

## ORIGINAL ARTICLE

# THE EFFECT OF EMPLOYABILITY ON INTER-ORGANIZATIONAL MOBILITY BY WOMEN TECHNOLOGIST: MEDIATION BY PSYCHOLOGICAL WELL-BEING

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## ABSTRACT

Today's phenomenon shown that female graduates began to dominate the technical division in local industries in the country. However, inter-organizational mobility often occurs among the technical women that lead to the loss of valuable human resources to the organization and thereby create a product safety confidentiality issue. In this regard, this study was conducted to identify factors affecting the mobility of industry among graduates of female engineering technology. Based on the previous study, the proportion of female graduates aged 23 to 30 who made inter-organizational mobility was higher than men. Therefore, based on the boundaryless career theory, this study was conducted to examine the relationship between employability, psychological well-being and inter-organizational mobility among 114 women's engineering technology graduates who are working in the industry in Malaysia. A model has been developed and tested using SEM techniques using SmartPLS software. The findings show that there is a negative relationship between employability and inter-organizational mobility, as well as psychological well-being toward inter-organizational mobility. Employer and higher learning institutions should cooperate with each other in term of policies and regulations development as well as engineering technology curriculum. Besides that, employers should provide adequate training to women's engineering technology graduates who are new to their workplace so that they can increase employability skill in their new workplace.

**Keywords:** *Employability, Psychological well-being, Interorganizational mobility, Engineering technology.*

## INTRODUCTION

Women in Malaysia comprise almost half of Malaysia's population. Statistics revealed that the total population in Malaysia in 2017 was 31.6 million and 15.3 million were women (Jabatan Perangkaan Malaysia, 2017). The involvement and support of women in engineering and technology began before Malaysia gained independence from Britain in 1957. Women have made tremendous progress in education and workplace over 50 years ago, especially in the male-dominated job (Yadav, 2016). The number of female graduates in various fields at higher education institutions is increasing every year including in the engineering field. Similarly, the involvement of women in the technical and vocational education and training (TVET) is increasing every year when many female students choose to pursue education in engineering technology at polytechnics, public and private universities. As a result, the number of female engineering graduates entering the labour force has grown rapidly in recent years. The number of female employees working in the professional sector was 335.4 thousand and only slightly different from men (Md Taib, 2016). Based on Department of Statistics, Malaysia in

2017, the most common age group of women is from 20 to 29 years old (Jabatan Perangkaan Malaysia, 2017).

However, based on data from the Ministry of Human Resources in 2011, the manufacturing sector in Malaysia was the highest sector of employment turnover crisis from 2008 to 2010. Similarly, according to articles published in the New York Times by 2015, the number of women in technology in Apple is only 20% while Google is only 17% (Yadav, 2016). From this phenomenon, it shows that almost half of potential women in engineering and technical fields are missing or in other words 'missing from action'. Overseas surveys on women who quit from their organization also show that women workers quit from their organization higher in technology than other fields (Ashcraft, 2016). In Malaysia, employees turnover rate increased from 12.3% in 2012 to 13.2% in 2013, and was seen mostly in the manufacturing about 24%, conglomerates about 14% and financial services industries as much as 13.3% (Seah, 2013). Inter-organizational mobility by employees is an important factor to determine organizational performance because training and developing human resources in the organization are difficult and costly (Cappelli, 2000). These two main issues will be faced by organization due to inter-organizational mobility

phenomenon, namely technological knowledge spillovers, and relationship disadvantages (Mawdsley & Somaya, 2016).

Most of the previous studies on inter-organizational mobility focus more on objective career success where inter-organizational mobility occurs due to objective career success such as salary and promotion (Igbaria, 1997; Samuel & Ramayah, 2016). However, this study focuses on psychological success based on gender. There are very limited studies in term of subjective career success, especially on psychological well-being. Therefore, one of the constructs to predict inter-organizational mobility in this study is psychological well-being. There are two objectives in the study regarding these problems which are:

Objective 1: Determine the relationship between the factors influences inter-organizational mobility among female engineering technology graduate in Malaysian industry.

Objective 2: Determine how psychological well-being may be relevant towards inter-organizational mobility.

Objective 3: Determine the most significant contributing factors to inter-organizational mobility among female engineering technology graduate in Malaysian industry.

#### **THE CONCEPT OF EMPLOYABILITY AND PSYCHOLOGICAL WELL-BEING FOR SUBJECTIVE CAREER SUCCESS**

Career mobility has been used by many researchers in various interpretations such as changing jobs, changing organizations and changing occupations (Feldman & Ng, 2007). Inter-organizational mobility (MOB) has been used to explain the attitudes of physical movement from current jobs and organization to new jobs and organizations (Volmer & Spurk, 2011). A person with high inter-organizational mobility chooses to work in different organizations.

Employability (EMP) is an individual's ability to expand and succeed in her career through her skills (Fugate, Kinicki, & Ashforth, 2004). Employability is not merely the ability to get a job but can maintain work throughout her career (Watts, 2006). Employability is defined as the ability of a person to gain employment and maintain their job in a formal organization (Hillage & Pollard, 1998). An individual's employability depends on the individual's knowledge, skills and attitudes on how they use the assets to be shown to employers.

Psychological well-being (PWB) is defined as the overall effectiveness of individual psychological

functions (Berkman, 1971). According to Arnold et al. (Arnold, Turner, Barling, Kelloway, & McKee, 2007), psychological well-being is defined as a combination of good feelings and works effectively. It is characterized by self-esteem with the ability to enjoy life, and happy with family, learning, interpersonal relationships, and achievement (Aronson, Wilson, & Akert, 1997). Psychological well-being can be defined as an individual's ability to deal with stress, avoid conflicts, increase calmness, stimulate motivation and increase self-esteem in life.

A study on the relationship between employability, career mobility and work-life balance has been done on 152 MBA graduates in Malaysia and as a result, there has been an increasingly strong relationship between employability and career mobility when work-life balance is higher, while low work-life balance does not affect the relationship between employability and career mobility (Samuel & Ramayah, 2016). Similarly, with the findings by Nelissen, higher employability will result in job turnover (Nelissen, Forrier, & Verbruggen, 2017). There is also a study that shows that there is a negative relationship between employability and inter-organizational mobility for employees who have a short tenure (Acikgoz, Sumer, & Sumer, 2016). The core finding in this study was there was no direct effect between employability and inter-organizational mobility and its depend on job resources such as physical, psychological, social, or organizational aspects of the job (De Cuyper, Mauno, Kinnunen, & Mäkikangas, 2011).

A study by Wright & Bonett on job satisfaction and psychological well-being toward voluntary turnover found that job satisfaction influencing voluntary turnover when psychological well-being was high. The study conducted by Cuyper to identify the relationship between employability and job insecurity toward psychological well-being found that employability has a positive relationship with psychological well-being (Cuyper, Bernhard-Oettel, Berntson, Witte, & Alarco, 2008). Employees with higher psychological well-being can reduce absenteeism, turnover and physical illness which give a direct impact on the performances of employees (Usman, 2017). However, very limited empirical research was done on the effect of psychological well-being toward inter-organizational mobility.

#### *Hypothesis Development*

Studies conducted by Samuel and Ramayah (Samuel & Ramayah, 2016) against MBA graduates who are working shows that there is a positive relationship between employability and inter-organizational mobility. However, this

phenomenon is different for the new women graduates. Based on the study conducted by Cuyper shows that employability has a relationship with inter-organizational mobility but depend on job resources (Cuyper et al., 2008; De Cuyper et al., 2011). Studied conducted by Wright and Bonett (Wright & Bonett, 2007) also was considered in developing the hypothesis. Based on boundaryless career theory and literature review as before, then the researcher proposes 3 hypotheses to be tested in this study:

- Hypothesis 1: Psychological well-being has a negative relationship with inter-organizational mobility.
- Hypothesis 2: Employability has a negative relationship with inter-organizational mobility.
- Hypothesis 2: Employability has a positive relationship with psychological well-being.
- Hypothesis 4: Employability influence psychological well-being which, in turn, influences inter-organizational mobility.

**Research Framework**

Based on hypotheses above, research framework was proposed as

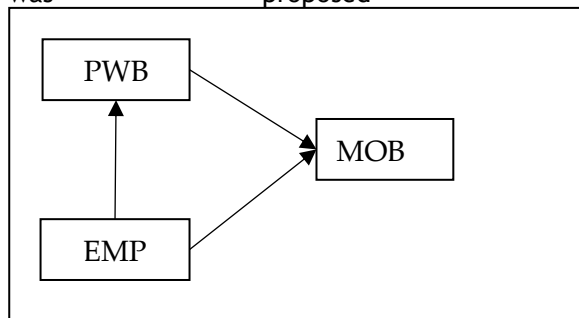


Figure 1 below.

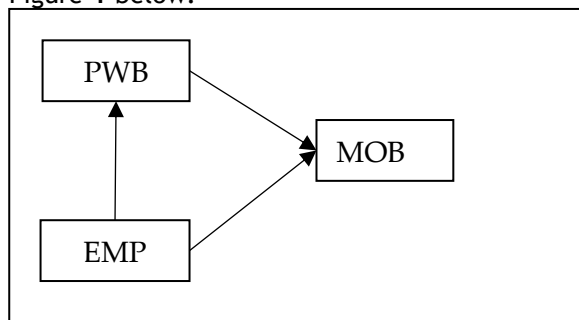


Figure 1 Research Framework

**METHODOLOGY**

**Research Design**

The survey method was used in the study by using questionnaires for employability (Rothwell & Arnold, 2007), psychological well-being (Berkman, 1971) and organizational mobility (Briscoe, Hall, & DeMuth, 2006).

**Population**

The population chosen for this study are the working women who are graduated in engineering technology from public universities of Malaysia under MTUN (Technical Universities). They are from various disciplines such as civil, building services, mechanical, electric & electronic, and construction.

**Sample**

The sample for this study consists of female engineering technology graduates with 1 to 10 years of working experience in various types of industry in Malaysia, mostly from electrical & electronic industries. The sample was selected by using purposive sampling based on preliminary data collected from the Malaysian Technical University Network (MTUN) alumni. Based on preliminary data, the researcher wrote to human resources management via mail to get approval to conduct the research. Upon approval from human resources management, the questionnaire was sent to respondents via email. A total of 114 female engineering technology graduates with a working experience at least 1 year have been identified as survey respondents. Data were stored in SPSS software for analysis. Respondent demographics profile in the study is figured in Table 1.

**Table 1 Respondent demographics profile**

Demographic Characteristics	Profile	Frequency	
			%
1 Age	21 to 25	49	42.98
	26 to 30	57	50.00
	31 to 35	8	7.02
2 Races	Malay	100	87.72
	Chinese	5	4.39
	Indian	6	5.26
	Others	3	2.63
3 Years Graduated	2016 to 2017	80	70.18
	2014 to 2015	14	12.28
	2012 to 2013	13	11.40
	2010 to 2011	7	6.14

**Instrument**

The instruments used in this study are based on established research instrument as Table 2. A back-to-back translation process was conducted by 4 language experts. A pilot study was conducted using the instrument in dual language, (English & Bahasa Melayu) to 30 female engineering technology graduates. Alpha Cronbach for pilot study is as in Table 2.

**Table 2** Research Instrument

No	Construct	Quantity of Item	Alpha Cronbach (Previous study)	Alpha Cronbach (Pilot study)
1	Inter-organizational mobility (Briscoe et al., 2006)	5	0.75	0.678
2	Psychological well-being (Berkman, 1971)	8	0.72	0.800
3	Employability (Rothwell & Arnold, 2007)	11	0.83	0.855

response received from the respondent. For this purpose, a collinearity test using SmartPLS software was conducted to determine the existence of common method bias in a developed model. Based on Table 3, there was no response bias noted in the analyses.

**Table 3** Inner VIF Values

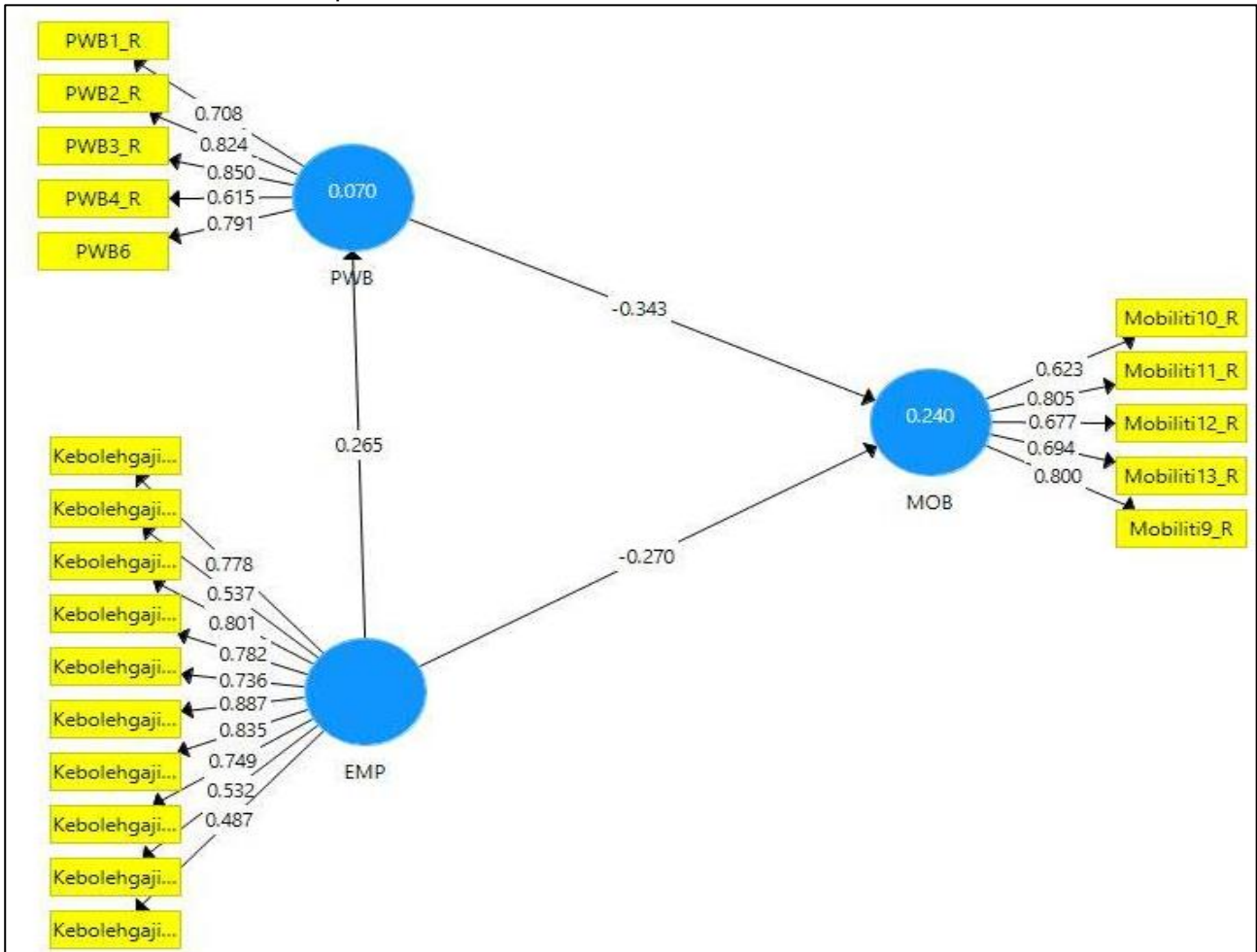
	MOB
PWB	1.076
EMP	1.076

**RESULT**

The structural equation modelling (SEM) technique using partial least squares (PLS) with SmartPLS 3.0 (Ringle, Wende, & Becker, 2015) software was used to analyses inferential statistics. First, an analysis was conducted to identify the effects of ‘common method bias’ to ensure that there is a representation of the

*Measurement Model*

The measurement model was tested to validate the instruments as Figure 2.



**Figure 2** Measurement model

Based on the measurement model, item for Kebolehgajian10, PWB5, PWB7, and PWB8 were deleted due to low loading.

**Table 4** Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
EMP	0.894	0.909	0.915	0.525
MOB	0.780	0.819	0.844	0.523
PWB	0.832	0.909	0.873	0.581

**Table 5** Fornell-Larcker Criterion for Discriminant Validity

	EMP	MOB	PWB
EMP	0.725		
MOB	-0.361	0.723	
PWB	0.265	-0.414	0.762

**Table 6** Cross Loadings

	EMP	MOB	PWB
Kebolehgajian1	0.778	-0.301	0.116
Kebolehgajian11	0.537	-0.131	0.231
Kebolehgajian2	0.801	-0.345	0.246
Kebolehgajian3	0.782	-0.292	0.197
Kebolehgajian4	0.736	-0.259	0.200
Kebolehgajian5	0.887	-0.284	0.258
Kebolehgajian6	0.835	-0.297	0.116
Kebolehgajian7	0.749	-0.265	0.148
Kebolehgajian8	0.532	-0.116	0.194
Kebolehgajian9	0.487	-0.231	0.203
Mobiliti10_R	-0.153	0.623	-0.149
Mobiliti11_R	-0.241	0.805	-0.424
Mobiliti12_R	-0.304	0.677	-0.234
Mobiliti13_R	-0.191	0.694	-0.154

Mobiliti9_R	-0.349	0.800	-0.386
PWB1_R	0.159	-0.260	0.708
PWB2_R	0.196	-0.256	0.824
PWB3_R	0.204	-0.237	0.850
PWB4_R	0.061	-0.143	0.615
PWB6	0.277	-0.488	0.791

**Table 7** Heterotrait-Monotrait Ratio (htmt)

	EMP	MOB
MOB	0.404	
PWB	0.280	0.406

*Structural Model*

Stone-Geisser’s Q2 value was measured as an indicator of the model’s predictive relevance (Geisser, 1974). In this study, the value of Q2 is above 0 which is 0.097. If the value of Q2 is larger than 0, we can conclude that the developed model has sufficient predictive relevance (Fornell & Cha, 1994). The endogenous constructs in the developed model have a moderate predictive relevance capability (Hair, Black, Babin, & Anderson, 2014). The structural model was tested to test the developed model in term of the relationships that were hypothesized as Figure 3 below.

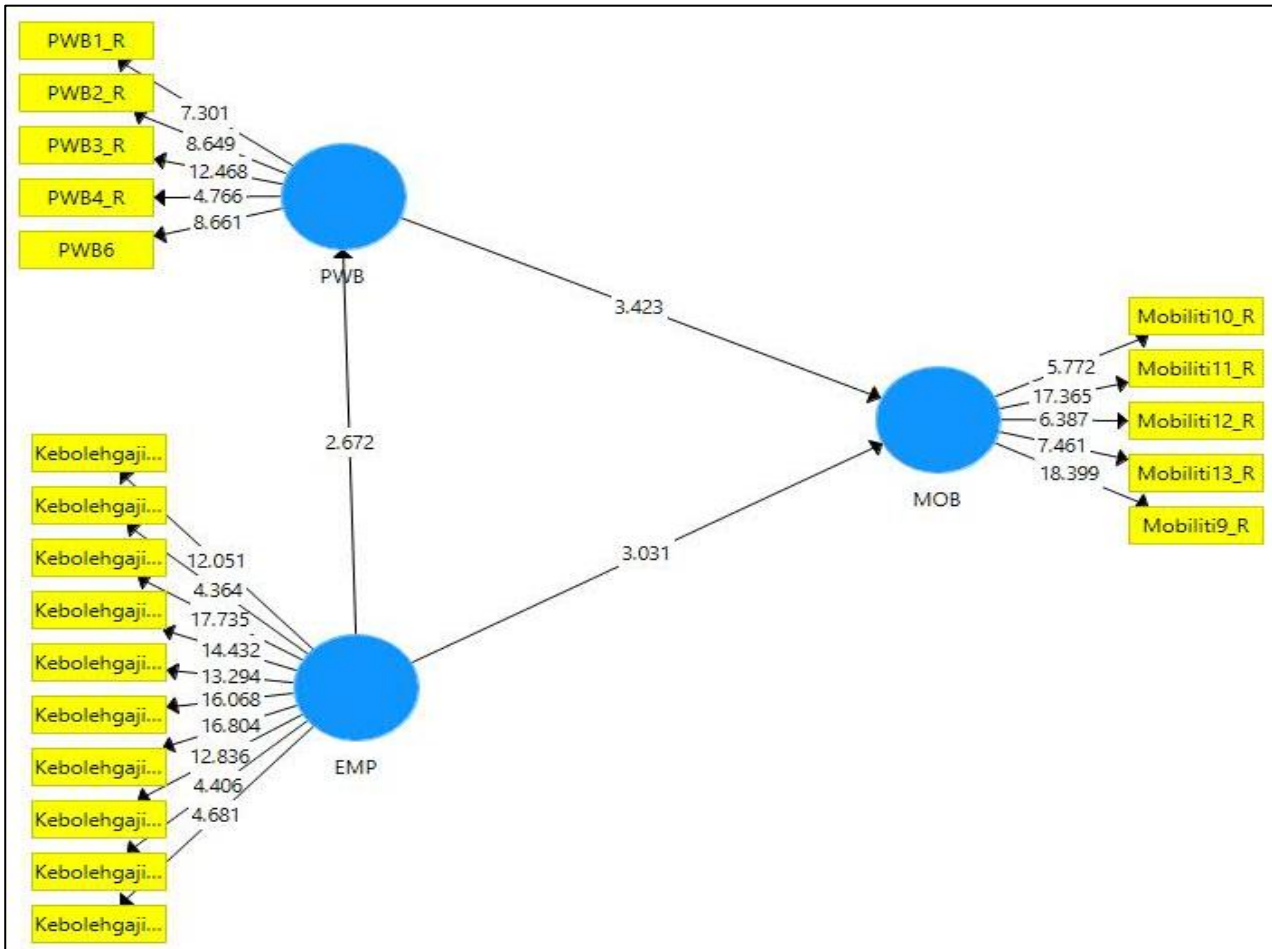


Figure 3 Structural model

Path analysis was used to test four hypotheses generated in earlier stages. The results are presented in Table 8. There was a negative relationship ( $t = 4.112, p < 0.05$ ) between psychological well-being and inter-organizational mobility. There was also a negative relationship ( $t = 3.130, p < 0.05$ )

between employability and inter-organizational mobility. There was a positive relationship ( $t = 2.807, p < 0.05$ ) between employability and psychological well-being. There was a mediator (psychological well-being) between the relationship of employability and inter-organizational mobility ( $t = 2.287, p < 0.05$ ). Thus, all hypotheses were supported.

Table 8 Hypothesis Testing

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values
PWB -> MOB	-0.343	-0.351	0.083	4.112	0.000*
EMP -> MOB	-0.270	-0.290	0.086	3.130	0.001*
EMP -> PWB	0.265	0.287	0.094	2.807	0.003*
EMP -> PWB -> MOB	-0.091	-0.099	0.040	2.287	0.011*

\* $p < 0.05$

The magnitude of R2 was used to predict the accuracy of the developed model. In this study, the value of R2 MOB is 0.240, suggesting that 24.0% of the variance in inter-organizational mobility could be explained by psychological well-being and employability.

Table 9 LV Index Values and LV Performances for IPMA

	LV Index Values (Importance)	LV Performances
PWB	5.087	67.661
EMP	5.468	62.801

As shown in Figure 4, the Importance-Performance Map Analysis (IPMA) of inter-organizational mobility reveals that psychological well-being gives a high impact on inter-organizational mobility. However, employability should be highlighted by the employer in term of suitable training, et cetera.

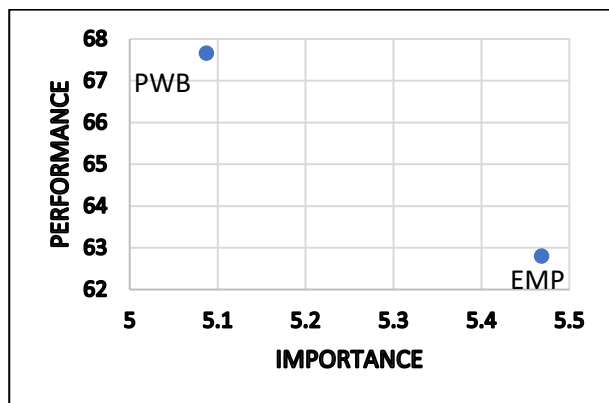


Figure 4 IPMA Representation of Inter-organizational Mobility

## DISCUSSION

Findings from this study show that there is a negative relationship between employability and inter-organizational mobility. The results show that female engineering technology graduates with higher employability are more likely to maintain their job in the current organization. This study illustrates that women prefer subjective career success rather than objective career success. The findings of this study are contrary to previous studies where employees with higher employability are more likely to get new jobs that can increase their promotion and salary [7]. This is due to gender differences in which female graduates are more likely to be a psychological success or subjective career success while male graduates are more likely to find career success in term of salary, promotion, etc.

The latest discovery in this study is psychological well-being is one of the constructs that can predict inter-organizational mobility. The researcher has not found any empirical studies on the relationship between psychological well-being and inter-organizational mobility. The findings show that female engineering technology graduates with higher psychological well-being are more likely to maintain their jobs than to those who are low psychological well-being.

The findings also show that the relationship between employability and inter-organizational mobility has partially mediated with

psychological well-being. Besides of direct relationship between employability and inter-organizational mobility, the existence of psychological well-being as mediator will increase the tendency of female engineering technology graduates to maintain in the organization. This study found that psychological well-being was an important construct and could have a significant impact on inter-organizational mobility.

The findings also show that the influence of employability and psychological well-being contributes 24% to inter-organizational mobility. Another 76% is due to other factors. The findings from the IPMA analysis show that the factor contributing to inter-organizational mobility is psychological well-being whereas the importance factor needs to be highlighted by employers is employability. Employability needs to be addressed and immediate action should be taken by the employer and higher learning institutions.

This study suggests that apart from knowledge in engineering, the higher education institutions in engineering need to consider integration of industrial-organizational psychology into engineering technology curriculum for enhancement of the capability of female engineering technology graduates in the industries. Employers are also encouraged to formulate work rules that can provide psychological well-being and provide suitable training and courses that can enhance employability among female engineering technology graduates. Employers and higher learning institutions should cooperate with each other to identify basic employability skills needed by all industries in Malaysia. Besides, employers also need to identify specific employability skills for their organization for women technologist to succeed in their workplace, especially subjective career success. Employers also should provide adequate training regarding specific employability skills to women's engineering technology graduates who are new to their workplace.

## LIMITATION OF STUDY

The findings of this study are limited to female engineering technology graduates from universities under MTUN aged between 22 to 35 who have a work experience from one year to 10 years in industry in Malaysia.

## CONCLUSION

This study proves that the construct of psychological well-being and employability can predict the intention of graduates of female engineering technology to do inter-organizational mobility in their organization. This study also

shows that psychological well-being is a mediator between the relationship of employability and inter-organizational mobility which makes this model more accurate and appropriate to describe inter-organizational mobility among female engineering technology graduates in Malaysia. The developed model can be used as a guide by the industry in predicting inter-organizational mobility among female technologists and engineers in Malaysia and facilitating the industry in making follow-up actions.

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## REFERENCES

- Acikgoz, Y., Sumer, H. C., & Sumer, N. (2016). Do employees leave just because they can? Examining the perceived employability-turnover intentions relationship. *The Journal of psychology, 150*(5), 666-683.
- Arnold, K. A., Turner, N., Barling, J., Kelloway, E. K., & McKee, M. C. (2007). Transformational leadership and psychological well-being: the mediating role of meaningful work. *Journal of occupational health psychology, 12*(3), 193.
- Aronson, E., Wilson, T., & Akert, R. (1997). Social Psychology, trad. it. "Psicologia Sociale", il Mulino, Bologna.
- Ashcraft, C., Mclain, B. & Eger, E. (2016). Women In Tech: The Facts.
- Berkman, P. L. (1971). Life stress and psychological well-being: A replication of Langner's analysis in the midtown Manhattan study. *Journal of health and social behavior, 35*-45.
- Briscoe, J. P., Hall, D. T., & DeMuth, R. L. F. (2006). Protean and boundaryless careers: An empirical exploration. *Journal of Vocational Behavior, 69*(1), 30-47.
- Cappelli, P. (2000). A market-driven approach to retaining talent. *Harvard business review, 78*(1), 103-103.
- Cuyper, N. D., Bernhard-Oettel, C., Berntson, E., Witte, H. D., & Alarco, B. (2008). Employability and employees' well-being: Mediation by job insecurity. *Applied Psychology, 57*(3), 488-509.
- De Cuyper, N., Mauno, S., Kinnunen, U., & Mäkikangas, A. (2011). The role of job resources in the relation between perceived employability and turnover intention: A prospective two-sample study. *Journal of Vocational Behavior, 78*(2), 253-263.
- Feldman, D. C., & Ng, T. W. (2007). Careers: Mobility, embeddedness, and success. *Journal of management, 33*(3), 350-377.
- Fornell, C., & Cha, J. (1994). Partial Least Squares. In: RP Bagozzi (Ed.) *Advanced Methods of Marketing Research* (pp. 52-78): Cambridge: Blackwell.
- Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior, 65*(1), 14-38.
- Geisser, S. (1974). Discussion on "Cross-validated choice and assessment of statistical predictions by Stone. *J. Roy. Statist. Soc. Ser. B, 36*(2), 141-142.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*.
- Hillage, J., & Pollard, E. (1998). Employability: developing a framework for policy analysis.
- Igbaria, M. C., Laku. (1997). The impact of gender on career success of information systems professionals: A human-capital perspective. *Information Technology & People, 10*(1), 63-86. doi:doi:10.1108/09593849710166165
- Jabatan Perangkaan Malaysia. (2017). *Anggaran Penduduk Semasa Malaysia 2017*. Retrieved from Kuala Lumpur:
- Mawdsley, J. K., & Somaya, D. (2016). Employee mobility and organizational outcomes: An integrative conceptual framework and research agenda. *Journal of management, 42*(1), 85-113.
- Md Taib, F. (2016). *Penglibatan wanita yang mengikuti Technical Vocational Education and Training (TVET) dalam industri Oil & Gas*. Universiti Tun Hussein Onn Malaysia.
- Nelissen, J., Forrier, A., & Verbruggen, M. (2017). Employee development and voluntary turnover: Testing the employability paradox. *Human Resource Management Journal, 27*(1), 152-168.



Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. *Boenningstedt: SmartPLS GmbH*, <http://www.smartpls.com>.

Rothwell, A., & Arnold, J. (2007). Self-perceived employability: development and validation of a scale. *Personnel review*, 36(1), 23-41.

Samuel, R., & Ramayah, T. (2016). Employability, Mobility and Work-Life Balance: How do they relate for MBA holders in Malaysia? *Pertanika Journal of Social Sciences & Humanities*, 24(1).

Seah, A. (2013). Salaries to rise amid higher turnover in 2014. *HumanResources*. Retrieved December, 15, 2013.

Usman, A. (2017). The effect of psychological wellbeing on employee job performance: Comparison between the employees of projectized and non-projectized organizations. *J Entrepren Organiz Manag*, 6, 206.

Volmer, J., & Spurk, D. (2011). Protean and boundaryless career attitudes: Relationships with subjective and objective career success. *Zeitschrift für ArbeitsmarktForschung*, 43(3), 207-218.

Watts, A. G. (2006). Career development learning and employability: Higher Education Academy York.

Wright, T. A., & Bonett, D. G. (2007). Job satisfaction and psychological well-being as nonadditive predictors of workplace turnover. *Journal of management*, 33(2), 141-160.

Yadav, S. (2016). Women Engineers-Past, Present and Future Scenario. *Journal of Engineering Education Transformations*.