Work-Life Balance: Family Satisfaction of TVET as Human Capital Investment in Malaysia

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Abstract - **Malaysia requires a large group of skilled workers to build, expand and eventually sustain its economic growth to become a high-income country. However, current TVET institutions in Malaysia are far from being able to supply Malaysia with sufficient skilled workers in the future. This may be due to negative perceptions of the public regarding work-life balance and well-being when choosing TVET as a career pathway. Therefore, it is important to determine if TVET jobs are inferior to conventionally educated jobs in terms of family satisfaction, which refers to perceptions of family quality such as solidarity, happiness, and overall relational well-being. In this study, surveys distributed to 160 TVET graduates and 160 conventionally educated graduates are analysed using PLS-SEM analysis and PLS-SEM multigroup analysis. SmartPLS software version 3.2.7 was used for this research. The findings show that TVET jobs are no worse than conventionally educated graduates jobs in terms of family satisfaction.**

Keywords - *Graduates, TVET, Conventionally Educated, PLS-SEM, Family Satisfaction.*

I. Introduction

Skilled workers form the backbone of any developed country, as they are necessary to build, expand, and sustain national economic growth. The past two decades have witnessed a marked increment in national initiatives focused on equipping the workforce with crucial skills, allowing them to cater to today's job market and influence national economic growth and development. Such initiatives parallel the recognition of the way market globalisation has accelerated the distribution of technology and innovation, which has resulted in the emergence of new occupations replacing obsolete ones. Soon, skill competency and demand required in an occupation will be dissimilar due to the rising knowledge content of production processes and services (OECD, 2010). Therefore, many developed countries, such as Germany and the United States of America, have established education systems that provide training to produce skilled workers (Marope, Chakroun & Holmes, 2015). This educational system is otherwise known as TVET (Technical and Vocational Education and Training).

TVET policies in developed countries are currently well-established and comprehensive in nature, which is mainly due to their long history in running such programmes. For example, Germany, Austria and Switzerland have adopted a dual education system approach where apprenticeship in a company and vocational education at a vocational school are combined within one course (Langthaler, 2015; Marope, Chakroun & Holmes 2015; Hoeckel, 2008). Generally, TVET programmes in Malaysia are divided into three streams: technical – mechanical, civil and electrical engineering, agriculture science and commerce subjects; vocational – engineering trades, commerce, home economics and agriculture; and skill training – occupational courses (Ahmad, 2003). The three streams are shown in Table 1.

Table 1: Main Streams of the Education and Training System in Malaysia based on Ahmad (2003)

Stream or Pathway	Institutions	Workforce Preparation
1. Higher education	Universities and other institutions of higher learning, both public and private	Professional and managerial personnel such as engineers, architects, and surveyors.
2. Technical and vocational education	Polytechnics, technical colleges and (more recently) community colleges	Supervisory personnel such as technical assistants and supervisors.
3. Vocational skills training	Skills training institutions, public and private	Skilled and semi-skilled workers.

TVET is being advocated as the educational subsystem that is expected to prosper alongside conventional education. To achieve this, RM6.6 billion is being allocated for the implementation of TVET Malaysia Masterplan in the newly announced Malaysian National Budget Projection for 2022 (Malaysian Investment Development Authority, 2022). However, current TVET institutions are far from being able to supply Malaysia with sufficient skilled workers in the future.

According to Employment Statistics First Quarter 2022 by Department of Statistics Malaysia, from a total of 8.572 million jobs, Malaysia's share of skilled employment (those who are employed in managerial, professional or technician roles) is at 24.7%, semi-skill workers is at 62.3% and low-skilled employment is at 13.0%. For Malaysia to attain developed-nation status under the 12th Malaysia Plan and prepare to cater to labour demand of employers for Industrial Revolution 4.0, the skilled workforce must increase to 35 per cent or 2.96 million people (Bernama, 2019).

Societal stigma is an issue affecting low TVET enrolment, as the public perceives that the TVET education system is set up to accommodate school dropouts, rather than as a significant education tool to train and supply skilled workers for the employment market (Awang, Alavi & Ismi, 2011; Patel, 2014; Bappah & Medugu, 2013). Harahap and Dita (2019) have found many factors that influence the decision on students to further their study in Indonesia. Perception of TVET occupations as difficult and tiring has also deterred parents and students from choosing TVET as an educational pathway (Yangben, 2014).

Moreover, with TVET-related jobs mostly associated with working as skilled tradespersons in a factory setting, some studies in recent years have shown various occupational illnesses related to working in a factory (Inoue et al., 2010; Seedat et al.,2009). The concern is understandable, as having strenuous jobs often leads to stressful lives (Cooper & Smith, 1985).

Unless appropriate countermeasures are taken, it would be difficult for Malaysia to achieve its goals of producing sufficient skilled workers and becoming a developed country. Therefore, it is imperative to examine whether TVET graduates will be more disadvantaged in terms of work-life wellbeing in comparison to conventionally educated graduates.

II. Literature Review

Work-Life Balance and Conflicts

Grady et al. (2008) defined work-life balance as "individuals' well-being, organisations' performance and a functioning society," and can also comprehensively include "family, community, recreation and personal time". Work-life balance measures the "extent to which individuals are equally engaged and satisfied with work and non-work roles" (Greenhaus, Collins & Shaw, 2003). Greenhaus and Allen (2006) also viewed work-life balance as an "individual's effectiveness and satisfaction in work and non-work roles being compatible with the individual's values and priorities".

Greenhaus and Beutell (1985) defined work-family and family-work conflicts as "a form of friction in which role pressures from work and family domains are mutually incompatible in some respects," while Netemeyer et al. (1996) defined it in more detailed manner, explaining family-work conflict as "a form of inter role conflict in which the general demands of, time devoted to, and strain created by the job interfere with performing family-

related responsibilities", and work-family conflict as "a form of inter role conflict in which general demands of, time devoted to, and strain created by the family interfere with performing work-related responsibilities." This study will only use the family-work conflict component as a variable.

Well-being

Diener (2000) states that well-being is an important component of a happy, quality life. Seligman (2002) further associates well-being with concepts such as happiness, satisfaction, vitality, optimism, passion, and self-actualisation. By using their subjective judgement, individuals can assess their well-being in relation to life satisfaction or psychological health (Grzywacz, Almeida & McDonald, 2002), as well as using objective measures of physical health (Broadwell & Light, 1999). The results of a study by (Isen & Reeve, 2005) indicate the creation of positive feelings induces subjects to increase their allocation of time to more creative tasks, which may be linked to greater productivity, while leaving time for less creative tasks unchanged. This outcome suggests that happier individuals become more efficient at undertaking repetitive tasks—though the report on the study does not delve into why this might be true or how this effect interacts with performance-related payment.

Family Satisfaction

Olson (2004) defines family satisfaction as the degree to which family members feel happy and fulfilled with each other. Clark and Farmer's (1998) definition of home-life satisfaction are like Olson's, where home-life satisfaction is defined as achieving close relationships and personal happiness. Brough and O'Driscol (2005) and Frone et al. (1997) conducted studies that found significant relationships between family and work satisfaction and individuals' well-being. Work performance of an individual is also found to influence level of family satisfaction (Hill, 2005). Clark (2000) argues that this occurs because family and work are the most important elements of an individual's life. Hill (2005) also identified that higher levels of family satisfaction can cause improvement in work satisfaction, organisational commitment, and productivity (Hill, 2005). Nevertheless, in the context of work satisfaction, it is also being influenced by emotional intelligence (Hamid & Amir Ishak, 2019)

Link between Family Satisfaction and Work Satisfaction

Proposing that work and family as the two most important life roles for most people, Grandey et al. (2005) argue that incompatibility between these roles may create tension and negative feelings. For instance, if the family role is greatly important to an individual and an integral part of one's identity, then perception that work drains time and energy needed for the family role (work-to-family conflict) may create a sense of threat to oneself (Grandey et al., 2005), and vice versa regarding family-to-work) conflict. Furthermore, if family is considered as the source of work interference it can result in lower family satisfaction (Beutell, 2010; Grandey et al., 2005).

Therefore, this study outlines the main hypothesis and hypothesis between-group differences based on the evidence discussed:
H1: There is a positive relationship between family-work conflict and family satisfaction.
H6: The impact of the family-work conflict towards family satisfaction will be greater for TVET graduates than for conventionally educated graduates.

III. Methodology

The study uses quantitative data collected through questionnaires given to TVET and conventionally educated graduates. The data will provide a better understanding of TVET and conventionally educated graduates' work-life balance and how it affects their well-being. This will provide an overview of work and lifestyle of TVET graduates, and whether there are differences of well-being and general outlook on life between TVET and conventionally educated graduates.

PLS-SEM Research Design

The final objective is to allow an estimation of complex cause-effect relationship models with latent variables by using partial least squares structural equation modelling (PLS-SEM), whose purpose is to obtain an understanding of TVET and conventionally educated graduates' work-life balance and well-being after entering the labour force. It will enable the researcher to better understand respondents' quality of life and any changes experienced after graduation. The researcher will also study how they balance their life between family and work. "Work-Family Conflict Scale," adopted from Netemeyer et al. (1996), is used as a measurement of family-work conflict. The use of "Family Satisfaction Scale," "are adopted from Diener et al. (1985) measures individual well-being. A questionnaire with a list of questions on work-life balance and well-being was given to TVET and conventionally education graduates, from which structural relationships analysis was performed.

Sampling Method for PLS-SEM

The quota sampling used is according to the percentage of total TVET employment in Malaysia in 2017 (Ministry of Human Resources, 2019). Quota sampling is used because it is independent of sampling frame, cost-effective and time-efficient (Saunders, Lewis & Thornhill, 2012).

For groups 1 and 2, representing TVET graduates and conventionally educated graduates respectively, 160 respondents for each group were chosen. Quota sampling is also used for these groups. As the study attempts to evaluate the work-life balance and well-being of TVET and conventionally educated graduates, the sample must consist of graduates from TVET institutions that are currently working and graduates from conventionally educational institutions that are currently working. The researcher made use of the online medium as the main option for distributing the questionnaire to groups 1 and 2. Table 2 shows the distribution of the questionnaire for each group according to their respective states and federal territories.

Table 2: Questionnaire Distribution for Each Groups According to States/Federal Territories

State/Federal Territory	Region	Group 1	Group 2
Perlis		1	1
Kedah	Northern	6	6
Pulau Pinang		10	10
Perak		11	11
Kelantan		9	9
Terengganu	East Coast	6	6
Pahang		9	9
Kuala Lumpur		4	4
Selangor	Central	30	30
Putrajaya		0	0
Negeri Sembilan		5	5
Melaka	Southern	4	4
Johor		21	21
Sabah		21	21
Sarawak	East Malaysia	17	17
Labuan		0	0
Total		160	160

Partial Least Square Structural Equation Modelling (PLS-SEM)

Partial least squares (PLS) analysis is an alternative to OLS regression, canonical correlation, or covariance-based structural equation modelling (SEM) of systems of independent and response variables. PLS can relate the set of independent variables to multiple dependent variables. PLS can also handle many independent variables, even with a problem of multi-collinearity on the predictor side (Garson, 2016).

PLS-SEM is used in the study to fulfil the objective of this paper, or to evaluate the work-life balance impact on the well-being of TVET and conventionally educated graduates. For a better comparison of results between TVET and conventionally educated graduates' well-being, PLS-MGA (partial least square multigroup analysis) is used.

IV. Results and Discussion

This section will elaborate on PLS-SEM analysis regarding work-life balance and well-being of TVET graduates and conventionally educated graduates. The section explores the work-life balance and well-being of graduates in terms of family satisfaction.

Structural equation model (SEM) with PLS approach using the SmartPLS software version 3.2.7 were used for this research. According to Reinartz, Haenlein and Henseler (2009), PLS is a preferable approach when researchers focus on prediction and theory development, as PLS requires only about half as many observations to reach a given level of statistical power as does ML-based CBSEM. Gefen et al. (2011) stated that across the social sciences, convention specifies 80 per cent as the minimum acceptable power. To test the power in the analysis, GPower was used to calculate the minimum sample size needed, and the test suggested a minimum sample size of 55 cases for the analysis. The sample size of n = 160 is more than required to achieve a power of 0.8. To assess the measurement and structural model, specifically SmartPLS Version 3.2.7 and bootstrap resampling of 1,000

resamples were used. Additionally, multigroup analysis (MGA) between the two groups was also conducted using SmartPLS. For applying MGA, the data was split into two data sets: TVET and conventionally educated graduates (TVET = 160 samples and conventionally educated graduates = 160 samples). Furthermore, all other necessary criteria suggested by Hair et al. (2013) were tested, i.e., convergent validity, discriminant validity and measurement invariance as shown in Table 3 and Table 4.

Table 3: Family Satisfaction PLS factor loadings, CR and AVE of full and graduate samples

Constructs	Items	Full Sample (n=320)			TVET Graduate (n=160)			Non-TVET Graduates (n=160)		
		Loading	AVE	CR	Loading	AVE	CR	Loading	AVE	CR
Family-Work Conflict	FWC1	0.782	0.660	0.906	0.827	0.689	0.917	0.694	0.607	0.884
	FWC2	0.855			0.850			0.881		
	FWC3	0.897			0.884			0.925		
	FWC4	0.772			0.823			0.677		
	FWC5	0.745			0.760			0.683		
Family Satisfaction	FS1	0.839	0.715	0.926	0.806	0.691	0.917	0.853	0.740	0.934
	FS2	0.914			0.891			0.933		
	FS3	0.914			0.911			0.922		
	FS4	0.828			0.827			0.847		
	FS5	0.716			0.707			0.733		
Gender	Gender-Male	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Education Level	EL-Diploma & below	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Marital Status	MS-Single	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Income Level	IL-RM3000 & below	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Table 4: Family Satisfaction Discriminant Validity

	TVET Graduate						Non-TVET Graduates					
	FWC	FS	G	EL	MS	IL	FWC	FS	G	EL	MS	IL
FWC	0.830						0.780					
FS	0.254	0.831					0.519	0.519				
Gender	0.150	0.077	1.000				0.148	0.148	0.860			
Education Level	-0.011	-0.103	0.146	1.000			0.047	0.047	0.001	1.000		
Marital Status	-0.011	-0.042	0.102	0.353	1.000		-0.095	-0.095	-0.085	-0.230	1.000	
Income Level	0.022	0.001	-0.087	0.488	0.487	1.000	0.033	0.033	0.230	-0.202	0.230	1.000

Note: Values in the diagonal (italicized) represent the square root of the AVE while the off diagonals are the correlations

As shown in Fig. 5 and Table 5, for TVET graduates, only two independent variables have a positive relationship with the dependent variable of family satisfaction. The variable of family-work conflict has a t-value larger than 2.58, and its p-value was significant at 0.01 level; the second variable is education level, which has a t-value larger than 1.28 and p-value significant at 0.10 level. All the other proposed hypotheses are rejected by the results of the model. The model only explained 8.3 per cent of the variance in family satisfaction, showing a weak level of predictive accuracy (Cohen, 1988). The results of the path analysis for family-work conflict and education level shows the significant values at 0.241 and -0.139, respectively. The model shows that with every increase of one unit of unstandardised coefficient in family-work conflict, family satisfaction rises by 0.241 units. This also shows a decrement of 0.139 units in family satisfaction with TVET graduates with a diploma and below, in comparison with those with a degree and higher. This assumes that the other variables are held constant.

However, the structural model results of conventionally educated graduates show marital status as the only independent variable having a positive relationship to family satisfaction, with a t-value larger than 2.58 and p-value significant at 0.01 level. All the other proposed hypotheses are rejected by the results of the model. The model only explained 8.8 per cent of the variance in family satisfaction, showing a weak level of predictive accuracy. The results of the path analysis for marital status show a significant value at -0.275. The model shows a decrement of 0.275 units in family satisfaction for unmarried conventionally educated graduates, in comparison with those married – assuming all other variables are held constant.

After analysing each model for both groups (TVET and conventionally educated graduates), the next step was to analyse both groups simultaneously for comparison. Rigdon et al. (2010) developed the differences in path coefficients, using a modified independent samples t-test. Specifically, path coefficients' "standard errors are obtained from independent bootstrap analyses of the two models and are used as input variables for the parametric t-test together with the original sample path coefficients." Tables 6.5 and 6.6 provide details on the input data, as well as the results of these t-tests.

For this purpose, PLS-based MGA was applied to examine the variances among responses. PLS-based MGA is suggested over the traditional t-test method for examining the differences among path coefficients. Furthermore, MGA has no restriction over normality distribution (Henseler et al., 2009). MGA analysis is similar to the test of moderation effect, which is based on path strengths across the groups. In the following Table 5 and Table 6, the hypothesised path coefficients, and their bootstrap values (t-values) are shown. The researcher found that there are no significant between-group effects. The significant between-group effect exists only for marital status in the direction hypothesised. The result of MGA shows that changes in family satisfaction of graduates are strongly affected by unmarried conventionally educated graduates, and weaker by unmarried TVET graduates.

In researching family satisfaction of graduates, group differences (TVET and conventionally educated graduates) are observed by examining the PLS-MGA for the TVET and conventionally educated graduates subsamples. The differences between the path coefficients across the respective two data sets were tested, and the results of prescribed hypotheses related to the group differences for both graduates (TVET and conventionally educated graduates) are summarised in Table 5.
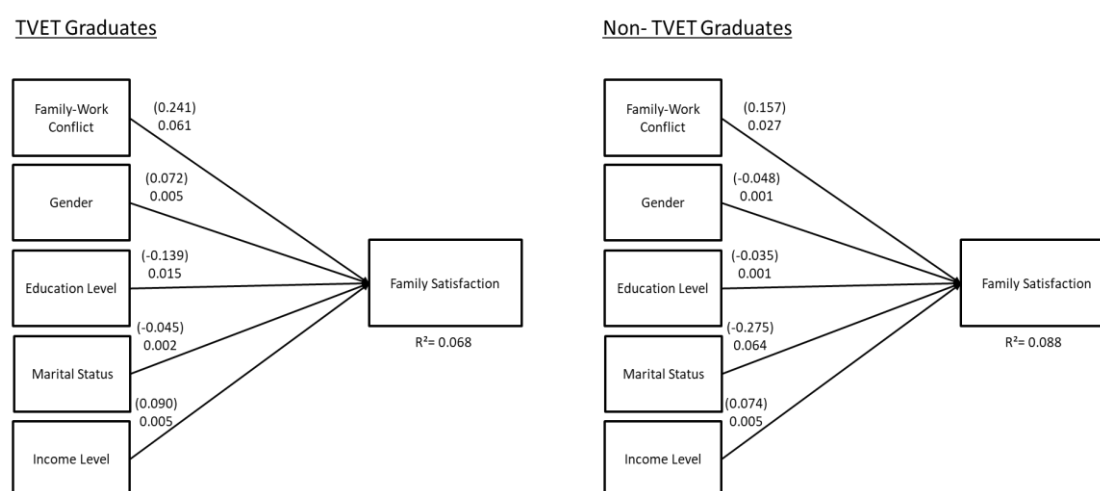

Figure 1: Test Results of Structural Models with Family Satisfaction as Dependent Variable (TVET and Conventionally Educated Graduates)

Table 5: Family Satisfaction Result for direct relationships

H	Path	Full Sample (n = 320)					TVET Graduate (n = 160)					Non-TVET Graduates (n = 160)				
		Std. Beta	SE	t-value	f2	R2	Std. Beta	SE	t-value	f2	R2	Std. Beta	SE	t-value	f2	R2
H1	FWC→FS	0.192	0.055	3.474***	0.039		0.241	0.084	2.866***	0.061		0.157	0.144	1.090	0.027	
H2	G→FS	0.021	0.057	0.369	0.000		0.072	0.087	0.827	0.005		-0.048	0.082	0.582	0.002	
H3	EL→FS	-0.070	0.072	0.969	0.003	0.068	-0.139	0.087	1.605*	0.015	0.083	-0.035	0.082	0.426	0.001	0.088
H4	MS→FS	-0.177	0.062	2.852***	0.025		-0.045	0.093	0.476	0.002		-0.275	0.082	3.366***	0.064	
H5	IL→FS	0.075	0.076	0.987	0.004		0.090	0.120	0.752	0.005		0.074	0.105	0.705	0.005	

Table 6: Path Weight Comparisons of Family Satisfaction (TVET and Non-TVET Graduates)

H	Path	TVET Graduate Path Coefficient		Non-TVET Graduates Path Coefficient	t-value	Result
H6	Family-Work Conflict→Family Satisfaction	-0.223	<	0.157	0.876	Rejected
H7	Gender→Family Satisfaction	0.333	>	-0.048	0.501	Rejected
H8	Education Level→Family Satisfaction	-0.864	<	-0.035	1.004	Rejected
H9	Marital Status→Family Satisfaction	-0.730	<	-0.275	1.863*	Supported
H10	Income Level→Family Satisfaction	0.481	>	0.074	0.101	Rejected

V. Conclusion

For family satisfaction, there are no large differences between the two groups, the only difference being that unmarried TVET graduates have a lower family life satisfaction when compared to unmarried conventionally educated graduates.

Work-life balance and well-being are important topics to delve into, as having high work-life balance and well-being will massively improve work productivity in the long-run. The findings in the study show that the well-being of TVET graduates is minimally different from their conventionally education counterparts. There have been plenty of preconceived ideas on TVET-based occupation that universally regard it as 'Dirty, Dangerous and Difficult' (3D), putting a high amount of stress on the physical and psychological well-being of TVET graduates. However, that does not mean that no measures should be undertaken to reduce the effect of family-work conflict and work-family conflict on TVET graduates. Stakeholders involved, such as government and employers, should re-assess the work-life balance and well-being of TVET graduates that enter the labour force, to ensure small decline in long-term work productivity and increase economic growth in the long-run.

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