Measuring the Acceptance Behavior of Recruitment Apps: Structural Equation Modeling

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ABSTRACT: Attracting talents, converting them as potential job applicants and retaining them as successful workforce, are great deals for Human Resource Department. Online recruiting options offered significant tools to face the challenge. Companies used to recruit through their own websites, resume banks, career sites and job boards. These tools did not work out as expected. Thanks to smartphones and internet connectivity, mobile applications have become part and parcel of the people, particularly the youngsters. Recruitment through the App increases firms' competitive advantage through increased efficiency and economy. The purpose of the study is to explore the exogenous and endogenous latent variables influencing the acceptance behavior, propose a Conceptual Model and empirically test the same using Structural Equaiton Modelling Technique. This paper provides a new outline for the evaluation of smartphone recruitment application. The model has been framed to overcome the gap in the pre-existing conventional model like, TAM, TAM2, TAM3, UTAUT, UTAUT2. While most of these models focus on "customers" as end users, the researcher has framed this model focusing "job seekers" as end users. The findings suggest that the degree of Career App Usage by the Job Seeking Adults is highly influenced by the App Usage Habit, Social Influence and Extensive(Active) Job Search.

Keywords: Recruitment, Online, Electronic, Mobile, Smartphone, Application, App, Empirical Study, TAM, UTAUT, Exogenous latent variables, Endogenous latent Variables, Human Resource Management, Information System.

1.   INTRODUCTION

Recruiting and developing firm's workforce in a digital world which is characterized by endemic talent scarcity, changing values and shifting online and offline behaviours of candidates and employees is crucial (Laumer, Eckhardt, & Weitzel, n.d.). Smartphone applications have changed the business ecosystem with an unprecedented growth, emerging as a popular tool among market practitioners to directly get connected to consumers with just a single touch (Malik, Suresh, & Sharma, 2017).

Electronic recruitment has become an essential practice among modern firms in various industries thanks to the importance of human resource capabilities toward building competitive positioning (Moghaddam, Rezaei, & Amin, 2015). The growing use of the mobile information technologies has created new opportunities for organizational communication. Even though the mobile channel in the personnel marketing mix offers interesting perspectives, but it is yet to be widely applied. Similarly, knowledge about the opportunities and empirical evidence on user acceptance is still missing (Niklas & Böhm, 2011).

The rapid growth and use of the Internet over the last several years have changed the way companies conduct business activities, including the activities of human resource management. To attract talents and convert as best employees are great challenges for Human Resource Department. Online recruiting has become a significant tool for Human Resource Department. Companies can recruit through their websites, resume banks, newspaper classified ads and job boards. Online recruiting practice increases firms' competitive advantage through increased efficiency and economy (Karim, Miah, & Khatun, 2015). Social

networking sites are demonstrated as an emergent agent for recruiters. Employers have elevated the online employment trend to greater heights by registering in numerous social networking sites for recruiting talents (Ramasamy & Raman, 2014).

1.2 The purpose of this study is to:
• Explore the *exogenous and endogenous* latent variables influencing the acceptance behavior.
• Propose a *Conceptual Model* causing behavioral intention & usage behavior.
• Empirically test the cause and effect relationship in the proposed model.

2. REVIEW OF LITERATURE

The conventional theoretical models i.e. TRA, TAM, TPB, UTAUT, and DOI have focused on the technology acceptance. Similarly, ECT and IS Continuance Models have focused on continuous use of technology. Advancement in technology, changing consumption patterns, availability of improved resources and infrastructure, changing demographics make it vital to study pre-existing models with regard to mobile apps (Malik et al., 2017). Perceived enjoyment is an important additional factor influencing user acceptance (Davis et al., 1992). The significance of enjoyment has an influence on usage intention in the case of hedonic system usage like mobile gaming (Okazaki et al.,2008). However, also non-hedonic or just partly-hedonic usage contexts like the adoption of SMS services or mobile Internet have shown relevance for the enjoyment construct (Lu et al.,2010; Kim et al.,2008). In the case of mobile information services, users usually have the opportunity to defer usage to a later time when a desktop PC would be available (Niklas & Böhm, 2011).

Malik, Suresh and Sharma (2017) explored the factors that triggered the app adoption and its continuous usage among Indian consumers. They proposed a conceptual model with satisfaction and habit as mediating variables for the adoption of two types of mobile apps, namely, utilitarian apps and hedonic apps. Moghaddam, Rezaei, and Amin (2015) examined the impact of information content qualities (ICQ), vividness (VID), interactivity (INT), attractiveness and effectiveness (EFE), search engine optimisation (SEO), website ranking (WER), and ease of navigation (EN) on job seekers' perception and behavioural intention (BI).

During the past decade, many significant models of information technology (IT) utilization behavior have emerged in the MIS literature. These models, like, technology acceptance model (TAM) and the task-technology fit model (TTF), provide a much needed theoretical basis for exploring the factors that explain software utilization and its link with user performance. These models offer different, though overlapping perspectives on utilization behaviour (Dishaw & Strong, 1999). Niklas and Böhm (2011) proposed a most important predecessor of behavioural intention, namely, individual's mobile desire.

TAM focuses on attitudes toward using a particular IT which users develop based on perceived usefulness and ease of use towards IT. TTF focuses on the fitness between user task needs and the available functionality of the IT (Dishaw & Strong, 1999). TAM has also been implemented in the enterprise to determine the degree of acceptance of technology by employees. Venkatesh and Bala (2008), implement a model based on TAM to help the decision making in organizations, the model was named TAM3. The model combines TAM2 determinants and the determinants of perceived ease of use. The new determinants support the variable Perceive Ease of Use to understand how that could enhance employees' adoption and use of IT. In this context Chen, Chen, & Yen, (2011) focuses in self-efficacy variable using mobile devices finding that self-efficacy plays a positive role on Perceive ease of use variable, while it only partially affects Perceive usefulness between employees (Coeckelbergh, 2012).

Venkatesh et al. (2003) worked in a review of several constructs from the eight main models of the last century. The models and theories include: Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM – TAM 2), Combined TAM and TPB (C-TAM-TPB), Motivational Model (MM), Model of PC Utilization (MPCU), Theory on Reasoned Action (TRA), Innovation and Diffusion Theory (IDT) and Social Cognitive Theory (SCT) and found UTAUT that aimed at evaluating the degree in which a user has the

intention to use any technology or information systems. The model is based in four main constructs: performance expectancy, effort expectancy, social influence and facilitating conditions. The UTAUT also is moderated in order to sustain the impact of the four main constructs by four determinants as moderators (Gender, Age, Experience and Voluntariness of use).

However, in order to reach the study of technology acceptance in the consumer's context Venkatesh et al. (2012) proposed the UTAUT2. As the first UTAUT was based on extrinsic motivation, the authors added the variable hedonic motivation as a key predictor in the consumer behaviour. Also the authors observe a difference between technology acceptance in an organizational context and in a non-organizational context. The effort expectancy of employees about the effort and time used in acceptance of a technology is different in a consumer that they must bear the cost of the technology, in this case the Price Value was added in UTAUT2 to explain consumers' actions (Coeckelbergh, 2012).

Moghaddam, Rezaei, and Amin (2015) applied Structural equation modelling (SEM) using partial least squares (PLS) path modelling approach for the assessment of measurement models and performed structural models to empirically test the proposed hypothesis, taking 232 graduate students as target population. (Karim et al., 2015) investigated the perceptions and behaviors of job-seekers concerning the use of the Internet as a recruiting source with 204 survey questionnaires distributed to job seekers who are almost regularly using Internet for various purposes. Ahmed, Tahir, and Warsi (2015) analyzed the relationship between e-recruitment and their adoption behaviour using a convenient sample of 250 job seekers from different universities students of Karachi. By validating the instrument, one sample t-test was performed to test the relationship of selected variables i.e. **cost saving, time saving, extensive search and unlimited excess** with the behavior of job seekers in adopting e-recruitment method, using SPSS 17.0 Statistical evidence at 0.05 level of significance.

Laumer, Eckhardt, and Weitzel n.d.(2009) had drawn on a Delphi study with leading HR executives from 25 internationally renowned large firms and on a quantitative survey with 144 HR managers from German top 1,000 firms to define the key trends and issues for modern HR executives. **Demographic challenges and the war for talent** were seen as the most important trends in firms of all sizes and in all industries, even ahead of **social media** or the **global economic crisis**.

Xia, Zhang, and Zhang (2016) examined online experience by combining **design features and social factors**, and explored the interrelationships between **online experience and Smartphone users' destination image**. After conducting a pre-test to examine the internal construct structure through exploratory factor analysis, a survey company distributed online questionnaires to recruited smartphone users. Confirmatory factor analysis was employed to confirm reliability and validity, and a structural equation modeling test with maximum likelihood estimation was performed to identify the relationships among the proposed constructs. Moghaddam, Rezaei, and Amin (2015) found that information content qualities (ICQ), vividness (VID), interactivity (INT), attractiveness and effectiveness (EFE), search engine optimisation (SEO), website ranking (WER) were positively related to graduate students' perception and behavioural intention (BI). In contrast, ease of navigation (EN) does not influence BI. Niklas and Böhm (2011) found that while the PU to use the mobile web for retrieving job- related information had a moderate influence on BI, enjoyment seemed to be of little importance and concluded that for an m-recruiting offering to be accepted, further proliferation and familiarization of users with mobile services, generating a "mobile desire" in general is important in addition to innovative appearance and entertainment.

Karim, Miah, and Khatun (2015) found that perceived usefulness and perceived enjoyment are positively and significantly related to the behavioural intention to use internet as a job search tool and the developers of online job sites needed to provide additional useful functionalities or tools in the sites to help users for job search. Ahmed, Tahir, and Warsi (2015) proved that cost saving, time saving, extensive search and unlimited excess were significantly correlated with a e-recruitment adoption (Ahmed et al., 2015).

Laumer, Eckhardt, and Weitzel n.d.(2009) revealed that HR managers' most pressing challenges were staff retention and internal and external employer branding. Overall, the results emphasized the importance for

an E-HRM that needs to be both effective- adequately filling vacancies and efficient- making best use of scarce resources. Xia, Zhang, and Zhang (2016) found that perceived usefulness and ease of use were important factors that enhanced users' online experience with smartphone applications. Positive relationships existed between users' online experiences and cognitive and affective image. In addition, both of these factors positively contributed to the overall destination image.

3.1 MODEL FRAMEWORK:

As a result of the systematic review of select articles on technology acceptance models, a few factors were identified and categorized (Table 1) as exogenous (external) factors that directly and indirectly affect the behavioral intention and usage behavior. They include, Self Efficacy of user, Facilitaing Conditions available, App usage Habit, Extent of Social Influence and Extent of Job Search.

Endogenous (internal) factors that directly affect the behavioral intention and usage behavior of job seekers towards career applications and also act as Mediators (M) between Independent Factors (X) and Dependent Factor (Y) . They include, App Perception or understanding, App Attitude or thoughts and App Intention or plan.

Table 1 Description of the Model Constructs

Sl.No	Constructs	Reference	Definitions
3.1	**Exogenous Latent Variables**	Davis, 1989 Sung Youl Park et al., 2012	Exogenous variable in causal modeling is the independent variable, which is predetermined and given outside the model
3.1.1	Self Efficacy	Geyer, 2009	An individual's knowledge, proficiency, fluency and self-efficacy of internet domain.
3.1.2	Facilitating Conditions	Arenas, 2015 Alwahaishi et al. 2013 Venkatesh et al. 2003	Objective factors in the environments that can make technology usage easy
3.1.3	Usage Habit	Ahuja et al. 2016	Habit reflects compulsive behavioural tendencies developed during the past history of the individual
3.1.4	Extensive Search	Ahmed et al. 2015	The degree of effort taken to find what is desired
3.1.5	Social influence	Kim et al. 2011; Yadav et al.2015; Venkatesh et al. 2003; Eckhardt et al. 2009	The degree to which an individual perceives that others believe he/she should use official destination smartphone apps.
3.2	**Endogenous Latent Variables**	Sung Youl Park et al., 2012	Endogenous variable is determined by the states of other variables in the model, contrasted with an exogenous variable
3.2.1	**Cognitive Domain**	Kladou & Mavragani, 2015; Sung Youl Park et al., 2012	Cognitive image is the most attractive and popular component for online users' evaluation

3.2.1.1	*Perception*	Davis, 1989; Venkatesh, 2012; Kim et al. 2011; Arenas, 2015; Chan et al. 2010; Al-maghrabi et al. 2011	The understanding about the usefulness, ability and ease of use of something
3.2.1.2	*Attitude*	Davis, 1989; Venkatesh, 2012; Ghalandari, 2012; Tang, 2016	The way of approach or thinking towards something
3.2.1.3	*Intention*	Davis, 1989 Venkatesh et al. 2000, 2003, 2008, 2012 Sung Youl Park et al., 2012	A concern to perform or positively utilize a technology
3.2.2	**Affective Domain**	Sung Youl Park et al., 2012	The act of performing the intended action, forming initial expectation
3.2.2.1	*Usage Behavior*	Davis, 1989 Venkatesh et al. 2000, 2003, 2008, 2012	The act of downloading and using the intended mobile application, forming initial expectation

3.2 Proposed Conceptual Model

On the basis of the above constructs, a model is proposed (Fig. 1) below. Although pre-existing models focused on technology adoption and continuous usage in the certain fields like, commerce; an extended model should be proposed focusing recruitment of human resources, this has not been tested in the Indian context. Hence, the researcher has developed a new model keeping in mind the vast changes in the technology and recruitment practices.

4 METHODOLOGIES ADOPTED

To attain the study objectives, Questionnaire with 3 constructs, consisting of 41 items in addition to demography was designed carefully. 50 Job Seeking adults were taken as samples conveniently. Structural Equation Modelling Technique (AMOS 21) was adopted after undergoing Reliability Test and Factor Analysis (SPSS 23). The key results are provided in table and figures.
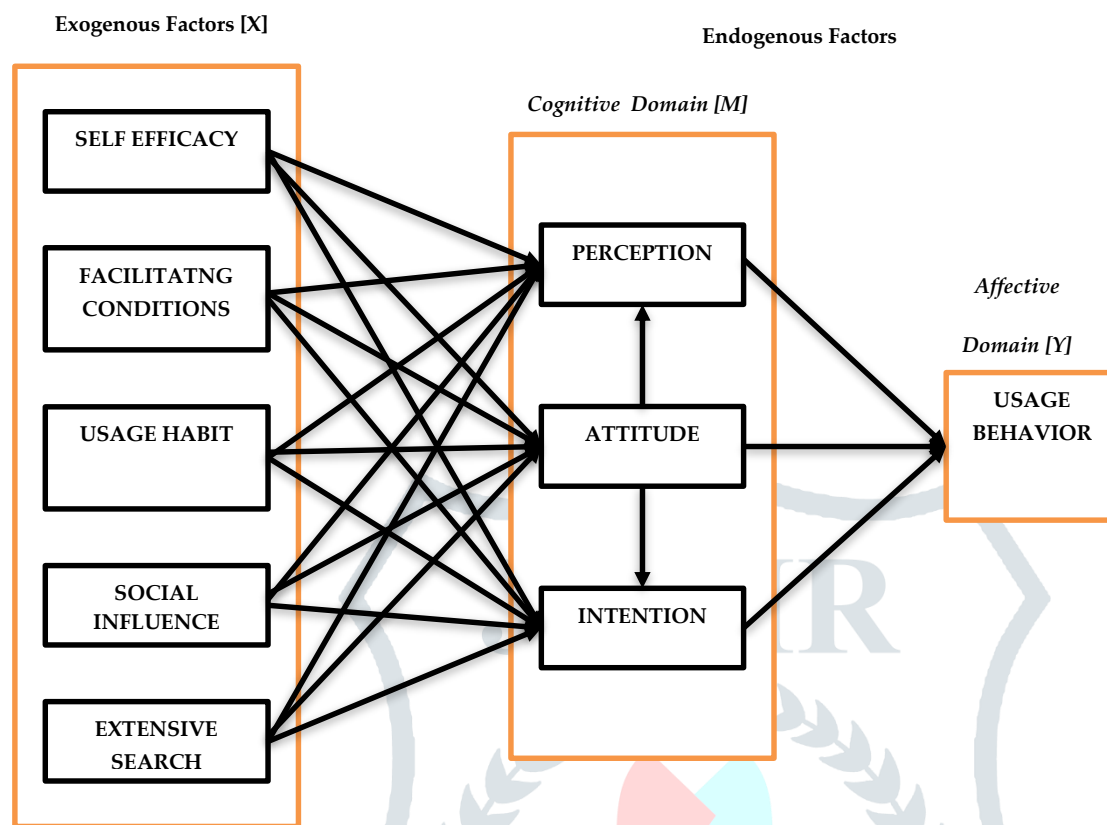
Exogenous Factors [X]

Endogenous Factors

Cognitive Domain [M]

SELF EFFICACY

FACILITATNG CONDITIONS

USAGE HABIT

SOCIAL INFLUENCE

EXTENSIVE SEARCH

PERCEPTION

ATTITUDE

INTENTION

Affective

Domain [Y]

USAGE BEHAVIOR

Fig.1 Proposed Model Framework

5.1 DATA ANALYSES AND INTERPRETATIONS

As per the above methodologies, key statistical tools like reliability test, factor analysis and Structural Equation Modelling were applied to generate the required results.

Table 2. Descriptive Statistics						Table 3. Correlation				
	Range	Sum	Mean	Std. Deviation	Variance	Correlation			Estimate	Result
SE	1.60	202.00	4.04	0.51	0.26	SE	<-->	FC	0.97	Positive
FC	2.00	200.50	4.01	0.56	0.31	SE	<-->	AH	0.99	Positive
AH	1.60	202.00	4.04	0.52	0.27	SE	<-->	JS	0.98	Positive
JS	1.60	202.00	4.04	0.51	0.26	SE	<-->	SI	0.97	Positive
SI	2.00	202.10	4.04	0.52	0.27	FC	<-->	AH	0.97	Positive
AP	2.00	200.75	4.02	0.52	0.27	FC	<-->	JS	0.96	Positive
AA	2.00	202.25	4.05	0.52	0.27	FC	<-->	SI	0.96	Positive
AI	1.60	201.80	4.04	0.51	0.26	AH	<-->	JS	0.99	Positive
UB	1.60	201.20	4.02	0.52	0.27	AH	<-->	SI	0.97	Positive

JS	<-->	SI	0.98	Positive

Table 4. Regression Weights

Regression Weights			P	Significance	Regression Weights			P	Significance
AP	<---	SE	0.09	NS	AP	<---	SI	0.44	NS
AI	<---	SE	0.08	NS	AA	<---	SI	0.35	NS
AA	<---	SE	0.26	NS	AI	<---	SI	0.05	S@5%
AP	<---	FC	0.16	NS	UB	<---	SE	0.86	NS
AA	<---	FC	0.36	NS	UB	<---	FC	0.21	NS
AI	<---	FC	0.69	NS	UB	<---	JS	0.09	S@10%
AP	<---	AH	0.40	NS	UB	<---	AP	0.00	S@1%
AA	<---	AH	***	S	UB	<---	AI	***	S
AI	<---	AH	***	S	UB	<---	AH	0.01	S@5%
AP	<---	JS	0.14	NS	UB	<---	SI	0.01	S@5%
AA	<---	JS	0.40	NS	UB	<---	AA	0.09	S@10%
`AI	<---	JS	0.14	NS					

Fig.2 Structural Equation Model

Table 5. Model Fit

AR	CMIN	DF	P	CMIN/DF	RMR	GFI	AGFI	PGFI	NFI Delta 1	RFI rho 1	CFI	RMSEA
42.00	11.83	3.00	0.01	3.94	0.00	0.95	0.21	0.06	0.99	0.90	0.99	0.25

6.1 KEY RESULTS

The index values in Table 5 assumes the model is fit. Table 3 assumes there is perfect relationship among the Exogenous Factors. Table 4 infers that among the Exogenous Factors, three factors (App Habit**, Social Influence** and Extensive Search*) directly influence the Usage Behavior. In addition, two factors, App Habit (through App Attitude*** and App Intention***) and Social Influence (through App Intention**) indirectly influence the Usage Behavior. Among the Cognitive Domain, All the three dimensions (App Perception***, App Attitude* and App Intention***) influence the Usage Behavior.

6.2 DISCUSSIONS

The practice of talent attraction has seen a huge change in recent years and has affected nearly every aspect of the HR industry. From junior or low-skilled applicants to top level executives, the internet provides access to active job seekers and is set, over the next few years, to create opportunities to find and contact the recruiter's passive candidates(Swain & Newell-brown, n.d.). While each of the above models offers significant explanatory power, a model that integrates constructs from the select models may offer a significant improvement over a single model alone, resulting in extension of TAM to include other needed constructs (Dishaw & Strong, 1999).

6.3 LIMITATIONS

The proposed model has been framed based on the limited literature review made available online. The research review was limited to only those job seekers who possess Smartphone with 3G/4G internet connectivity.

6.4 FUTURE SCOPE

An extensive research is required to improve the above model. In addition, hypotheses should be framed to find the relationship between and within constructs.

6.5 CONCLUSION

This paper provides a new outline for the evaluation of smartphone recruitment application. The model has been framed to overcome the gap in the pre-existing conventional model like, TAM, TAM2, TAM3, UTAUT, UTAUT2. While most of these models focus on "customers" as end users, the researcher has framed this model focusing "job seekers" as end users. The findings suggest that the degree of Career App Usage by the Job Seeking Adults is highly influenced by the App Usage Habit, Social Influence and Extensive(Active) Job Search.

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