

Job insecure Due to AI: Work Engagement and Roles of Person-Job Fitness, Person-Supervisor Fitness, and Person-Organization Fitness

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Abstract--- *The development of Information Technology and the shift to the Fourth Industrial Revolution has brought rapid changes to enterprises and workers. This rapid change has caused uncertainty and instability in the work environment. As a result, people are faced with the challenge of adapting to rapid changes and creating new values. This research focuses on the development of information technology and the shift to the fourth industrial revolution and the need to reduce the negative effects that will arise from the increase of other uncertainties and instabilities and of these factors. This paper explains the role of person-job fitness, person-supervisor fitness, and person-organization fitness as a way to increase the work engagement of workers in a changing environment. As these diverse adaptations increase, workers will experience less instability and uncertainty even though the environment changes. This effect will improve enthusiasm for business. Thus, by increasing the diversity of workers' adaptability, workers will be able to work better in the rapidly changing fourth industrial revolution era*

Keywords--- *Job insecurity, Work engagement, Person-job fitness, Person-supervisor fitness, Person-organization fitness.*

I. INTRODUCTION

Today our society is rapidly changing to the Fourth Industrial Revolution (FIR). The most frequent studies associated with the FIR involve concepts such as Artificial Intelligence (AI), Big Data, Cloud Computing, 3D Printers, and the Internet of Things (IoT) [French, J. R., Caplan, R. D., & Van Harrison, R. 1982]. These new technologies will have a variety of effects on human life and work. Therefore, people should try to adapt to changes and make high achievements [Warr, P., & Inceoglu, I. 2012] [Locke, E. A. 1970]. However, new technologies do not always have a positive effect on humans. For instance, with AI, people expect improvement in the quality of life, but at the same time, they worry that this technology will replace manpower in workspaces [Locke, E. A. 1970]. Hence, workers may feel insecure in a job by thinking that AI can replace them or that they would lose jobs because of it. Feeling insecure in a job because of AI thus prevents workers from adapting to the FIR. Furthermore, feeling insecure in a job because of AI can also worsen workers' current performance. Since when workers become aware of job insecurity, their current motivation can be reduced. This study explains the negative effect of feeling insecure in a job because of AI on current job satisfaction. Some workers will notice instability in their jobs because of AI, which may lead to dissatisfaction or anxiety in their current jobs. Furthermore, this study demonstrates the roles of different dimensions of person-environment fit (person-job fit, person-organization fit, and person-supervisor fit) as a way to reduce feeling insecure in a job because of AI.

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Received: / Revised: / Accepted: International Journal of Psychosocial Rehabilitation, Vol. 23, Issue 01, 2019 ISSN: 1475-7192

It is expected that feeling insecure in a job because of AI will have a negative effect on current satisfaction and future adaptation. Thus, workers and companies need to try to reduce feelings of insecurity in a job because of AI. Humans will not be able to give up or exclude the technology of AI, which represents the FIR; so this study focuses on reducing job instability itself. Since job instability occurs in adapting to the new environment, such as the FIR, this paper emphasizes the effect of the person-environment fit. Person-job fit, person-organization fit, and person-supervisor fit are components of the person-environment fit. If an individual perceives various advantages of the environment, the satisfaction with the current job will increase, and the anxiety caused by the change of environment will be less recognized. Therefore, workers with high person-job fit, person-organization fit, and person-supervisor fit will not lose their jobs or their confidence in their jobs despite the threat of AI in the FIR.

This paper seeks to explain what negative effects may arise in the coming FIR era and how to reduce these effects. In particular, feeling insecure in a job because of AI is a representative negative factor that arises from the change to the FIR era. This study emphasizes the importance of the person-environment fit as a way to reduce feeling insecure in a job because of AI. When employees have person-job fit, person-organization fit, and person-supervisor fit, their anxiety about the future will diminish, and they will have more positive expectations about the future. This process will enable them to make the necessary preparations for future changes, to better adapt to the future, and to improve their current performance and job satisfaction.

II. LITERATURE REVIEW

A. Personal-environment fit

Person-job fit, person-supervisor, and person-organization fit are the sub-dimensions of personal-environment fit. Congruence means that there is great agreement between two objects (French, Caplan & Van Harrison, 1982; Warr & Inceoglu, 2012). Person-environment fit is defined as congruence, match, similarity, and correspondence between the person and the environment (Edwards & Shipp, 2007). Person-environment fit is defined as the compatibility between an individual and a job that occurs when a person's characteristics and job characteristics coincide (Kristof-Brown, 2005).

Personal-job fit

Person-job fit refers to the degree to which an individual's ability or characteristics are in line with job requirements or fit (Edward, 1991). Person-job fit also refers to the degree to which the requirements that arise when

a person performs a job are similar to that of the organization (Kristof, 1996).

Personal-supervisor fit

Person-supervisor fit refers to a similar degree of character, such as attitude, personality, and values, between an person and a supervisor (Kristof–Brwon, 2005). Person-supervisor fit refers to the degree to which the values of subordinates and superiors are similar (Wexley, Alexander, Greenawalt, & Couch, 1980).

Person-organization fit

Person-organization Fit refers to the degree to which an individual's values and goals, personality and mood are similar to those of the organization (Kristof, 1996). Person-organization fit refers to the correspondence between organizational characteristics, such as culture, climate, values, goals, and norms, and personal characteristics (Bretz & Judge, 1994).

B. The relationship between person-environmental fit and job satisfaction

Relevance is related to concepts such as better work outcomes, improved performance, motivation, and pleasure. From a hedonistic point of view, a good supply-value suitability gives an individual a better feeling for the environment and increases satisfaction (French, Caplan & Van Harrison, 1982; Locke, 1970; Warr & Inceoglu, 2012).

C. The relationship between person-job fit and job satisfaction

If person-job fit is high, workers will have a positive feeling for their jobs and will be more satisfied with them. In general, consensus improves human satisfaction (Su, Murdock & Rounds, 2015). This relationship means that individual satisfaction with a job can be improved if the values sought and the characteristics of the job match. In contrast, for a low personal-job fit, workers experience negative conditions such as boredom, anxiety, depression, irritation, physical complaints, and dissatisfactiona (Warr, & Inceoglu, 2012). Also, from a motivational point of view, workers will want to do more when they feel a lack of work, but in contrast, they have a high level of enthusiasm for their jobs (Maslach & Leiter, 2008; Warr & Inceoglu, 2012). Thus, a good person-job fit will make workers aware of unity, improving their motivation, performance, and job satisfaction, while a poor fit will reduce satisfaction. Based on this theoretical relevance, the following hypothesis was established.

Hypothesis 1: person-job fit will have a positive effect on job satisfaction.

D. The relationship between person-supervisor fit and job satisfaction

Awareness of person-supervisor fit refers to the fit between members and supervisors' characteristics, which is an important factor for members (Van Vianen, Shen, & Chuang, 2011). Good relationships with supervisors can be provided with supervisors' support and cooperation with managers, which promote job commitment and experience of the workplace as attractive (Bartlett, 2000; Malik, Ali, Ghafoor, & Danish, 2011). In addition, recognizing that members' own values and managers' values coincide can lead to job satisfaction and satisfaction with the work environment (Wexley, Alexander, Greenawalt, & Couch, 1980; Van Vianen, Shen, & Chuang, 2011). Thus, job satisfaction increases when you work with someone who has similar values as your boss or who has similar preferences (Meglino, Ravlin, & Adkins, 1992). Therefore, if workers are aware of their superiority with their supervisors, they will form good relationships with their supervisors, will cooperate with their supervisors, and will be satisfied with their environment and their jobs. Therefore, the following hypothesis is set.

Hypothesis 2: person-supervisor fit will have a positive effect on job satisfaction.

E. The relationship between person-organization fit and job satisfaction

Members with a high degree of person-organization fit may feel that their personal values and characteristics are similar to those of the organization to which they belong. Thus, this fit strengthens the sense of belonging and allows members to feel „at home“ in the organization (Han, Chiang, McConville, & Chiang, 2015). When members perceive that their personal and organizational characteristics work, they tend to work better and feel more satisfied, while reducing stress (Pervin, 1968). In this regard, when members perceive that they share similar values (faithfulness, help, knowledge sharing, etc.) with their organizations, they are immersed in the organization and bring positive changes that lead to job satisfaction (Judge & Bretz, 1992). Organizational fitness, based on these theories, will eventually increase the sense of belonging and unity of the organization, reducing stress and causing job satisfaction. Therefore, the following hypothesis is set.

Hypothesis 3: Person-organization fit will have a positive effect on job satisfaction.

F. Mediating effects of job instability on the relationship between person-environment fit and job satisfaction

Conformity can give a sense of comfort to an organization (O'Reilly, 1989). Therefore, when members perceive a good person-environment fit, they can feel comfortable, which in turn is expected to reduce instability. Feeling

insecure in a job is negatively associated with job performance. Recognition of job instability can lower motivation, which in turn can reduce job satisfaction and organizational commitment(Zheng, Diaz, Tang, & Tang, 2014).

G. Mediating effects of job instability on the relationship between person-supervisor fit and job satisfaction

A good person-supervisor fit can help maintain a smooth relationship with the supervisor and reduce conflict. A supervisor is an important person who manages members and who can influence the anxiety they feel. Inconsistency between the individual's values and the supervisors values will increase job instability. Members who are highly aware of person-supervisor fit can reduce the level of job insecurity, which in turn can lead to job satisfaction.

Therefore, the following hypothesis is set.

Hypothesis 4: Job instability will mediate the relationship between person-supervisor fit and job satisfaction.

H. Mediating effects of job instability on the relationship between person-organization fit and job satisfaction

Person-organization fit is highly related to job instability. An organization is an environment to which an individual belongs, and the environment can have a big effect on an individual. One of these effects is instability. Thus, the higher the correspondence between individuals and organizations, the less likely instability will be. Members who are highly aware of person-organization fit can feel more secure about their jobs, which in turn can lead to job satisfaction.

Therefore, the following hypothesis is set.

Hypothesis 5: Job instability will mediate the relationship between person-organization fit and job satisfaction.

III. DATA COLLECTION

Data were collected from 150 workers who worked at IT companies. In terms of age, 36 were in their twenties (24%), 38 in their thirties (25.3%), 42 in their forties (28%), and 34 were older than fifty (22.7%). The number of careers was 58 (38.7%), 51 (34%) and 41 (27.3%), respectively. The distribution of age was 36 (24%) in the 20s, 38 (25.3%) in the 30s, 42 (28%) in the 40s and 34 (22.7%) in the 50s and over.

Table 1. Demographic Information of Participants

Content	Division	Frequency	%	Content	Division	Frequency	%
GENDER	MALE	75	50	AGE	20	36	24
	FEMALE	75	50		30	38	25.3
Career		58	38.7		40	42	28
		51	34				

		41	27.3		OVER 50	34	22.7
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Received: 10 Nov 2018 | Revised: 20 Dec 2018 | Accepted: 02 Jan 2019

15

IV. DATA ANALYSIS

Exploratory Factor Analysis and Reliability Analysis

KMO = .838	Question	Ingredient					Cronbach's α
		1	2	3	4	5	
POF	POF1	.171	.189	.801	.174	.054	.838
	POF2	.377	.125	.623	.305	.045	
	POF3	.231	.181	.844	.165	.037	
PJF	PJF1	.066	.838	.114	.080	.014	.842
	PJF2	.088	.776	.039	.206	-.067	
	PJF3	.045	.777	.112	.056	.019	
	PJF4	.194	.568	.363	.294	.081	
	PJF5	.128	.728	.144	.237	.082	
PSF	PSF1	.800	.156	.024	.217	.100	.867
	PSF2	.756	.029	.076	.319	-.023	
	PSF3	.749	.132	.254	.106	.108	
	PSF4	.735	.070	.204	.144	.105	
	PSF5	.732	.085	.363	.075	.154	
JS	JS1	.404	.351	.021	.654	.110	.869
	JS2	.233	.194	.272	.761	.109	
	JS3	.249	.298	.382	.604	.198	
	JS4	.243	.245	.274	.713	.209	
AI	AI1	.168	.034	-.021	.116	.746	.783
	AI2	.083	.003	.008	.172	.831	
	AI3	.032	.016	.159	.025	.873	
Eigenvalue		3.518	3.210	2.488	2.456	2.198	
% Dispersion		17.589	16.049	12.439	12.279	10.991	
Accumulate %		17.589	33.638	46.077	58.357	69.348	

An exploratory factor analysis was conducted to verify the validity. Principal component analysis was used to extract the constituent factors, and an orthogonal method, Varimax, was adopted to simplify factor loading. The criteria for selection of factors and items were based on Eigenvalues of 1.0 or more and a factor loading of 0.4 or more. All of the above parameters were adopted through the process of scaling. The total variance explained was 77.7%. The KMO value was 0.916, and the probability of Bartlett's spherical test was .000, which is suitable for factor analysis.

The descriptive statistics, and correlation analysis

	Mean	S.D	Gender	Age	Career	POF	PJF	PSF	AI	JS
Gender	1.500	.502	-							
Age	2.493	1.091	.000	-						
Career	1.887	.807	-.075	.574**	-					
POF	4.462	1.281	-.017	.165*	.075	-				
PJF	4.999	.951	-.114	.315**	.269**	.445**	-			
PSF	4.235	1.209	-.084	.095	.041	.546**	.333**	-		

AI	4.187	1.283	.031	-.125	-.081	.189*	.108	.250**	-
JS	4.652	1.183	-.081	.121	.071	.593**	.580**	.608**	.331**

***: $p < .001$, **: $p < .01$, *: $p < .05$

PJF = Person-job fit; POF = Person-organization fit; PSF = Person-supervisor fit; and JS = Job satisfaction all have a positive relationship, and AI has a negative correlation with other variables at a significant level.

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Mediation effect analysis

Table 2: The result of mediating effect of job instability

Dependent: Job satisfaction							
	Variable name	step 1			step 2		
		β	t	sig	β	t	sig
Control variable	Age	.012	.147	.883	.049	.619	.537
	Career	.020	.243	.808	.021	.274	.785
Independent	POF	.589	8.719	.000	.538	8.088	.000
Mediating	AI	-			.237	3.592	.000
R2(Adj-R2)		.352(.339)			.405(.389)		
$\Delta R2(Adj-R2)$		-			.053(.050)		
F		26.440***			24.673***		

***: $p < .001$, **: $p < .01$, *: $p < .05$

Table 2 displays the mediating effect of feeling insecure in a job on the relationship between POF and job satisfaction. Step 1 shows that POF had a positive influence on job satisfaction. Thus, H1 was accepted. Step 2 shows that feeling insecure in a job because of AI had a negative influence on job satisfaction. Thus, H2 was accepted.

Mediation effect analysis

Table 3: The result of the mediating effect of job instability

Dependent: Job satisfaction		
Variable	step 1	step 2

		β	t	sig	β	t	sig
Control variable	Age	-.026	-.310	.757	.016	.202	.840
	Career	-.078	-.949	.344	-.069	-.878	.381
Independent	PJF	.609	8.575	.000	.565	8.264	.000
Mediating	AI	-			.267	4.109	.000
R2(Adj-R2)		.345(.331)			.413(.397)		
Δ R2(Adj-R2)		-			.068(.066)		
F		25.598***			25.510***		

***: $p < .001$, **: $p < .01$, *: $p < .05$

Table 3 displays the mediating effect of feeling insecure in a job on the relationship between PJF and job satisfaction. Step 1 shows that PJF had a positive influence on job satisfaction. Thus, H1 was accepted. Step 2 shows that feeling insecure in a job because of AI had a negative influence on job satisfaction. Thus, H2 was accepted. Mediation effect analysis

Table 4: The result of the mediating effect of job instability

Dependent: Job satisfaction							
Variable		step 1			step 2		
		β	t	sig	β	t	sig
Control variable	Age	.056	.696	.487	.086	1.094	.276
	Career	.014	.174	.862	.016	.201	.841
Independent	PSF	.602	9.141	.000	.547	8.250	.000
Mediating	AI	-			.207	3.105	.002
R2(Adj-R2)		.373(.360)			.412(.396)		
Δ R2(Adj-R2)		-			.039(.036)		
F		28.988***			25.439***		

***: $p < .001$, **: $p < .01$, *: $p < .05$

Table 4 displays the mediating effect of feeling insecure in a job on the relationship between PSF and job satisfaction. Step 1 shows that PSF had a positive influence on job satisfaction. Thus, H1 was accepted. Step 2 shows that feeling insecure in a job because of AI had a negative influence on job satisfaction. Thus, H2 was accepted.

VI. STUDY RESULTS, SUMMARY AND CONTRIBUTION

All hypotheses in this study were supported. The implications of these results are as follows. First, it has been proven that feeling insecure in a job because of AI has a negative effect on job satisfaction. In the transition to the FIR era, some workers may feel anxious about the future, stressed, and dissatisfied with their current job because of feeling insecure in a job because of AI. Therefore, companies should recognize the existence of negative factors, such as job insecurity, because of AI and support workers to have more positive expectations for the future.

Second, it was found that person-job fit has a positive effect on the job satisfaction of workers by reducing feeling insecure in a job because of AI. If workers are aware of their suitability and are satisfied with their jobs, they will feel less anxious about the future. Therefore, it is necessary to reduce feeling insecure in a job because of AI and improve

job performance by means of efforts such as job design suitable for workers and job crafting for the FIR era.

Third, it was proved that person-supervisor fit also improved job satisfaction by positively reducing feeling insecure in a job caused by AI problem solving. Relationships with superiors will be closely related to workers' motivation, employment security, and job satisfaction. Thus, leaders need to demonstrate new leadership in the FIR era. Leaders drive organizations. In the transition to the FIR era, leaders will need to be more active in motivating their members and trying to address negative perceptions about feeling insecure in a job because of AI. Leaders will also need to promote new change, provide vision, and support workers to adapt to changes.

Fourth, the person-organization fit, like the other fits, has been shown to improve job satisfaction and reduce feeling insecure in a job about AI. If members are satisfied with the organization and have a positive attitude toward it, the anxiety about leaving the organization, such as feeling insecure in a job because of AI, will be reduced. Hence, companies will need to select the right people for the organization at the hiring stage. In addition, support should be given to the members of the organization to ensure that they have a positive attitude toward the organization.

This study emphasizes the importance of person-environment fit as a way to reduce feeling insecure in a job because of AI. Through various efforts by companies and leaders, workers will have less anxiety about the future. Furthermore, workers will have more positive expectations about the transition to the FIR era, and will be better prepared and adapted for the future. In addition, positive expectations for the future will improve performance both now and in the future.

The limitations of this study and suggestions for future research are as follows.

First, person-environmental fit includes elements other than job, supervisor, and organization. Thus, it is necessary to test the influence of the person with other fits. In addition, research should be conducted to find out which variables of each fit have a significant effect on job satisfaction and feeling insecure in a job because of AI.

Second, in addition to job satisfaction used in this study, it is necessary to verify various negative effects of feeling insecure in a job because of AI. For example, if job satisfaction is a current outcome, studies on future outcomes, such as expectations, should continue.

In general, feeling insecure in a job because of AI has a negative effect on workers. In future research, it is necessary to verify the influence of feeling insecure in a job because of AI in various situations and to deeply investigate the cause of feeling insecure in a job because of AI. For instance, studies should be conducted on types of workers who are more aware of feeling insecure in a job because of AI, or situations where they can do good work even if they feel insecure because of AI.

Received: | Revised: | Accepted:

18

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