

Digital HR: A study on how game-based assessments can attract talents

Uğur Gürbüz*, Istinye University, Faculty of Economics and Administrative Sciences Department, Istinye, Istanbul, Turkey.

Mine Afacan Fındıklı, Istinye University, Business Department, Istinye, Istanbul, Turkey.

Şebnem Özdemir, Istinye University, Management Information Systems Department, Istinye, Istanbul, Turkey.

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Abstract

Recently, Talent Gap poses one of the biggest problems in the business world. As the ratio of this talent gap increases, so too does the desperation of businesses to alleviate this problem. This paper aims to contribute to research on E-HRM, by integrating digital transformation on game-based assessments in human resources applications. Out of the 35 participants in the study, 18 were male students and 17 were female students. There are 2 main instruments to gather the necessary data in this study; the Analytic hierarchy process (AHP) and state-trait anxiety inventory (STAI). The aptitudes and perspectives of 35 candidates towards the companies in terms of some criteria were measured by means of the Analytic Hierarchy Process. In conclusion, this study shows that the companies offering game-based assessments, witnessed a 72 percent more advantageous situation than companies offering traditional assessment tests.

Keywords: Digital HR; E-HRM; Game-Based Assessment; Talent Acquisition; Traditional Assessment.

1. Introduction

It can be clearly said that digital transformation causes ever-increasing changes in the business world such as new business models and new job descriptions. Therefore, we are ushering in a new age that companies should adopt these upcoming changes with digital transformation to survive, remain competitive, and not be disrupted. In that vein, due to the necessity to comply with the organization's competitive strategies, the changing competencies, and the rising demands of the workforce as well, the changes in business models and HR practices play an impactful role in business. On the other side, they are aware of the importance of employing talents who have qualified soft and digital competencies. At this point, it can be observed that companies take various actions to adapt their recruitment strategies to attract young talents. According to the 2018 Talent Gap Report, done by Manpower Group, 45 percent of employers have stated that they cannot find the talents they need, which is a highly critical issue for companies (Manpower Group, 2018). Thus, in the beginning, what begins as a mere "Talent Gap" can grow into a more worrisome "Talent Crisis."

The task of alleviating the situation becomes a critical issue, particularly for the Human Resources (HR) Departments of the ailing companies when it comes to overcoming the "Talent Crisis". HR Departments should also be the first responders to the Talent Crisis since they have the power to hire and fire. Recently, innovative, and creative ways of attraction appear with the rise of technology. That is, many companies communicate with talented people at the right place and right time via new technologies. For example, interactive career pages, social media posts, new generation recruitment processes, job interviews via artificial intelligence, beacons, and additional technological means are used (Holland et al., 2007).

Game-Based Assessment (GBA) can be an especially effective and innovative way of engaging talented individuals in the recruitment process as well. It is an assessment tool, which measures soft skills such as problem-solving, decision-making, analytical thinking, and creativity. Essentially, it is a "gamified" way of conducting traditional assessment tools that rely on the assumption that talent can be assessed just as effectively by playing a game that is interesting enough to the applicant that it engages a wider (and more descriptive) range of their skill. This is beneficial for both the company and for the "player" (applicant). While the applicant can enjoy an entertaining assessment experience, the company can see a more representative picture of their skillset. This is entirely different from traditional assessment tools (Landers, 2015). Traditional assessments generally apply conventional methods of testing such as a written document, quiz, exam, or paper. The high school graduation examination can be given as an example of a traditional assessment (Dikli, 2003).

There are some research studies about game-based assessments related to their validity and their engagement with the candidate. However, none exists in detail about what kind of perception using this form of assessment creates in the minds of talented candidates themselves related to the company in terms of technology, innovation, attractiveness, entertainment, reliability, feeling comfortable, sincerity, feeling close, will to work, feeling important and feeling close. In addition to the existing studies, this is also a very important point because this kind of data collecting from candidates can provide us a chance to see not only the game-based assessment but also the company, offering it, from the candidates' perspective.

Accordingly, the research problem of this study was defined, as "Does using game-based assessment provide an advantage to companies in the war of attracting and retaining young talents?" Our focus research question is important for a crucial reason: In today's world, companies can be disrupted because of not only the low quality of products or services but also the "lack of talented people". This is why it will be very beneficial and relevant for literature and companies to answer this research question.

1.1. Literature review

1.1.1. Digital Transformation

Digital transformation is a critical term for businesses. This is because it points to disruptive changes that may require businesses to change how they work, which costs money and time. Therefore, business leaders have begun to think more seriously about digital transformation not only from a reactionary point of view but also from a proactive point of view (Osmundsen et al., 2018).

Another key concept is digitalization's self-reinforcement. That is, digitalization takes advantage of digitization (Henriette et al., 2015). There is no return for the data after it is converted from physical to digital mediums for efficiency (XRM Vision, 2018). This is the simplest definition of digitalization. However, as we developed our understanding of business modeling, the process of using technologies to create a new culture, business processes, and customer and employee experience has long been involved in the digitalization process. The best businesses have adapted and survived in the competitive market with this synergetic momentum (Yoo et al., 2010).

The lives of consumers and customers are intertwined with digital technologies (Ebert & Duarte, 2016). By means of the increasing capacity of technologies, the digital transformation of businesses becomes easier (Gebayew et al., 2018). Digital transformation strategies consist of four dimensions: (1) structural changes (2) use of technologies, (3) changes in value creation, and (4) financing.

Data, collected by customers or employees, has a significant impact on digital transformation in the age of Industry 4.0 because technology becomes more useful when there is data to use. Accordingly, the essential step is to obtain information as much as needed from the data, even called Big Data. Nowadays, it can be already seen that companies benefit from Big Data at high speeds to stay competitive in the market, which means that they collect and analyse data (Özdemir et al., 2018).

In any part of an organization or business, it is possible to see the effects of digital transformation (Bharadwaj, 2000). According to the Global Digital Transformation Report conducted by Fujitsu with 1614 participants from 15 countries in 2017, 89 percent of business leaders actively determined that their organizations are at a stage of digital transformation. This ratio shows that even for 11 percent, who do not clearly state the degree of digital transformation (not included in their company), they now compete with 89 percent, which deals with it. The accepting "89 percent" has been planning, testing, and implementing different digital transformation projects for a long time. In the study, 34 percent of their projects had already achieved positive results. In today's world, digital transformation has become an indispensable dimension placed on the agenda of successful contemporary business leaders (Morakanyane et al., 2017). Some forecasts say that the market size of businesses dealing with digital transformation will grow from \$150 billion to \$369 billion within the next 5 years (Toolboom, 2016).

1.1.2. The transformative role of human resources in digitalization

Human resources management is a practice or process of attracting talents, onboarding employees, recruitment, orientation, learning and development, career planning and internal mobility, compensation and benefits, talent management, and payroll (Paauwe & Boon, 2009). Human resources management plays a significant role in the organization. It supports the company's vision and mission by providing HR strategies compatible with the business strategies of the company. With this, human resources strategies aim to facilitate the development of a high-performance culture to increase employee loyalty, attract and retain talent, and apply an ethical approach to managing people (Saraç, 2016).

Digital transformation exists for not only a customer but also employees. Therefore, in a digitally changing world, human resources management has a critical role to prepare employees for the digital transformation (Deo, 2017). There are two roles in human resources management. Firstly, HR practitioners must attract and hire talents who have digital and soft skills. Secondly, they must enable the existing employees to improve their digital and soft skills, which is called upskilling, or gain new ones, which is called reskilling, by providing digital or classroom training (Francina, 2018). Talents are the future of companies in the way of innovation and success. This is why, one of the key

roles of human resources management is to attract and retain new talents, which is necessary for companies to remain competitive and survive in the market (Durou et al., 2016).

In today's world, it is seen that companies are disrupted due to not only providing bad products or services but also a "lack of talented people". Accordingly, human resources management must find new ways for understanding the needs and perspectives of talents to attract and retain them. At this point, technology offers many innovative solutions to HR practitioners to communicate with talents at the right time and right place. For example, in an age when talents are spending most of their time on technological tools or applications, actively using career social media accounts, interactive career webpages, job interviews with artificial intelligence, and other innovative tactics are used to attract talents. In addition to these, game-based assessment (GBA), which is an assessment tool measuring soft skills, can be considered one of the most effective solutions to attracting and retaining talents (Landers, 2015).

1.1.3. The transformation of HR assessment in digitalization and its potential outputs

In order to measure some skills of candidates like flexibility, resilience, decision making, and adaptability in the recruiting processes, companies use assessment tools. While only traditional assessment tests were used in the past, which is the conventional methods of testing like a written document, exam, or paper, nowadays it is possible to see that game-based assessment, which is a gamified version of traditional assessment tests, are used (Wear, 2018).

While the rise of technology changes how assessments measure soft skills, it also provides companies an opportunity to create new recruitment norms. Consequently, companies have recently started using game-based assessment to evaluate different perspectives of talents, such as behavioural, business, and transversal skills (Wear, 2018). Game-based assessments are generally applied online, which gives a cost-effective high-volume administration (Maroy, 2019). Since it is on a digital platform, it collects more data than traditional assessment tests because every interaction of a candidate on the game-based assessment is stored and reported in a meaningful way. It can be said as well that it increases the degree of candidates' engagement (Landers, 2015).

A 2016 study by Cut-E reports that 89 percent of HR practitioners want to use 'games' as part of an attraction campaign, the 75 percent want to use Game-Based Assessment (GBA) in the recruiting process, and the 76 percent want to use gamification in the learning and development process (Cut-E, 2017). 23 percent of candidates think that completing an online assessment test will provide a fair and accurate test experience (CEB analysis, 2017). In addition to these studies, Siemens, having new challenges during the digital transformation process, conducted a case study to redesign their selection approach and to have a refreshed employee brand in young talents' minds. This way, they focused on two issues, which are "improving the approach to attracting young talents" and "measuring behaviours and mindset rather than just ability to improve the talent selection itself". As a solution, they implemented a game-based assessment tool. The results showed that game-based assessment created a positive perception in 79 percent of candidates about the company's brand, that 85 percent of candidates said that they enjoyed game-based assessment more than traditional approaches and that more talents were identified by means of game-based assessment approach because participants were filtered better since the pass rate increased from 24 percent to 40 percent (Assessment Systems, 2018). Today, although many organizations such as AXA Group, Unilever, and Deloitte are very interested in game-based assessments, more research is needed to establish the effectiveness of gamified assessment methods and to verify their applicability in human resource management and employee selection environments (Georgiou et al., 2019). Based on the above giving information, previous research realised on game-based- assessment revealed that it may be used as an effective tool to attract talents in the recruiting processes (Landers, 2015).

Companies should take into account 3 issues before deciding to use a game-based assessment: job appropriateness, validation, and skill evaluation limits (Parker, 2018). Even though it is interactive and engaging, it is also more costly for implementation. Accordingly, companies should know that advantages may not be meeting the costs so more research is needed (CEB analysis, 2017).

Game-based assessment, that digitizes the recruiting process, can contribute to a company's employee brand and value proposition for young talents. This is because they will be having fun while experiencing a low level of anxiety and reduced awareness of being measured (PSI, 2017). Also, the pluses of game-based assessment are to utilize bundling opportunities for the company's needs, to maximize the return of investment, to make the hiring process unbiased and accurate, and to get instant reports with candidate insights (Owiwi, 2019). Attraction is the key part of gamification in the recruiting process. Nevertheless, who HR experts want to attract depends on who they want to choose and game-based assessment can do both of them in one flow (Maroy, 2019).

1.2. Purpose of study

By integrating digital transformation on game-based assessments in human resources applications, this paper aims to contribute to research on E-HRM. The first contribution of this study aims to discover if technological improvements play an important role in attracting and retaining talents as far as it is used in a reliable, effective, attractive, and innovative way. The second is to observe what factors such as the innovative or technological structure of a company mean more top talents. And the third is the fact that companies will have a better idea about investing in game-based assessment tools or not, which are more expensive than traditional assessment tests.

2. Materials and Methods

2.1. Participants

The population of this study is young talents, that are about to graduate from a university and enter the business world. Demographically it is known as Millennials or Generation Y between 20 and 35 years old (Orange, 2016). This group of people has been chosen because they are the generation looking for new experiences, challenges, and attractive employment opportunities than the other generations. The sample in the current study consists of thirty-five upcoming job seekers from junior, senior, and postgraduate students of Boğaziçi University in Istanbul, Turkey. They came from different departments such as computer engineering, civil engineering, philosophy, educational technology, industrial engineering, software engineering, international trade, management, mathematics instruction and primary education, economy, and Turkish language and literature. Of 35 participants (%51) 18 were male students and (%49) 17 were female students. The average participants' age was 22 years. The convenience sampling method was used for the data collection which began in 2019 September and lasted for approximately 2 months.

When it comes to the experimental procedure, the first step was to contact a company from London and request 35 accounts. Then I communicated with my friends studying at Boğaziçi University and they also communicated with their friends. This way, I communicated with 35 students. I explained the process to each of them one by one and sent an e-mail that involves the link of the game-based assessment test, traditional assessment test, analytic hierarchy process surveys (AHP), and state-trait anxiety inventory (STAI). I explained one more time in the e-mail how to proceed. That is, they would respectively start with STAI, game-based assessment test, traditional assessment test, and AHP surveys.

2.2. Data collection instrument

There are 2 main instruments to gather the necessary data in this study: The analytic hierarchy process (AHP) and state-trait anxiety inventory (STAI). Firstly, the analytic hierarchy process (AHP) is a multi-criterion decision-making method articulated by Thomas Saaty in the 1970s. This method can help incorporate multiple qualitative and quantitative data inputs needed to order and select alternatives. And it includes 2 different surveys: Criteria and alternatives surveys (Saaty 2008). Secondly, the state-trait anxiety inventory (STAI) is an instrument to measure the anxiety level of candidates. It was separately improved as state and trait anxiety inventories by Spielberg and his colleagues in 1970 and was translated to Turkish by Öner and Le Compte. It was proven that the Turkish version of state-trait anxiety inventory is valid according to Kuder Richardson 20, item reliability, and test reliability technics (Yiğit et al., 2011).

2.3. Analysis

In order to analyse the perspectives and aptitudes of job seekers, the analytic hierarchy process (AHP) was used in the study. AHP method is useful for comparing different alternatives such as game-based assessment tests and traditional assessment tests. At the end of the analysis of AHP, it was possible to see which assessment tool is more advantageous for companies to attract new talents. Two surveys were used in Analytic Hierarchy Process (AHP), which are called “criteria surveys” to determine the criteria’s coefficients and “alternatives survey” to generally compare game-based assessment (GBA) and traditional assessment according to the coefficients. Criteria survey has 2 types of criteria technical and emotional. They are separated to have more correct outputs (Saaty, 2008).

In addition to this, the anxiety level of job seekers was measured by State-Trait Anxiety Inventory (STAI). This was important in terms of getting the right outcome. At the end of the analysis of STAI, it was possible to know if job seekers have a normal level of anxiety (Özben, 1991). It has 2 different inventories and consists of a total of 40 questions. Firstly, the state anxiety inventory has 4-point Likert scales, orderly 1 (none), 2 (few), 3 (mostly), and 4 (completely). The purpose is to evaluate the level of emotions and behaviours of participants. Secondly, the trait anxiety inventory also has 4-point Likert scales, orderly 1(never), 2(sometimes), 3(often), and 4(always). This one measures the frequency of behaviours and emotions in the participants’ life (Yiğit et al., 2011).

3. Results

3.1. Analytic hierarchy process

3.1.1. Criteria survey

To compare the alternatives, it was necessary to use a criteria survey for measuring the coefficients of the criteria. Data consistency analysis was applied and consistent responses were counted after data collection. If the consistency ratio is bigger than “0.1”, then the responses are inconsistent. Otherwise, they are consistent. 8 of 35 responses were inconsistent. Accordingly, 27 of them were counted for determining the coefficients of criteria.

Table 1

An example of consistency analysis of technical factors – consistent

	Technical Factors										Coefficient
	Technology	Innovation	Attractiveness	Entertainment	Reliability						
Technology	1	1,00	1,00	0,33	0,20	0,0909	0,0909	0,1200	0,0435	0,1034	0,0897
Innovation	1	1	0,33	0,33	0,33	0,0909	0,0909	0,0400	0,0435	0,1724	0,0875
Attractiveness	1	3	1	1	0,20	0,0909	0,2727	0,1200	0,1304	0,1034	0,1435
Entertainment	3	3	1	1	0,20	0,2727	0,2727	0,1200	0,1304	0,1034	0,1799
Reliability	5	3	5	5	1	0,4545	0,2727	0,6000	0,6522	0,5172	0,4993
Total	11,00	11,00	8,33	7,67	1,93						1,0000

Calculation for Consistency		
Cross-Product	Consistency Index	Consistency Ratio
0,48062	5,35514	
0,45153	5,15783	
0,77561	5,40483	0,094526111
0,95511	5,31009	
2,82757	5,66263	

Average 5,3781

Consistent

Consistency analysis was applied to the responses of candidates for the technical and emotional factors. The results are in Table 1. An example of consistency analysis of technical factors – consistent can be given as an example of consistent responses for the technical factors. Moreover, the same goes for emotional factors as well.

The first step is to write the values, which are the answers of candidates in “Table 1”. The second is to divide every value by its row sum and write next to it. The third is to calculate the coefficients with the arithmetic mean of the row sum of each criterion. The fourth is to calculate the cross-product of coefficients and criteria. The fifth is to divide cross-product values by coefficients and to sum the results. The sixth is to take the arithmetic mean of the sum and calculate the consistency index by subtracting the final arithmetic mean from the criteria number and dividing this value into the result, which is coming from the criteria number minus 1. The seventh is to find out if this is consistent by means of calculation of consistency ratio by dividing the consistency index into the core value, that is 1,12 for 5 criteria. Since the result was 0,084 which is smaller than 0.1, it comes up with “Consistent”. This calculation process is done for each criteria survey, consisting of the technical and emotional factors. Finally, the coefficients of technical factors, which are technology, innovation, attractiveness, entertainment, and reliability are respectively 0,0897, 0,0875, 0,1435, 0,1799 and 0,4993. This means that innovation is the least important factor while reliability is the most important one for this candidate.

Table 2

Technical Factors											
	Technology	Innovation	Attractiveness	Entertainment	Reliability						Coefficients
Technology	1	0,57	0,47	0,59	0,21	0,0916	0,0715	0,0821	0,0611	0,1060	0,0825
Innovation	1,74132	1	0,54	1,14	0,27	0,1596	0,1245	0,0942	0,1176	0,1345	0,1261
Attractiveness	2,12876	1,85495	1	2,14191	0,31	0,1951	0,2309	0,1747	0,2200	0,1544	0,1950
Entertainment	1,68093	0,87347	0,46687	1	0,21	0,1540	0,1087	0,0816	0,1027	0,1034	0,1101
Reliability	4,36139	3,73031	3,24852	4,85423	1	0,3997	0,4644	0,5675	0,4986	0,5017	0,4864
Total	10,91	8,03	5,72	9,74	1,99						1,0000

Calculation for Consistency

Cross-Product	Consistency Index	Consistency Ratio
0,41476	5,02944	
0,63121	5,00708	
0,98992	5,07585	0,010848896
0,55006	4,99694	0,009686514
2,48419	5,10766	
Average	5,0434	

Consistent

Consistency analysis for the technical factors on geometrical analysis

After figuring out consistent responses, it was necessary to use geometrical analysis instead of arithmetic one for the calculation of 27 consistent responses. This is because the arithmetic analysis does not reflect the true results because of the rational increase in values (Saaty 2008). This calculation led to only one table, which includes consistent responses. The last step was to conduct a final consistency analysis. The coefficient values at the end of this analysis were the final values that were included in the calculation of comparing the alternatives. Consistency analysis was conducted on the geometrical average of 27 consistent responses for the technical and emotional factors. The “Table 2” can be given as an example for the technical factors and the same calculation was done for the emotional factors. As a result, the final consistency ratio was counted as 0,009 for technical factors and 0,006 for emotional factors which are smaller than 0.1. Therefore, it produces “Consistent”.

The coefficients of the technical and emotional factors that are technology, innovation, attractiveness, entertainment, reliability, feeling comfortable, sincerity, feeling close, will work and feeling important are respectively 0,0825, 0,1261, 0,1950, 0,1101, 0,4864, 0,1545, 0,1298, 0,0899, 0,3299, and 0,2959 according to the geometrical analysis of 27 consistent responses. That is, technology is the least important factor while reliability is the most important one for 27 candidates.

3.1.2. Alternative survey

In the alternatives survey, all consistent and inconsistent responses were counted. That is, the responses of 35 candidates were taken into consideration. Table 5 can be given as an example of an alternative survey responded to by a candidate. In the calculation of the alternatives survey, the geometrical average of each item from all participants was calculated and the results were written on a table as the “Table 6”. Lastly, an advantageous alternative was found.

Table 3
Analysis of the geometrical average of the first item in the survey

1) Entertainment					
	Game Based Assessment	Traditional Assessment	GBA / Row Sum	Traditional / Row Sum	(GBA + Traditional) / 2
Game Based Assessment	1	3,42	0,773935824	0,773935824	0,7739
Traditional Assessment	0,29	1	0,226064176	0,226064176	0,2261
Row Sum	1,29	4,42			

Table 4
Analysis of the geometrical average of the first item in the survey

Preferability status of companies, offering Game-Based Assessments and Traditional assessments, based on criteria										
Assessments	Entertainment	Reliability	Innovation	Attractiveness	Feeling Comfortable	Technology	Feeling Important	Sincerety	Feeling Close	Will to Work
Game Based Assessment	77,39%	70,58%	80,41%	75,00%	77,26%	83,89%	69,31%	62,65%	69,20%	69,71%
Traditional Assessment	22,61%	29,42%	19,59%	25,00%	22,74%	16,11%	30,69%	37,35%	30,80%	30,29%

Analysis was applied to the geometrical average of responses from 35 candidates for each item. For instance, it can be seen how the analysis was made for “Entertainment” criteria in the “Table 3”. And this analysis was made for not only entertainment but also reliability, innovation, attractiveness, feeling comfortable, technology, feeling important, sincerity, feeling close and will work. At the end

of the analysis, it was possible to see which alternative is more preferable in terms of criteria, as seen in the “Table 4”. For example, game-based assessment is more preferable than traditional in terms of entertainment, reliability, innovation, attractiveness, feeling comfortable, technology, feeling important, sincerity, feeling close and will work with the ratios, respectively 77 percent, 71 percent, 80 percent, 75 percent, 77 percent, 84 percent, 69 percent, 63 percent, 69 percent, and 70 percent.

3.1.3. Cross-product of criteria and alternatives survey

The coefficients of criteria and the importance of alternatives based on these criteria were separately analysed. However, it is necessary to produce an overall conclusion. For this, cross-product on the results of alternatives and criteria surveys was calculated as seen in Table 5. In conclusion, it can be observed that game-based assessment tool creates a more positive image than traditional assessment test in the mind of 72 percent of candidates. This means that companies, offering game-based assessment tests, are 72 percent more advantageous to attract talents than the other companies are.

Table 5
Analysis of the geometrical average of the first item in the survey

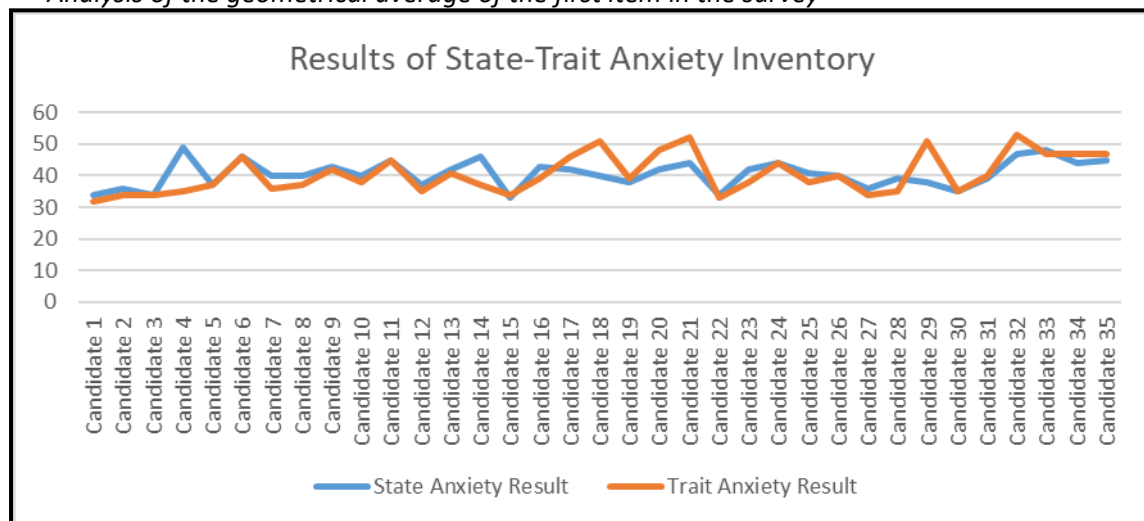
Preferability status of companies, offering Game-Based Assessments and Traditional assessments, based on criteria											
Assesments	Entertain ment	Reliability	Innovation	Attractive ness	Feeling Comforta ble	Technology	Feeling Important	Sincerety	Feeling Close	Will to Work	Sum
Game Based Assessment	0,0852	0,3433	0,1014	0,1463	0,1194	0,0692	0,2051	0,0814	0,0622	0,23	1,4433
Traditional Assessment	0,0249	0,1431	0,0247	0,0488	0,0351	0,0133	0,0908	0,0485	0,0277	0,0999	0,5567

Tools	Sum	Percentage
Game-Based Assessment	1,443	72%
Traditional Assessment	0,557	28%

3.2.State-trait anxiety inventory

To see if the data, collected by candidates, is correct and not affected by the anxiety level, a state-trait anxiety inventory was conducted. The scores must be between 20 and 80 to a normal level of anxiety. And as is seen in “Table 6”, the scores of all candidates are between these scores.

Table 6
Analysis of the geometrical average of the first item in the survey



4. Discussion

In today's world, companies fight for talents to remain competitive and survive in the market. For this, they search creative solutions to attract and retain talents (Ebert & Duarte, 2016). There are already many solutions that they are applying but it is necessary to measure how effective these solutions are. Therefore, this study focused on one of the solutions called game-based assessment that is already started to be used by companies instead of traditional assessment. And it prepared an answer for the research question defined "Does using game-based assessment provide an advantage to companies in the war of attracting and retaining young talents?"

This study shows that 72 percent of talents find companies offering game-based assessment tests more preferable than the companies offering traditional assessment tests in terms of entertainment, reliability, innovation, attractiveness, feeling comfortable, technology, feeling important, sincerity, feeling close, and will work. Accordingly, the answer to the research question is the fact that game-based assessment provides an advantage to companies in the war of attracting and retaining young talents. This result is also supported by the results of the case study done by Siemens since it emphasizes that game-based assessment created a positive perception in 79 percent of candidates about the company's brand and that 85 percent of candidates said that they enjoyed game-based assessment more than traditional approaches (Assessment Systems, 2018).

In conclusion, technological improvements such as game-based assessment have a significant role to attract and retain talents in case they are attractive, reliable, effective, and innovative. Accordingly, this research recommends companies invest in game-based assessment tools to use in recruiting processes to attract more talents.

Research to date has underlined the importance of game-based assessment as a key coping mechanism having the potential to mitigate the negative impact of various emotions during the assessment process (Georgiou, Gouras & Nikolaou, 2019). Accordingly, increased attention is given to promoting supportive assessment environments and encouraging the job candidates or talents attracted. For example, there is research in the literature on how the percentage of HR Practitioners want to use game-based assessment tools in recruiting processes, whether game-based assessment tools are valid and reliable or not, and how the percentage of candidates find game-based assessment enjoyable.

5. Conclusion

Game-based assessment is a new tool of digital transformation, which provides new technological improvements. This means that it consistently changes in time. Therefore, it is recommended to make research on the newest technology of game-based assessment in the future. Additionally, the other future research can be over whether or not additional data such as candidate's interaction on-screen and time spent on it, except for test score, can be used to learn more about candidates.

The first limitation relates to the sampling context. We collected data from 35 participants. Although the population consisted of different departments in one of the reputable universities in Turkey, a bigger sampling can provide a better insight. The second limitation was the lack of local companies offering game-based assessment tools. It would be easier to find and communicate with a local company in Turkey. The last limitation can be considered as using *only one game-based assessment tool and a traditional assessment tool* to measure the aptitudes and perspectives of 35 prospective employees towards the companies, to which they are applying.

At the same time, it is equally important that managers and supervisors are made aware of the importance of data collected through game-based assessment. This is because they have a great chance to collect more data from every interaction of a candidate since game-based assessment is an online tool. This means that managers and supervisors can have a better insight into a candidate beyond measuring the soft skills of him or her. Building on our findings, we suggest that game-based assessment tools are especially useful and beneficial for both companies and candidates in a lot of

ways. Therefore, we say that it is recommended for companies to invest in game-based assessment tools in recruiting processes.

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