore, future research should build on these findings by employing longitudinal or experimental designs to better identify causal relationships and uncover the psychological mechanisms underlying these associations. However, a longitudinal design would have placed a greater burden on the participants, making the study less feasible.

Building on our study, future research could examine how individual characteristics (e.g., occupational background, personality traits) and specific game elements of GBAs shape applicant perceptions. In particular, we encourage future studies to re-examine our findings using a between-subjects experimental design, where participants from distinct occupational backgrounds complete either a GBA or a traditional computer-based test.

7 | Conclusion

In recent years, interest in technology-based selection instruments, such as GBAs, has increased rapidly among both practitioners and researchers (Arnoneit et al. 2020; Ohlms et al. 2024b; Woods et al. 2020). This created a need to develop a better understanding of how different applicant groups perceive this novel assessment method, and whether GBAs are equally effective at attracting and targeting applicants from different occupational backgrounds, and with different in person-related characteristics. Our results suggest that GBAs are not perceived equally positively by all applicant groups. Specifically, individuals from technical occupational backgrounds, younger applicants, and those with more video game usage and a greater openness to experience tend to view GBAs more positively than individuals from social occupational backgrounds, older applicants, and those with less video game usage. These results help to explain some of the divergent findings in previous studies on applicant perceptions of GBAs, and emphasize the importance of considering applicants' characteristics when evaluating the suitability of GBAs for personnel selection. For organizations, our results suggest that GBAs might be a suitable employer branding tool for applicants from occupational backgrounds requiring predominantly technical skills. At the same time, care should be taken to avoid unintentionally deterring applicants who are less familiar with or comfortable around GBAs.

Acknowledgments

This work was partially supported by a doctoral scholarship of the Studienstiftung des deutschen Volkes for Marie Luise Ohlms. An earlier

version of this manuscript was used as part of the first author's doctoral dissertation (Ohlms, 2024[1]). The authors would like to thank Eleonore Kerne for her help with data collection. Open Access funding enabled and organized by Projekt DEAL.

Ethics Statement

Ethical review and approval were not required for this study in accordance with the local legislation and institutional requirements. This would only have been required for studies involving children, patients, deception, or that impose a risk for participants.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Endnotes

¹ GBAs do not necessarily need to be computer- or internet-based; they can also take analog forms (see, e.g., Fissler et al. 2018 who examined how performance on a traditional game [a jigsaw puzzle] was related to various measures of cognitive ability). However, given that the vast majority of GBAs for selection and assessment purposes are computer- and internet-based, we focused on these in the present study.

² In our analyses related to Research Question 1, which compared the different occupational backgrounds controlling for participants' gender, age, and video game usage did not qualitatively change the results and the conclusions for all dependent variables regarding the different perceptions of the GBA and the non-gamified test.

³ Ohlms M. L. (2024). *Digitization in personnel selection: Adaptation and enhancement of traditional personnel selection instruments using gamification and game-based assessment* [Doctoral dissertation]. kiz Universität Ulm, Germany.

References

- al-Qallawi, S., and M. Raghavan. 2022. "A Review of Online Reactions to Game-Based Assessment Mobile Applications." *International Journal of Selection and Assessment* 30, no. 1: 14–26. <https://doi.org/10.1111/ijasa.12346>.
- Anderson, N., J. F. Salgado, and U. R. Hülsheger. 2010. "Applicant Reactions in Selection: Comprehensive Meta-Analysis Into Reaction Generalization Versus Situational Specificity." *International Journal of Selection and Assessment* 18, no. 3: 291–304. <https://doi.org/10.1111/j.1468-2389.2010.00512.x>.
- Arnoneit, C., H. Schuler, and B. Hell. 2020. "Nutzung, Validität, Praktikabilität und Akzeptanz Psychologischer Personalauswahlverfahren in Deutschland 1985, 1993, 2007, 2020 [Usage, Validity, Practicability, and Acceptance of Psychological Personnel Selection Methods in Germany 1985, 1993, 2007, 2020]." *Zeitschrift für Arbeits- und Organisationspsychologie* 64, no. 2: 67–82. <https://doi.org/10.1026/0932-4089/a000311>.
- Bangerter, A., N. Roulin, and C. J. König. 2012. "Personnel Selection as a Signaling Game." *Journal of Applied Psychology* 97, no. 4: 719–738. <https://doi.org/10.1037/a0026078>.
- Barends, A. J., and M. L. Ohlms. 2025. "Game-Related Personality Assessment." *Current Opinion in Psychology* 65: 102095. <https://doi.org/10.1016/j.copsy.2025.102095>.
- Bauer, T. N., D. M. Truxillo, R. J. Sanchez, J. M. Craig, P. Ferrara, and M. A. Campion. 2001. "Applicant Reactions to Selection: Development

- of the Selection Procedural Justice Scale (SPJS)." *Personnel Psychology* 54, no. 2: 387–419. <https://doi.org/10.1111/j.1744-6570.2001.tb00097.x>.
- Bauer, T. N., D. M. Truxillo, J. S. Tucker, et al. 2006. "Selection in the Information Age: The Impact of Privacy Concerns and Computer Experience on Applicant Reactions." *Journal of Management* 32, no. 5: 601–621. <https://doi.org/10.1177/0149206306289829>.
- Bhatia, S., and A. M. Ryan. 2018. *The Brave New World of eHRM 2* Information Age Publishing, 81–110. Hiring for the win: Game-Based Assessment In Employee Selection." In J. H. Dulebohn D. L. Stone.
- Bourgonjon, J., M. Valcke, R. Soetaert, and T. Schellens. 2010. "Students' Perceptions About the Use of Video Games in the Classroom." *Computers & Education* 54, no. 4: 1145–1156. <https://doi.org/10.1016/j.compedu.2009.10.022>.
- Chamorro-Premuzic, T., D. Winsborough, R. A. Sherman, and R. Hogan. 2016. "New Talent Signals: Shiny New Objects or a Brave New World?" *Industrial and Organizational Psychology* 9, no. 3: 621–640. <https://doi.org/10.1017/iop.2016.6>.
- Charles, M., and K. Bradley. 2009. "Indulging Our Gendered Selves? Sex Segregation by Field of Study in 44 Countries." *American Journal of Sociology* 114, no. 4: 924–976. <https://doi.org/10.1086/595942>.
- Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences* (2 ed.). Lawrence Erlbaum.
- Costa, P. T., and R. R. McCrae. 1992. "Four Ways Five Factors Are Basic." *Personality and Individual Differences* 13, no. 6: 653–665. [https://doi.org/10.1016/0191-8869\(92\)90236-1](https://doi.org/10.1016/0191-8869(92)90236-1).
- Davis, F. D. 1989. "Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology." *MIS Quarterly* 13, no. 8: 319–340. <https://doi.org/10.2307/249008>.
- Ellison, L. J., T. McClure Johnson, D. Tomczak, A. Siemsen, and M. F. Gonzalez. 2020. "Game on! Exploring Reactions to Game-Based Selection Assessments." *Journal of Managerial Psychology* 35, no. 4: 241–254. <https://doi.org/10.1108/JMP-09-2018-0414>.
- ESA. 2022. "Essential Facts About the Video Game Industry." Technical Report Entertainment Software Association, Retrieved August 1, 2023, from <https://www.theesa.com/resource/2022-essential-facts-about-the-video-game-industry/>.
- ESA. 2023. "Essential Facts About the U.S. Video Game Industry." Technical Report Entertainment Software Association, Retrieved September 25, 2023, from <https://www.theesa.com/2023-essential-facts/>.
- Fetzer, M., J. McNamara, and J. L. Geimer. 2017. "Gamification, Serious Games and Personnel Selection." In *Wiley Blackwell Handbook of the Psychology of Recruitment, Selection and Employee Retention*, edited by H. W. Goldstein, E. D. Pulakos, J. Passmore, and C. Semedo, 293–309. Wiley. <https://doi.org/10.1002/9781118972472>.
- Georgiou, K., and I. Nikolaou. 2020. "Are Applicants in Favor of Traditional or Gamified Assessment Methods? Exploring Applicant Reactions Towards a Gamified Selection Method." *Computers in Human Behavior* 109: 106356. <https://doi.org/10.1016/j.chb.2020.106356>.
- Gilliland, S. W. 1993. "The Perceived Fairness of Selection Systems: An Organizational Justice Perspective." *The Academy of Management Review* 18, no. 4: 694–734. <https://doi.org/10.5465/amr.1993.9402210155>.
- Gkorezis, P., K. Georgiou, I. Nikolaou, and A. Kyriazati. 2021. "Gamified or Traditional Situational Judgement Test? A Moderated Mediation Model of Recommendation Intentions via Organizational Attractiveness." *European Journal of Work and Organizational Psychology* 30, no. 2: 240–250. <https://doi.org/10.1080/1359432X.2020.1746827>.
- González-González, C. S., P. A. Toledo-Delgado, V. Muñoz-Cruz, and J. Arnedo-Moreno. 2022. "Gender and Age Differences in Preferences on Game Elements and Platforms." *Sensors* 22, no. 9: 3567. <https://doi.org/10.3390/s22093567>.
- Greenberg, B. S., J. Sherry, K. Lachlan, K. Lucas, and A. Holmstrom. 2010. "Orientations to Video Games Among Gender and Age Groups." *Simulation & Gaming* 41, no. 2: 238–259. <https://doi.org/10.1177/1046878108319>.
- Guadagno, R. E., B. M. Okdie, and C. A. Eno. 2008. "Who Blogs? Personality Predictors of Blogging." *Computers in Human Behavior* 24, no. 5: 1993–2004. <https://doi.org/10.1016/j.chb.2007.09.001>.
- Hartmann, T., and C. Klimmt. 2006. "Gender and Computer Games: Exploring Females' Dislikes." *Journal of Computer-Mediated Communication* 11, no. 4: 910–931. <https://doi.org/10.1111/j.1083-6101.2006.00301.x>.
- Hauk, N., J. Hüffmeier, and S. Krumm. 2018. "Ready to be a Silver Surfer? A Meta-Analysis on the Relationship Between Chronological Age and Technology Acceptance." *Computers in Human Behavior* 84: 304–319. <https://doi.org/10.1016/j.chb.2018.01.020>.
- Hausknecht, J. P., D. V. Day, and S. C. Thomas. 2004. "Applicant Reactions to Selection Procedures: An Updated Model and Meta-Analysis." *Personnel Psychology* 57, no. 3: 639–683. <https://doi.org/10.1111/j.1744-6570.2004.00003.x>.
- Highhouse, S., F. Lievens, and E. F. Sinar. 2003. "Measuring Attraction to Organizations." *Educational and Psychological Measurement* 63, no. 6: 986–1001. <https://doi.org/10.1177/0013164403258403>.
- Holden, R. J., O. Asan, E. M. Wozniak, K. E. Flynn, and M. C. Scanlon. 2016. "Nurses' Perceptions, Acceptance, and Use of a Novel In-Room Pediatric ICU Technology: Testing an Expanded Technology Acceptance Model." *BMC Medical Informatics and Decision Making* 16: 145. <https://doi.org/10.1186/s12911-016-0388-y>.
- Holland, J. L. 1996. "Exploring Careers With a Typology: What We Have Learned and Some New Directions." *American Psychologist* 51, no. 4: 397–406. <https://doi.org/10.1037/0003-066X.51.4.397>.
- Hommel, B. E., R. Ruppel, and H. Zacher. 2022. "Assessment of Cognitive Flexibility in Personnel Selection: Validity and Acceptance of a Gamified Version of the Wisconsin Card Sorting Test." *International Journal of Selection and Assessment* 30, no. 1: 126–144. <https://doi.org/10.1111/ijsa.12362>.
- Kanning, U. P., L.-F. Kraul, and R. Z. Litz. 2019. "Einstellungen Zu Digitalen Methoden Der Personalauswahl [Attitudes Towards Digital Personnel Selection Methods]." *Journal of Business and Media Psychology* 10, no. 1: 57–61. https://journal-bmp.de/wp-content/uploads/8a_Einstellungen-zu-digitalen-Methoden-der-Personalauswahl05.02.2020-1.pdf.
- Kuhn, A., and S. C. Wolter. 2022. "Things Versus People: Gender Differences in Vocational Interests and in Occupational Preferences." *Journal of Economic Behavior & Organization* 203: 210–234. <https://doi.org/10.1016/j.jebo.2022.09.003>.
- Landers, R. N., M. B. Armstrong, A. B. Collmus, S. Mujcic, and J. Blaik. 2022. "Theory-Driven Game-Based Assessment of General Cognitive Ability: Design Theory, Measurement, Prediction of Performance, and Test Fairness." *Journal of Applied Psychology* 107, no. 10: 1655–1677. <https://doi.org/10.1037/apl0000954>.
- Landers, R. N., and A. B. Collmus. 2022. "Gamifying a Personality Measure by Converting it into a Story: Convergence, Incremental Prediction, Faking, and Reactions." *International Journal of Selection and Assessment* 30, no. 1: 145–156. <https://doi.org/10.1111/ijsa.12373>.
- Landers, R. N., and D. R. Sanchez. 2022. "Game-Based, Gamified, and Gamefully Designed Assessments for Employee Selection: Definitions, Distinctions, Design, and Validation." *International Journal of Selection and Assessment* 30, no. 1: 1–13. <https://doi.org/10.1111/ijsa.12376>.
- Landis, J. R., and G. G. Koch. 1977. "The Measurement of Observer Agreement for Categorical Data." *Biometrics* 33, no. 1: 159–174. <https://doi.org/10.2307/2529310>.
- Lucas, K., and J. L. Sherry. 2004. "Sex Differences in Video Game Play: A Communication-Based Explanation." *Communication Research* 31, no. 5: 499–523. <https://doi.org/10.1177/0093650204267>.

- Martin, C. L., and D. H. Nagao. 1989. "Some Effects of Computerized Interviewing on Job Applicant Responses." *Journal of Applied Psychology* 74, no. 1: 72–80. <https://doi.org/10.1037/0021-9010.74.1.72>.
- Moshagen, M., B. E. Hilbig, and I. Zettler. 2014. "Faktorenstruktur, Psychometrische Eigenschaften Und Messinvarianz Der Deutschsprachigen Version Des 60-item HEXACO Persönlichkeitsinventars [Factor Structure, Psychometric Properties, and Measurement Invariance of the German Version of the 60-item HEXACO Personality Inventory]." *Diagnostica* 60, no. 2: 86–97. <https://doi.org/10.1026/0012-1924/a000112>.
- Murphy, K. R., G. C. Thornton, and D. H. Reynolds. 1990. "College Students' Attitudes Toward Employee Drug Testing Programs." *Personnel Psychology* 43, no. 3: 615–631. <https://doi.org/10.1111/j.1744-6570.1990.tb02399.x>.
- National Center for O*NET Development. (2018). Computer Programmers. Retrieved August 08, 2023, from <https://www.onetonline.org/link/summary/15-1251.00>.
- National Center for O*NET Development. (2024, June 7). O*NET OnLine. Retrieved May 21, 2024 from <https://www.onetonline.org/>.
- Ohlms, M. L., A. Hohner, and K. G. Melchers. 2025. "Is Test Takers' Video Game Usage a Game Changer? Criterion-Related Validity and Potential Bias of a Cognitive Game-Based Assessment." *Applied Psychology: An International Review* 74, no. 5: e70038. <https://doi.org/10.1111/apps.70038>.
- Ohlms, M. L., and K. G. Melchers. 2025. "Are Games Always Fun and Fair? A Comparison of Reactions to Different Game-Based Assessments." *International Journal of Selection and Assessment* 33, no. 1: e12520. <https://doi.org/10.1111/ijsa.12520>.
- Ohlms, M. L., K. G. Melchers, and U. P. Kanning. 2024a. "Can We Playfully Measure Cognitive Ability? Construct-Related Validity and Applicant Reactions." *International Journal of Selection and Assessment* 32, no. 1: 91–107. <https://doi.org/10.1111/ijsa.12450>.
- Ohlms, M. L., K. G. Melchers, and U. P. Kanning. 2024b. "Playful Personnel Selection: The Use of Traditional vs. Game-Related Personnel Selection Methods and Their Perception From the Recruiters' and Applicants' Perspectives." *International Journal of Selection and Assessment* 32, no. 3: 381–398. <https://doi.org/10.1111/ijsa.12466>.
- Ohlms, M. L., K. G. Melchers, U. P. Kanning, and A. J. Barends. 2025. "Game on, Faking Off? Are Game-Based Assessments Less Susceptible to Faking Than Traditional Assessments?." *Journal of Business and Psychology* 28, no. 3. <https://doi.org/10.1007/s10869-025-10019-6>.
- Ohlms, M. L., K. G. Melchers, and F. Lievens. 2025. "It's Just a Game! Effects of Fantasy in a Sterilized Test on Applicant Reactions." *Applied Psychology: An International Review* 74, no. 1: e12569.
- Ohlms, M. L., E. Voigtländer, K. G. Melchers, and U. P. Kanning. 2024. "Is Gamification a Suitable Means to Improve Applicant Reactions and Convey Information During an Online Test?" *Journal of Personnel Psychology* 23, no. 4: 169–178. <https://doi.org/10.1027/1866-5888/a000343>.
- Oostrom, J. K., M. P. Born, A. W. Serlie, and H. T. Van Der Molen. 2010. "Effects of Individual Differences on the Perceived Job Relatedness of a Cognitive Ability Test and a Multimedia Situational Judgment Test." *International Journal of Selection and Assessment* 18, no. 4: 394–406. <https://doi.org/10.1111/j.1468-2389.2010.00521.x>.
- Peterson, N. G., M. D. Mumford, W. C. Borman, et al. 2001. "Understanding Work Using the Occupational Information Network (O*NET): Implications for Practice and Research." *Personnel Psychology* 54, no. 2: 451–492. <https://doi.org/10.1111/j.1744-6570.2001.tb00100.x>.
- Ramos-Villagrasa, P. J., E. Fernández-Del-Río, and Á. Castro. 2022. "Game-Related Assessments for Personnel Selection: A Systematic Review." *Frontiers in Psychology* 13: 952002. <https://doi.org/10.3389/fpsyg.2022.952002>.
- Reed, K., D. H. Doty, and D. R. May. 2005. "The Impact of Aging on Self-Efficacy and Computer Skill Acquisition." *Journal of Managerial Issues* 17, no. 2: 212–228.
- Ryan, A. M., and R. E. Ployhart. 2000. "Applicants' Perceptions of Selection Procedures and Decisions: A Critical Review and Agenda for the Future." *Journal of Management* 26, no. 3: 565–606. <https://doi.org/10.1177/014920630002600308>.
- Shulzhenko, E., and J. Holmgren. 2020. "Gains From Resistance: Rejection of a New Digital Technology in a Healthcare Sector Workplace." *New Technology, Work and Employment* 35, no. 3: 276–296. <https://doi.org/10.1111/ntwe.12172>.
- Spector, P. E. 2021. "Mastering the Use of Control Variables: The Hierarchical Iterative Control (HIC) Approach." *Journal of Business and Psychology* 36, no. 5: 737–750. <https://doi.org/10.1007/s10869-020-09709-0>.
- Spence, M. 1973. "Job Market Signaling." *The Quarterly Journal of Economics* 87, no. 3: 355–374. <https://doi.org/10.2307/1882010>.
- Su, R., J. Rounds, and P. I. Armstrong. 2009. "Men and Things, Women and People: A Meta-Analysis of Sex Differences in Interests." *Psychological Bulletin* 135, no. 6: 859–884. <https://doi.org/10.1037/a0017364>.
- U.S. Bureau of Labor Statistics. (2024, June 7). Labor Force Statistics From the Current Population Survey. Retrieved January 26, 2024 from <https://www.bls.gov/cps/cpsaat11.htm>.
- Vaiman, V., W. F. Cascio, D. G. Collings, and B. W. Swider. 2021. "The Shifting Boundaries of Talent Management." *Human Resource Management* 60, no. 3: 253–257. <https://doi.org/10.1002/hrm.22050>.
- Venkatesh, V., and H. Bala. 2008. "Technology Acceptance Model 3 and a Research Agenda on Interventions." *Decision Sciences* 39, no. 2: 273–315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>.
- Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis. 2003. "User Acceptance of Information Technology: Toward a Unified View." *MIS Quarterly* 27, no. 3: 425–478. <https://doi.org/10.2307/30036540>.
- Wilde, M., K. Bätz, A. Kovaleva, and D. Urhahne. 2009. "Überprüfung Einer Kurzskaala Intrinsischer Motivation [Validation of a Short Scale of Intrinsic Motivation]." *Zeitschrift für Didaktik der Naturwissenschaften* 15: 31–45. <https://pub.uni-bielefeld.de/record/2404161>.
- Williams, D., N. Yee, and S. E. Caplan. 2008. "Who Plays, How Much, and Why? Debunking the Stereotypical Gamer Profile." *Journal of Computer-Mediated Communication* 13, no. 4: 993–1018. <https://doi.org/10.1111/j.1083-6101.2008.00428.x>.
- Witt, E. A., A. J. Massman, and L. A. Jackson. 2011. "Trends in Youth's Videogame Playing, Overall Computer Use, and Communication Technology Use: The Impact of Self-Esteem and the Big Five Personality Factors." *Computers in Human Behavior* 27, no. 2: 763–769. <https://doi.org/10.1016/j.chb.2010.10.025>.
- Woods, S. A., S. Ahmed, I. Nikolaou, A. C. Costa, and N. R. Anderson. 2020. "Personnel Selection in the Digital Age: A Review of Validity and Applicant Reactions, and Future Research Challenges." *European Journal of Work and Organizational Psychology* 29, no. 1: 64–77. <https://doi.org/10.1080/1359432X.2019.1681401>.

Supporting Information

Additional supporting information can be found online in the Supporting Information section.
Online Supplement_occupational background.