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Marketing AI recruitment: The next phase in job application and selection

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ABSTRACT

Organizations are beginning to adopt and capitalize on the functionality of AI in their recruitment processes. However, little is known about how potential candidates regard the use of AI as part of the recruitment process and whether or not it influences their likelihood to apply for a job. Our research finds that attitudes towards organizations that use AI in the recruitment process, significantly influences the likelihood that potential candidates will complete the application process. The novelty factor of using AI in the recruitment process, mediates and further positively influences job application likelihood. These positive relationships between attitudes towards the use of AI in the recruitment process and the likelihood of applying for a job have several important practical implications. First, it means that whilst anxiety is naturally present when AI is part of the recruitment process, the anxiety doesn't really affect the completion of job applications and therefore, organizations do not need to spend money on either hiding their use of AI or reducing the anxiety levels of potential candidates. To the contrary, the research suggests that organizations do not need to hide their use of AI in fear of alienating potential candidates, rather organizations may want to promote their use of AI in the recruitment process and focus on potential candidates that already have positive views of both the organization and AI.

1. Introduction

Technological advancements have reshaped job application and selection practices (Derous & de Fruyt, 2016; Ryan et al., 2015) and the evolution of those practices is the result of using multimedia tools (Hunter, Shortland, Crayne, & Ligon, 2017), online applicant tracking systems (Eckhardt, Laumer, Maier, & Weitzel, 2014), and self-aware/self-learning computing systems (Herbst et al., 2017). These changes have seen e-recruitment evolve into the term we have coined, AI recruitment.

AI is any intelligent agent (e.g., device) that distinguishes between different environments and can take a course of action(s) to increase the success of achieving predetermined objectives (Oana, Cosmin, & Valentin, 2017). For job application and selection, AI can utilize behavioral and physiological characteristics (e.g., biometrics) as a part of the overall decision-making process. Physiological characteristics pertain to the shape of the body and include face recognition (Bevilacqua et al., 2014), DNA (Leckart, 2012), hand geometry (Frey & Osborne, 2017), iris recognition (Searle, 2009), micro expressions (Roulin, 2016), odor/scent (Brivitello, Fabio, Nucera, & Plebe, 2016), and retina scanning (Buettner, 2013), which companies predominantly use for authentication. Behavioral characteristics pertain to behavioral patterns of a person and can include gait (Damaševičius, Maskeliūnas, Venčkauskas, & Woźniak, 2016), typing rhythm (Chang et al., 2013), and voice patterns (Strohmeier & Piazza, 2015).

Human resources (HR) practitioners are marketing to potential job candidates the increasing use of technology-enhanced macros for accuracy, cost reduction, and time saving capability (McDonald, Fisher, & Connelly, 2017). Unfortunately, the properties of such macros are somewhat obscure, and research is somewhat lagging behind in terms of data security and the use of appropriate testing materials, as well as testing validity, when compared to traditional assessment and recruitment tools (Derous & de Fruyt, 2016; Goodman, 2017).

To date, there is little information on how job candidates will respond to organizations that can use AI recruitment to infer characteristics and to extrapolate possible behaviors in terms of job fit and performance. Facial recognition can determine candidates' sexual orientation with remarkable accuracy (Rule, Bjornsdottir, Tskhay, & Ambady, 2016). If, during the recruitment process, organizations could collect additional characteristics like age, body image, economic class, gender, health condition, race, and sexual orientation, they could then use such information to catalogue job candidates further and to discriminate where possible, in terms of job screening. This raises several ethical and privacy concerns, not to mention the determination of both

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an organization and job candidates' values. Vanderstukken, Van den Broeck, and Proost (2016) suggested that there is relative importance of a job candidates' personal values when it comes to organizational attractiveness and job application likelihood.

2. Theoretical background

2.1. AI recruitment

The proliferation in technological advances is continuously disrupting the ways in which organizations market, utilize and deploy their e-recruitment strategies (e.g., job application and selection processes), and AI is no exception. Candidates seek employment with organizations that are well suited in terms of alignment of capabilities, remuneration, training, and social connections (Van Esch, Northey, Heller, Duffy, & Striluk, 2018). While this creates a new layer of the application process to navigate, candidates can review and apply directly through an organization's website or through third-party job-search sites (e.g., CareerBuilder, GlassDoor, Indeed, Monster, Seek). Whether the applicant applies directly or indirectly, the websites have the potential to, and in some cases, use AI to filter, determine, and match the most suitable candidate with the available job (Bogle & Sankaranarayanan, 2012).

Whilst the marketing and use of AI is new in e-recruitment, AI itself has been around for some time; yet, there is still much controversy as to both its use and definition (Franklin & Graesser, 1996). Russell and Norvig (1995) defined AI as "anything that can be viewed as perceiving its environment through sensors and acting upon that environment through effectors" (p. 31), whilst Hayes-Roth (1995) attempted to broaden the definition by suggesting that AI provides "reasoning to interpret perceptions, solve problems, draw inferences and determine actions" (p. 329). Both the intent and the purpose of AI is to conduct activities autonomously and independently of any external inputs either during or after the activity. To realize the full potential of AI in the e-recruitment process, any AI-based decisions/recommendations must rely on the original inputs (e.g., scope) the programmers set prior to the interaction with the potential candidate, rather than have either humans or other AI tools adding inputs during the interaction phase (Jennings & Wooldridge, 1998, pp. 3–28).

2.2. Job application likelihood

Web-based e-recruitment platforms utilizing AI can be more effective in assuring objectivity and reducing costs for both applicant and employer (Konradt, Warszta, & Ellwart, 2013; Viswesvaran, 2003). Moreover, as an additional benefit, different industries and sectors across the globe are adopting AI based technologies due to their speed in delivering real-time outcomes in the application, verification, and selection of job applicants (Arthur, Glaze, Villado, & Taylor, 2009; Dineen, Noe, & Wang, 2004; McCarthy et al., 2017).

The AI recruitment process needs to be a two-way channel of communication and information. For the applicant, the information needs to include, as a minimum, the benefits, conditions, job requirements, policies, processes, regulations, and rules (Wang & NOE, 2010). For organizations, communication from potential candidates needs to include attitudes, career highlights, educational achievements, expectations, motivational behaviors, and their physical capabilities to complete specific job requirements (Stone & Lukaszewski, 2009). Unfortunately, most e-recruitment technologies do not validate the employment information (e.g., cover letter, resume, video) that prospective candidates submit, and often, there is little to no feedback from employers to candidates on job suitability based on the prerequisite selection criteria (Bogle & Sankaranarayanan, 2012). This is where AI, instead of a human, can be useful to bridge the interaction gap between candidate and potential employer. This would involve the AI having rules in terms of search criteria, employee and employer ratings, past and present employer references, validation and evaluation of applications, and submitted data, as well as a proper decision based on attitudinal and physical attributes in terms of ability to perform the job role (Lohani et al., 2017).

3. Research hypothesis

3.1. Technology use motivation

Individuals use and adapt new technologies because they desire the benefits from its use (Want, Schilit, & Jenson, 2015). Despite the growing use of recruiting technologies, video-conferencing, and additional selection tools in HR, there is little research examining job applications that use AI (Levashina, Hartwell, Morgeson, & Campion, 2014). The marketing of perceived usefulness strongly motivates people to use technology, and applicants may use AI to apply for a job due to the many benefits it can offer the user (Chen, Chen, & Chen, 2009). The use of AI has intrinsic values that include the need or want to accomplish a specific goal/reward in the shortest possible time. Perceived usefulness relates to job application likelihood, and the use of technology to apply for a job vacancy must provide the potential candidate with a level of perceived enjoyment (Davis, Bagozzi, & Warshaw, 1992; Webster & Martocchio, 1992). This extrinsic motivation (e.g., personal enjoyment) influences technology use motivation (Venkatesh, 2000; Yi & Hwang, 2003). Brahmana and Brahmana (2013) suggested that in an e-recruitment context, if the process is enjoyable, exciting, fun, and interesting, it positively influences potential job applicants' willingness both to use and to promote e-recruitment technology. Hence, we hypothesize:

H1. Technology use motivation of job seekers will positively influence their job application likelihood.

3.2. Mediating effect - novelty of activity

When candidates apply for jobs that utilize AI, they will be more attentive and possibly distracted by its novelty aspect (Venkatesh, Thong, & Xu, 2016). This is because technology has brought both ambiguity and novelty into the e-recruitment process. Moreover, there is limited, if any, research on the use of AI technology and the job application process (Pardamean, 2014). Moreover, the marketing and use of AI as a recruitment tool presents new opportunities and challenges for employers (Menon & Rahulnath, 2016).

Organizations through their marketing, commit extensive financial and technological resources to attract and recruit high-caliber candidates (Eveleth, Baker-Eveleth, & Stone, 2015). The role of AI recruitment is an important aspect in the process, yet little research has explored how the use of AI influences candidates' recruitment experiences or their attitudes and intentions towards the organization. Potential candidates have specific expectations and require certain confirmations in terms of recruitment technology and its determinants (Gravili & Fait, 2016). Even though certain technological advances can be both unique and novel, such expectations about the organization candidates' experiences with such technologies as a whole can lead them to either affirm or to reject such technology (Pardamean, 2014). Both confirmation and expectation influence candidates' perceptions of the usefulness of e-recruitment technology, plus their intentions towards and their satisfaction with the e-recruitment process. Moreover, content, engagement, and interactivity influence the usability and acceptance of e-recruitment technology (Lin, Tsai, Joe, & Chiu, 2012). We hypothesize:

H2. The novelty of AI activity will mediate the relationship between technology use motivation and job application likelihood.

3.3. Moderating effect - attitude towards the organization

In the war for talent, many organizations have started to market and use different technological platforms to communicate with and attract talent as part of their e-recruitment strategies (Van Esch & Mente, 2018). This brand image is a critical component of the recruitment process, as one of the key factors that prevents applicants from applying for a job is, in fact, their attitudes towards the brand image and the organization itself (Matthews, Son, & Watchravesringkan, 2014). Moreover, whilst organizations both market and implement AI recruitment as part of their job application and selection strategy, it appears that the novelty of AI is secondary to how candidates determine whether to apply for a job or not, which is mostly the result of how they perceive the organization (Foster, Punjaisri, & Cheng, 2010). Through the early stages of recruitment, potential applicants' initial attraction towards an organization is one of the factors that makes the candidate apply for a job in the first place. Factors such as the application process, job requirements, and job security all come second to both the candidates' attraction (e.g. through marketing) and their attitude towards the organization (Holm, 2014).

The marketing of technological characteristics influences the perception of organizational attractiveness in relation to e-recruitment outcomes (Pramod & Bharathi, 2016). Interestingly, there is limited research on pre-use cognitions and post-use technology perceptions when it comes to e-recruitment outcomes and potential candidate attitudes towards the organization (Beechler & Woodward, 2009). Howardson and Behrend (2014) argued that when the pre-use expectation of e-recruitment technology is that it will be user-friendly, this has a positive, indirect effect on candidate perceptions of organizational attractiveness. Moreover, positive postuse technology perceptions occur when objectivity and usability expectations specifically relate to organizational attractiveness (Minge & Thüring, 2018). Candidate expectations play a substantial role in recruitment outcomes. Therefore, organizations must consider candidate pre-use technology perceptions when implementing e-recruitment strategies involving the latest technological advances (e.g., AI). Moreover, when candidates have positive attitudes toward an organization, whatever the technology requirements during the recruitment phase (e.g., AI), they are more likely to apply for the job (Moroko & Uncles, 2008). Palmer (2010) suggested that improvements in an organization's brand image directly improve the likelihood of candidates applying for a job. We hypothesize:

H3. Attitude towards the organization will have a positive first stage moderating effect on the mediated model, resulting in a moderated mediation.

3.4. Moderating effect - anxiety

In today's stressful and fast-paced work environment, feelings of anxiety can become a serious problem. This is particularly true for prospective employees, and as the competitive nature of job application continues to grow, so too do the feelings of anxiety, distress, and frustration (Cook, 2016). One of the main sources of anxiety comes from the employment interview which is the most common selection tool used by organizations' (Wanberg, 2012). Anxiety in the applicant has some serious implications on their likelihood to apply for the job. High levels of anxiety often lead to a low job interview score.

Social anxiety is extremely relevant to job interviews, because it affects listening skills, nonverbal communication skills, and verbal communication skills. When applying for a job that incorporates AI, factors of social anxiety may still commonly occur even when factors of direct communication (e.g., being face to face and on location) are not present (Macan, 2009).

Respondents to job applications that openly use AI for selection, may feel the emotional labor of the process, which includes anxiety, depression, emotional exhaustion, and stress (Bakker, Demerouti, & Schaufeli, 2003). Such factors could be a strong deterrent for someone looking to apply for a job using AI (Villani et al., 2017). Despite the upside of applying for and ultimately being selected for a job, the downside is that, for potential candidates, some anxiety may be present towards organizations that use AI in the recruitment process. The presence of anxiety may cause organizations to consider how best to reduce uncertainty and anxiety. However, if anxiety is just naturally present because AI in the hiring process is not really understood by people yet, and the anxiety doesn't really affect the recruitment process, then the practical value may mean that organizations do not need to spend money on reducing anxiety of potential candidates, when such spend would not really make a difference if they complete the recruitment process or not. We hypothesize:

H4. Anxiety will have a negative second stage moderating effect on the moderated mediation (TUM-ATO-NOA-JAL), resulting in a dual stage moderated mediation.

As such, the objectives of this research confirm that AI recruitment is the next technological phase in the recruitment process. Second, they confirm that the novelty of AI recruitment positively affects candidates' technology use motivation and job application likelihood. Last, job applicant anxiety towards the use of AI recruitment is secondary to attitude towards the hiring organization (Fig. 1).

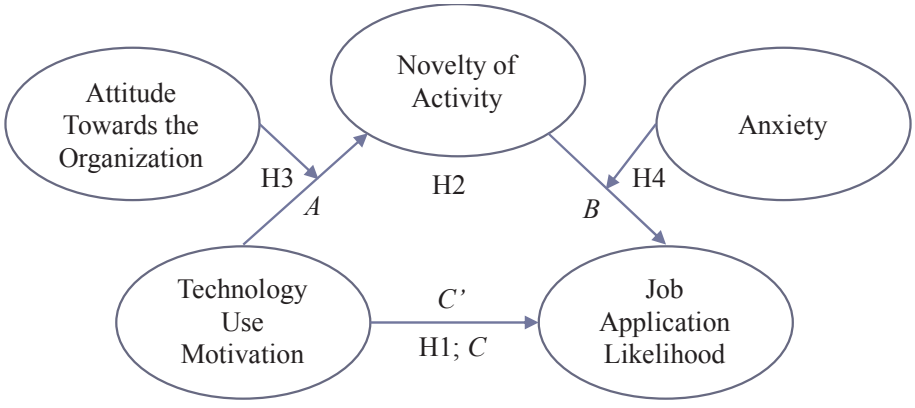

Fig. 1. Conceptual framework.

4. Methodology

4.1. Data collection

We employed a cross-sectional design in which participants ($n = 532$) were recruited through an online survey platform (Hauser & Schwarz, 2016; Smith, Roster, Golden, & Albaum, 2016). Participants received $0.15 for successfully completing the survey, a reasonable rate of pay compared to similar survey tasks. All participants were considered "talent", as talent is an encompassing characteristic that concerns all potential, current and future employees (e.g. not restricted to only a few individuals), regardless if some have more talent than others.

4.2. Measures

This study used established scale items consisting of such measures as Job Application Likelihood (Feldman, Bearden, & Hardesty, 2006), which comprises five items measuring the perceived probability that a person will advance through the stages of a job application process from contacting the company to accepting the position if it is offered (1 = Very likely; 7 = Very unlikely). Technology Use Motivation (Dong, Evans, & Zou, 2008), and it comprises five items measuring the degree to which a job candidate believes that use of a certain piece of technology will lead to positive, personal consequences (enjoyment, independence, confidence) (1 = Strongly disagree; 7 = Strongly agree). Novelty of Activity (Guiry, Mägi, & Lutz, 2006), and it comprises four items measuring the degree to which a person views a specified activity or experience as being novel and arousing curiosity (1 = Strongly disagree; 7 = Strongly agree). Attitude Towards the Organization (Aaker, Vohs, & Mogilner, 2010), and it comprises four items measuring a person's attitude toward working for a particular company and the likelihood of seeking employment with it in the future (1 = Strongly disagree; 7 = Strongly agree). Anxiety (Winterich & Haws, 2011), and it comprises three items measuring the degree to which a person is uncomfortable using a particular piece of technology and avoids using it (1 = Not at all; 7 = Very much). Table 1 summarizes the scales used in this study.

5. Results

In support of H1, we found a positive effect on the relationship between technology use motivation and job application likelihood ($\beta = .38$, $p < .01$). Technology use motivation is a specific measure of intrinsic measures of attractiveness of AI in the recruitment process. Put simply, if the potential candidate receives intrinsic benefits from using AI in the recruitment process, they are then more likely to apply for the job that they know uses AI in the recruitment process.

Table 1
Reliability, Descriptive statistics & Cronbach's alpha.

Scales	Mean (SD)	JAL	TUM	NOA	ATO	ANX
Job Application Likelihood (JAL)	4.68 (1.32)	[0.89]				
Technology Use Motivation (TUM)	4.28 (1.36)	.667**	[0.91]			
Novelty of Activity (NOA)	3.36 (1.04)	.640**	.751**	[0.87]		
Attitude Towards the Organization (ATO)	5.58 (1.21)	.503**	.431**	.493**	[0.90]	
Anxiety (ANX)	4.02 (1.60)	-.226**	-.103*	−0.067	-.170**	[0.85]

Note: $^{*}p < .05$, $^{**}p < .01$; Cronbach's Alpha = [$\alpha > 0.7$].

Table 2
Mediating effect - Novelty of activity.

	Path	Model
Total Effect: (TUM → JAL; not controlling for NOA)	(Path C)	.65**
TUM → NOA	(Path A)	.50**
NOA → JAL	(Path B)	.43**
Mediated Effect: (TUM → NOA x NOA → JAL)	(Path AB)	.22**
	95% CI	(.13, .33)
Direct Effect: (TUM → JAL; after the addition of NOA)	(Path C′)	.38**

Note: $^{**}p < .01$.

5.1. Mediating effect – novelty of activity

To investigate the role of novelty of activity in the process that links technology use motivation and job application likelihood, separate bias-corrected bootstrap models were created, with 10,000 bootstrap samples taken from existing data as recommended by Hayes (2015). This process generates a 95% confidence interval, whereby mediation can be determined if zero falls outside the confidence interval, as per Preacher, Rucker, and Hayes (2007) and Zhao, Lynch, and Chen (2010). In support of H2, we find the mediation (e.g., Path AB) effect is significant ($p < .01$, 95% CI = 0.13, 0.33). In addition, the effect of technology use motivation (e.g., Path A), is significant ($p < .01$). And, the effect of novelty of activity (e.g., Path B) on job application likelihood is significant ($p < .01$) (Table 2). Novelty of activity is another measure of intrinsic motivation and like technology use motivation, is a measure of anticipated intrinsic benefits of using AI in the recruitment process. These empirical results could inform how much organizations both publicize that they use AI in the recruitment process and/or the extent to which the organization tries to find or target potential candidates that are already positive about the novelty of AI and organizations who use it in the recruitment process.

5.2. Dual stage moderated mediation

In support of H3 and H4 and to test for conditional effects with dual stage moderated mediation, we employed the PROCESS macro for SPSS (Model 21, Hayes, 2013), with separate bias-corrected bootstrap models created, using 10,000 bootstrap samples (Table 3).

An investigation of conditional indirect effects further supports attitude towards the organization as a moderator (H3) and anxiety as a moderator (H4) of job application likelihood (e.g., dual stage moderated mediation). We analyzed this conditional indirect effect at three values for each moderator. For attitude towards the organization, these values were the mean (5.58), one standard deviation below the mean (4.37), and one standard deviation above the mean (6.79). For anxiety, they were the mean (4.02), one standard deviation below the mean (2.42), and one standard deviation above the mean (5.62). The bootstrap CIs indicated significant effects at the lower levels (SD-1) for both

Table 3
Regression results: Dual stage moderated mediation.

Independent variables	NOA	JAL
Constant	−.03 (.03)	4.68** (.04)
TUM	.50** (.03)	.38** (.07)
ATO	.22** (.04)	–
TUM x ATO	.04* (.02)	–
NOA	–	.43** (.09)
ANX	–	−.14** (.03)
NOA x ANX	–	.06* (.03)
R^2	.61	.52
MSE	.43	.83
F	261.62**	118.61**
DF	3, 528	4, 527

Note: $^{*}p < .05$, $^{**}p < .01$; The numbers in parentheses are standard errors.

Table 4
Indirect effects: Dual stage moderated mediation.

Conditional indirect effect (IE) of Novelty of Activity for		Boot IE	Boot SE	95% CI
Low ATO	4.37	.15	.04	.08 to .23
	5.58	.19	.04	.12 to .27
	6.79	.23	.04	.15 to .32
High ATO	4.37	.18	.05	.09 to .29
	5.58	.23	.05	.15 to .33
	6.79	.28	.06	.18 to .40
Low ANX	2.42	.15	.04	.08 to .23
	4.02	.17	.04	.08 to .26
	5.62	.18	.05	.09 to .29
High ANX	2.42	.23	.04	.15 to .32
	4.02	.26	.05	.17 to .35
	5.62	.28	.06	.18 to .40

Attitude Towards the Organization and Anxiety, as well as at the higher levels (SD + 1) (Table 4). In the presence of anticipated intrinsic benefits and positive attitudes toward organizations that use AI in the hiring process, the impact of anxiety on job candidates is that their anxiety levels are not strong, and you would not necessarily expect them to be strong. After all, even though participants might expect feelings of anxiety about AI in the recruitment process to go down as the benefits from AI in the recruitment process go up, it is still possible to have some anxiety, even if they have high expectations of anticipated benefits. Therefore, job applicant anxiety towards the use of AI recruitment is secondary to an applicants' attitude towards the hiring organization.

5.3. Moderating effect - attitude towards the organization

In further support of H3, we tested the moderating effect of attitude towards the organization on technology use motivation and novelty of activity (Hayes, 2013, Model 1). The results of the regression indicated that the two predictors explained 61% of the variance ($R^2 = 0.61$, $F(3, 528) = 261.62$, $p < .01$). We found that attitude towards the organization significantly predicted novelty of activity ($\beta = 0.22$, $t(528) = 5.53$, $p = .01$), as did technology use motivation ($\beta = 0.50$, $t(528) = 16.55$, $p = .01$). The interaction accounted for a significant proportion of the variance ($\Delta R^2 = 0.01$, $\Delta F(1, 528) = 6.01$, $p = .01$, $\beta = 0.04$, $t(528) = 2.45$, $p = .01$). The bootstrap CIs indicated significant effects at all three levels for attitude towards the organization (Fig. 2).

5.4. Moderating effect - anxiety

In further support of H4, we tested the moderating effect of anxiety on novelty of activity and job application likelihood (Hayes, 2013, Model 1). The results of the regression indicated that the two predictors explained 46% of the variance ($R^2 = 0.46$, $F(3, 528) = 113.62$, $p < .01$). We found that anxiety significantly predicted job application likelihood ($\beta = -0.16$, $t(528) = -5.07$, $p = .01$), as did novelty of activity ($\beta = 0.80$, $t(528) = 16.30$, $p = .01$). The interaction accounted for a significant proportion of the variance ($\Delta R^2 = 0.01$, $\Delta F(1, 528) = 8.18$, $p = .01$, $\beta = 0.08$, $t(528) = 2.86$, $p = .01$). The bootstrap CIs indicated significant effects at all three levels for anxiety (Fig. 3).

6. Discussion

The marketing and use of AI is an emerging trend in the e-recruitment process. Even though its current applicability is in the initial phase of the applicant selection process, job applicant anxiety towards the use of AI is secondary to an applicants' attitude towards the hiring organization.

There is little information about job candidate responses to the application and selection processes when embedding AI into the recruitment process. Sylva and Mol (2009) suggested that candidates appear more satisfied with the features and procedures of e-recruitment when they are technologically advanced. Moreover, perceived efficiency and user-friendliness are the most important factors in terms of overall satisfaction with technology-based recruitment and the organization as a whole (Dineen, Ash, & Noe, 2002; Lievens & Harris, 2003; Ployhart, 2006).

Integrating candidate experiences of e-recruitment technologies could significantly bolster AI recruitment technology and its value co-creation component. Connecting potential candidates, current employees, and organizations to an advanced recruitment environment would create a technology-mediated recruitment service ecosystem where feedback is formative and immediate (Lusch, Vargo, & Tanniru, 2010). Candidates who use e-recruitment technologies that incorporate AI have an opt-in choice, at which point the system will select the most qualified applicant. This provides timely notice to the candidate and benefits the organization in terms of employee quality as well as return

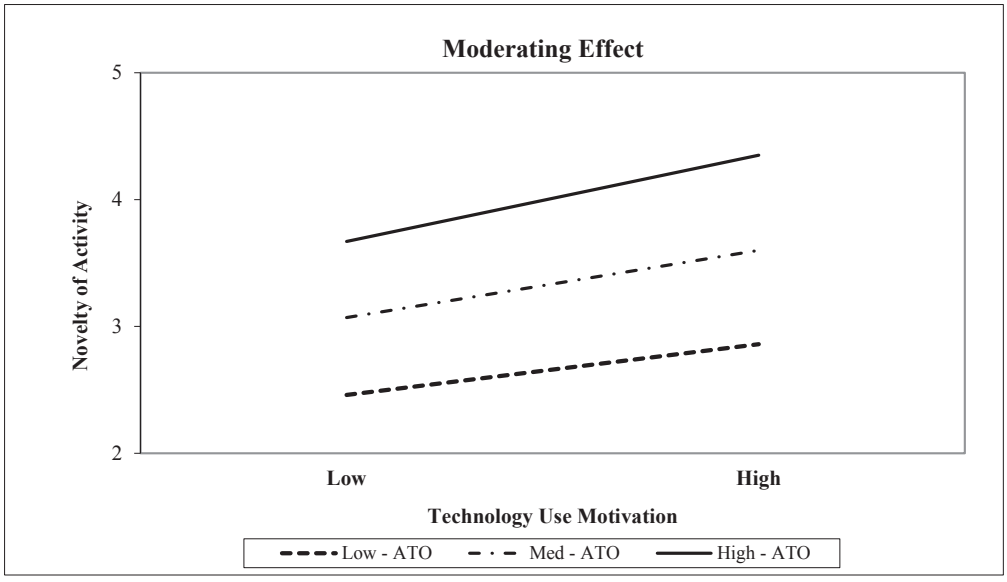

Fig. 2. Moderating effect - Attitude towards the organization.

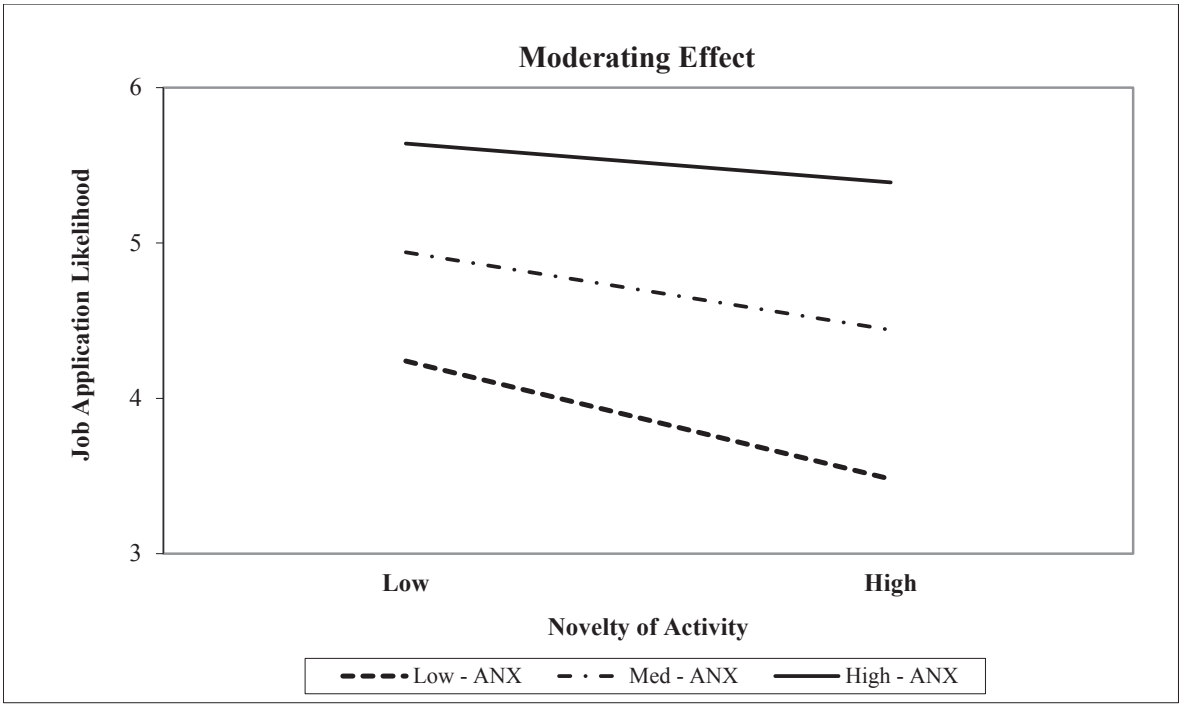

Fig. 3. Moderating effect – Anxiety.

on investment, considering the various costs associated with e-recruitment technologies (Spaid & Flint, 2014).

AI is a multifaceted construct when it comes to human-computer interaction (Agarwal & Venkatesh, 2002). The individual usability of AI in the job application process influences job candidates' attitudes and perceptions towards the organization (Allen, Johnson, Kiburz, & Shockley, 2013; Kashi & Zheng, 2013). HR practitioners need to ensure a multipronged approach to influence the target market of desired job applicants (Maurer & Liu, 2007). This includes applying a technology-based job marketing approach as well as persuasive communication and decision making to encourage potential applicants to use AI recruitment as part of the organization's overall marketing and HR talent management processes.

HR practitioners must be aware that the uptake or not of AI-recruitment processes has the potential to cause separated actors (e.g., job applicants, organization). This could have relational consequences for communities, networks, and virtual interactions (Lepak & Snell, 1998). Moreover, these consequences affect the inter- and intra-level relationships, as technology use motivation at the job applicant level is a necessity for HRM effectiveness at the macro level (e.g., organizational, strategic) (Anderson, 2003; Strohmeier, 2007).

Huang and Liao (2015) suggested that the novelty of AI in the recruitment process fosters positive, sustainable preemployment relationship behavior due to five key factors: (a) aesthetics, (b) ease of use, (c) playfulness, (d) service excellence, and (e) usefulness. Ease of use and playfulness enable candidates with low cognitive innovation to form sustainable relationships with potential employers, whilst aesthetics, service excellence, and usefulness are the enablers for candidates with high cognitive innovation. Moreover, Robinson, Marshall, and Miriam (2005) suggested that the adoption of interactive technology is a function of a candidates' characteristics, experiences, and needs (Shim & Mary, 1990), and that measures such as information and system quality are important paradigms for predicting the success of the specific type of e-recruitment technology in use (Fiore, Kim, & Lee, 2005).

Not surprisingly, the marketing and use of AI in the human resource management (HRM) field has the potential to cause ethical, legal, privacy, moral, and vilification concerns for potential candidates. This is primarily due to the AI component having the ability to consider a candidate's physical attributes as part of the overall decision-making process. This has the potential to cause significant levels of anxiety, and due to AI recruitment being in its infancy, candidates may not be aware of AI's full capability within the decision process. Moreover, if AI is to be mutually beneficial, then the learning process could mean that candidate and potential employer inputs in terms of selection criteria vet each other and either allow or deny them as part of the overall e-recruitment experience. As the AI self-learning system develops, selection will depend on restrictions and behaviors rather than initial inputs.

For job candidates to adopt AI as part of the e-recruitment process, intrinsic motivation must occur and provide an opportunity to meet the inner needs of the potential candidate for application likelihood to transpire (Vallerand & Bissonnette, 1992; Yoon Kin Tong, 2009). To support the use of AI as an additional component of the e-recruitment process, those who have obtained employment will have intrinsic motivation to recommend and support the use of AI recruitment technology due to the extrinsic reinforcements increasing the intrinsic enjoyment of their successful job-application process (Tucker-Ladd, 2000, pp. 316–465). Moreover, word-of-mouth among those who have found employment via AI-recruitment technology will be the fastest way to encourage new potential candidates to use newly developed AI recruitment technology (Yoon Kin Tong, 2009).

Because AI is in its infancy in recruitment processes, candidates may not be aware of AI's full capability within the entirety of the decision process. In fact, the presence of anxiety may cause organizations to consider how best to reduce uncertainty and anxiety. However, if anxiety is just naturally present because AI in the hiring process is not really understood by people yet, and the anxiety doesn't really affect the application process, then the practical value, as in this case, means that organizations do not need to waste money on reducing anxiety when such spend would not really make a difference in whether people complete the job application process or not.

With the development and marketing of AI as an enhancement to the recruitment process, organizations will still need to ensure they address issues such as selection biases, slow feedback, and technology problems, otherwise job applicants will continue to remain discontented and the attraction and retention of quality job applicants

could fall into jeopardy (Chapman & Webster, 2003; Feldman & Klaas, 2002; Lin, 2010; Pfieffelmann, Wagner, & Libkuman, 2010). Opposing, positive job applicant responses to their experiences with AI recruitment processes could lead to a higher acceptance rate of job offers and a more positive attitude towards the hiring organization.

7. Limitations, future research, and conclusion

The study has several limitations. First, the study only explored potential job candidates' perceptions towards technology use motivation, attitudes towards organizations who use AI in the recruitment process, novelty of AI in the recruitment process and anxiety levels of using AI and their effects on candidates completing the job application process, which reduces the generalizability of the research. Second, the study did not evaluate differences between demographic profiles. Third, an interesting limitation of the research is that we asked participants specifically about AI recruitment, and not about other mediums such as augmented reality or virtual reality and how they may morph together to aid the recruitment and selection process. Lastly, the study only explored two specific measures of intrinsic benefits, namely technology use motivation and novelty of activity.

Future research should explore other intrinsic motivators and rewards of AI recruitment technology and their effect on attitudes towards the hiring organization and job application likelihood. Moreover, additional research should include scenarios where applicants complete the AI recruitment process in either simulated or 'live' environments as well as explore attitudes and behaviors of those people who gained successful employment via the use of AI recruitment technology.

In most instances, hiring organizations have not explicitly disclosed AI's full use and capability during the recruitment process (e.g. a candidates' physical attributes are assessed and form part of the overall decision-making process). Therefore, employers contemplating integrating AI recruitment into their HRM strategies may want to conduct additional research into their target candidate pool, their responses to AI recruitment technology as well as how they will communicate AI's full capacity to avoid alienating potential talent. Moreover, AI recruitment has the potential for ethical, legal, privacy, moral, and vilification concerns for potential candidates, and organizations will need to find ways to navigate these issues in their respective jurisdictions, as well as being prepared to handle any backlash or ramifications from potential candidates (Van Esch, Northey, Striluk, & Wilson, 2017). Lastly, further investigation is necessary into the authority levels for the inputs that help to guide the process and the learning capability of the AI-recruitment tool (Dickson & Nusair, 2010).

In conclusion, the introduction of AI recruitment technology to the different HR functions and hiring decisions may disrupt the need for, and the function of, some HR practitioners. Moreover, this may have further implications for the ways in which potential candidates respond to organizations in the absence of humans and how HR practitioners adopt and work alongside AI recruitment technology. Further research may shed light on the threshold of job applicants' willingness to use AI and other technological advancements in the recruitment process and how this may affect their attitude towards the hiring organization and job application likelihood.

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