

Supplementary Material - 3

Supplementary Table S1. Description of reviewed empirical studies

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Albadán et al. (2016)	CS	~50 (NR)	Professionals and university students	Unnamed	SGAD	Competences (dynamism, planning, integrity, self-control, conviction, perseverance)	-
Albadán et al. (2018)	CS	~50 (NR)	Professionals and university students	Unnamed	Otros/NA	Competences (dynamism, planning, integrity, self-control, conviction, perseverance)	-
al-Qallawi and Raghavan (2022)	CS	-	3146 user reviews	Thrive @ Sopra Steria PwC Career Unlocked Amazing Insights Cosmic Cadet KMPG Ready Nautics Skyrise City Scoutible	Otros/NA	Not applicable	Sentiment Emotions
Auer et al. (2022)	CS	621 (57.8%)	Undergraduate students ($M_{age} = 23.34$ years, 42.5% European American or white, 10.3% full-time employment)	Cognify	Otros/NA	Game performance Game events Mouse positions Trace data modeling	CA - Fluid reasoning CA - Processing speed CA - Quantitative knowledge CA - Verbal ability CA - Virtual processing Conscientiousness GPA

Study	Design	Participants		GBA			Other measures
		Size (%F)	Features	Name	Type	GBA measures	
Balcerak and Woźniak (2021)	CS	833 (60.5%)	$M_{\text{age}} = 32.6$ years, 17.5% students	Not applicable	Otros/NA	Not applicable	Process favorability Procedural justice
Brown et al. (2022)	CS	548 (82.0%)	Undergraduate students (38% White, 95% born in an English-speaking country, 94% identify as a native English speaker)	Shapes test	SGAG	Social intelligence	Social intelligence Scholastic Aptitude Test / American College Testing
Buil et al. (2020)	CS	239 (31.0%)	$M_{\text{age}} = 22.35$ years	EY Challenge	SGAG	Game score	Perception of competence Autonomy Intrinsic motivation Perceived ease of use Perceived usefulness Attitude Satisfaction Recommendation intention Organizational attractiveness
Collmus and Landers (2019)	CS	659 (51.9%)	78.6% European American or White, 67.7% full-time employent	Not applicable	TA	Not applicable	CA - Three-dimensional rotation CA - Letter and number series CA - Matrix reasoning CA - Progressive matrices CA - Verbal reasoning Time length Applicant perceptions

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Egol et al. (2017)	CS	120 (NR)	-	Unnamed	SGAD	Heuristic flexibility Social perception Attentiveness Processing speed Memory Adaptive and context dependent processing speed Adaptive flexibility	Score in ABOS examination Score in OITE examination Score in USMLE examination
Ellison et al. (2020)	CS	347 (58.8%)	MTurk participants ($M_{age} = 35.68$ years, 63.5% Caucasian, 64.2% United States, 35.6% 2+ years of work experience)	gridChallenge motionChallenge digitChallenge switchChallenge	SGAG SGAG SGAG SGAG	Working memory Complex planning capability Basic numerical comprehension Deductive logical reasoning test	Applicant reactions
Formica et al. (2017)	CS	981 (60.0%)	$M_{age} = 23.0$ years, 58% are gamers (62% casual gamers)	Not applicable	Otros/NA	Not applicable	Game mechanics checklist Big Five personality

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Georgiou (2021)	EX	103 (55.3%)	$M_{\text{age}} = 35.00$ years, $M_{\text{job experience}} = 12.00$ years, 42.8% had a master degree	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Ease of faking Opportunity to perform Job-relatedness Organizational attractiveness Video game experience
	EX	186 (54.0%)	$M_{\text{age}} = 30.04$ years, $M_{\text{job experience}} = 6.93$ years, 52.0% had a bachelor degree	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Ease of faking Opportunity to perform Job-relatedness Organizational attractiveness Video game experience Test-taking motivation Recommendation intentions Job acceptance intentions
Georgiou and Lievens (2022)	LO	100 (53.0%)	$M_{\text{age}} = 31.77$ years, $M_{\text{job experience}} = 8.21$ years, 50% had a high school degree.	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Perceived enjoyment Flow Organizational innovativeness and competence Organizational attractiveness
	EX	103 (55.0%)	$M_{\text{age}} = 35.88$ years, $M_{\text{job experience}} = 12.00$ years, 45% had a bachelor degree.	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Perceived enjoyment Flow Organizational innovativeness and competence Organizational attractiveness

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Georgiou and Nikolaou (2020)	EX	154 (45.5%)	Employees ($M_{age} = 29.96$ years, 47.7% university graduates)	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Perceived fairness Perceived predictive validity Process satisfaction Organizational attractiveness Openness to experience
	CS	131 (65.0%)	University students and alumni ($M_{age} = 26.0$ years)				
Georgiou et al. (2019)	CS	20 (NR)	HR professionals	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	-
		321 (61.0%)	Business schools' students and graduates ($M_{age} = 26.5$ years)				
		410 (46.0%)	Job seekers ($M_{age} = 29.0$ years, 72% bachelor's or master's degree)				
Gkorezis et al. (2021)	EX	161 (44.1%)	Employees in a multinational information technology company	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Organizational attractiveness Recommendations intentions Video game experience
Harman and Brown (2022)	EX	343 (58.0%)	75% White or Caucasian, 76.4% college education or more	GPM-nl GPM-illustrated	SGAG SGAG	Big Five personality	Big Five personality Applicant reactions

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Hilliard et al. (2022)	CS	300 (69.0%)	Prolific Academic participants ($M_{\text{age}} = 31.14$ years)	Unnamed	SGAD	Big Five personality	Big Five personality
		431 (NR)	Prolific Academic participants ($M_{\text{age}} = 40.0$ years, 48.5% White)				
Hommel et al. (2022)	CS	180 (68.3%)	$M_{\text{age}} = 27.2$ years, 80.6% students	Gamified Set-Shifting Task	SGAG	Cognitive flexibility	Cognitive flexibility Cognitive ability Acceptance of the assessment methods Adaptability Academic performance Experience with original test Computer experience Online game experience
Landers and Collmus (2022)	CS	352 (79.0%)	Undergraduate psychology students ($M_{\text{age}} = 23.9$ years, 49.6% White, 62.21% working at least part-time)	Unnamed	SGAG	Personality (conscientiousness and openness)	Personality (conscientiousness and openness) Applicant reactions Academic performance

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Landers et al. (2020)	EX	240 (43.8%)	MTurk participants (M_{age} =36.63 years, 86.6% were employed)	Unnamed situational-judgement test	SGAG	Self-management skills Interpersonal skills	CA – Numerical reasoning CA – Verbal reasoning Personality (Conscientiousness) Applicant reactions Procedural justice Distal organizational attitudes Conscientiousness
Landers et al. (2021)	CS	633 (57.7%)	Undergraduate students (M_{age} =21.35 years, 42.0% European American or White, 53.9% working at least part-time)	Numbubbles	SGAD	Cognitive ability	CA – Visual processing
				Resemble	SGAD		CA – Fluid reasoning
				Grid Lock	SGAD		CA – Processing speed
				Proof It	SGAD		CA – Quantitative ability
				Tally Up	SGAD		CA – Verbal ability
				Colour Pop	SGAD		Motivational outcomes
				Short Cuts	SGAD		Attitudinal outcomes
Laumer et al. (2012)	CS	127 (59.3%)	Employees (M_{age} =24.7 years, $M_{organizational\ tenure}$ =1.82 years)				Academic performance Supervisor ratings
		1,882 (56.4%)	Jobseekers (37.8% students)	Not applicable	SGAG	Not applicable	Perceived selection fairness Perceived privacy security Perceived enjoyment Perceived usefulness Perceived ease of use Intention to use self-assessments
McChesney et al. (2022)	CS	277 (NR)	MTurk participants (M_{age} =36.0 years, 65.0% Caucasian/White, 85% reported having looked for a job online at some point of their life)	Not applicable	TA	Not applicable	Perception of the organization (organizational innovation, organizational attraction) Openness to experience Propensity to innovation

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Melchers and Basch (2022)	CS	1,071 (32.6%)	Applicants ($M_{age} = 34.0$ years)	Unnamed	SGAD	GBA score	Assessment center performance
Nikolaou et al. (2019)	CS	120 (64.0%)	University students and alumni ($M_{age} = 26.0$ years, 55.0% currently employed)	Owiwi	SGAG	Competences (adaptability, resilience, flexibility, and decision-making)	Cognitive ability Big Five personality Overall job performance Academic performance Organizational citizenship behavior
Sanchez et al. (2022)	CS	112 (69.0%)	Undergraduate and graduate students ($M_{age} = 24.0$, 38% Latino)	Project M	PG	Emotional intelligence	Video game pursuit Intimidation with games Emotional intelligence Big Five personality
		100 (66.0%)	Undergraduate and graduate students ($M_{age} = 24.0$, 38% Latino)	Richie's Plank Experience	PG	Sensation seeking Heights aversion	Sensation seeking Height aversion
		105 (79.0%)	University students ($M_{age} = 23.0$, 35% Hispanic)	Balloon Pop	PG	Risk taking	Impulsiveness Risk taking Big Five personality

Study	Design	Participants		GBA			
		Size (%F)	Features	Name	Type	GBA measures	Other measures
Wiernik et al. (2022)	CS	466 (46.8%)	MTurk participants (74.5% White, 43.1% Bachelor's degree)	Virus Slayer	SGAD	Analytical thinking	-
		173 (39.3%)	MTurk participants (70.5% White, 52.0% has some college education)			Active learning	
		156 (32.5%)	MTurk participants (48.0% Hispanic, 48.1% Bachelor's degree)			Deductive reasoning Systems thinking Adaptability Situational awareness	
Wu et al. (2022)	CS	565 (52.7%)	Psychology students (M_{age} =20.1, 33.1% White)	Click Town	SGAD	Conscientiousness (achievement striving, self-discipline, and cautiousness)	Big Five personality Goal orientation Cognitive ability Game-play experience
				Word Find	SGAD		

Note. CS – Cross sectional study; EX – Experimental study; LO – Longitudinal study; NR – Non-reported; TA – Traditional assessment; SGAG – Serious game created by assessment gamification; SGAD –Serious game created by assessment gameful design; PG – Playful game; CA – Cognitive ability.