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Research Paper

Education policy planning: New shaping trends

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Abstract. This paper provides an exploration of major changes in economic, political, social and technological factors affecting the future of education. The trend analysis focuses on strategic thinking and reflects the facing challenges of education-policy planning in ASEAN countries as well as the potential of education influencing these trends conversely. The exploratory factor analysis and regression model show that education-policy shaping depends on eight independent variables and their contribution with the important level of the variables are interpreted by 'shifting global gravity', 'public matters', 'good governance', 'living longer, living better', 'change of society pattern', 'security in a risky world', 'demographic shift' and 'global digital economy'. They create the connection between these trends and education-policy planning in ASEAN and informing the basis for decision-making in equipping people with necessary skills, knowledge and attitudes to thrive in their modern personal and professional lives.

Keywords: Education, education policy, policy planning, public policy.

INTRODUCTION

The impact of different factors on the education production function as well as globalization and its impact on education are relatively new concepts in educational research (Calero and Escardíbul, 2013; Green, 1999). The effects of globalization on education are related to all fields of political-cultural socio-economic life (Parjanadze, 2009). Moreover, the science and technology development including the boom of information and communication technology (ICT) and Internet applications create a new lifestyle that is shaping and examining the future of education in the context of global mega-trends. Therefore, there is a need for education to be better prepared in the context of economic, social and technological transformations. Education system should evolve comprehensively based on its mission of supporting individuals to develop, such as professional educators identify to help children's needs and support their integration into society. Besides, it is also important to understand how education can influence these trends. If providing the skills and competencies needed to operate in the modern world, education has the potential to influence the life outcomes of the most disadvantaged and poor people. Thus, it is an effective tool to reduce social inequity and incoherence. The education can help empower people and communities to take charge of their own civic processes and democratic institutions. Good access to learning and basic knowledge does not only open doors to individuals and communities but also shape the world's future.

The public policy formulation and implementation should adapt to the political social economic environment (Howlett and Ramesh 2003) and the arising factors affecting public policy unity (Hai *et al*., 2015). Factors of these trends require education policy to (re)allocate human, material resources and organizational structures in order to improve the quality of the educational process and results (Calero and Escardíbul, 2013; Hai, 2018). In other words, education policy can play a critical role in transforming the education landscape and outcomes of learning.

This paper explores major economic, political, social and technological trends affecting the future of education within ASEAN. It aims to inform strategic thinking, reflect the facing challenges of education, and, conversely, analyze the potential of education influencing these trends. The research questions are as follows: (1) What are factors shaping education? (2) How these factors influence education? and (3) What are implications for education policy planning in ASEAN?

MATERIALS AND METHODS

Background information

The ASEAN Foundation was established by the ASEAN Leaders in December 1997 during ASEAN's 30th Anniversary Commemorative Summit to help bring about shared prosperity and a sustainable future to all 10 ASEAN Member Countries, namely, Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam. According to UNESCO (2014), the data of ASEAN in selected aspects of education policy and management frameworks are compared across the education systems of ASEAN members. Some emerging trends are identified including the level of commitment to educational development and structure, sector management, teacher policies as well as some other quality determinants. It is also recognized that great variation occurs across ASEAN.

Some common trends can be identified such as expansion of compulsory education including at least lower secondary education; shift to more decentralized management; considerable private expenditure on education including shadow education; larger class size with teachers teaching fewer hours in high performing countries; curriculum reforms promoting non-cognitive, higher-order skills and academic contents; improving teacher performance through result-based evaluation for teachers; and the centrality of English presents important implication for language policy.

The survey monkey is designed to collect data related to factors shaping education in ASEAN in the coming decades. The research design is based on the theoretical framework specified in Session 1 with 05 key factors, each factor has 5 variables to describe and evaluate. The sound E-mail is prepared to send to target participants who are professors in universities, senior civil servants, education managers, university rectors, Ph.D. candidates in education management and public policy science. A total of 215 questionnaires are filled in by respondents in the survey from 9/10 ASEAN countries to reflect the perception of key educational actors on the factors shaping education in ASEAN coming decades. The data in some variables are treated as continuous are interval data used in the correlation matrix for the exploratory factor analysis and multivariate regression analysis.

Theoretical framework

This paper explores the factors that can affect education. According to the literature (see later), education in a country depends on the level of socio-economic development and social-political conditions where it exists.

Shifting global gravity

The change of global gravity in Table 1 is the first factor that is related to the global balance of economic power (OECD, 2019). The economic growth has given many people getting out of poverty, resulting in an expansion of the middle class with the rising need for education. Yet, globalization also brings new challenges, namely, unsustainable consumption, the depletion of natural resources, for some, a feeling of being left behind. As the education system operates within a cultural, educational community and human mobility, globalization is a key factor for the emergence of transnational networks and trade (Parjanadze, 2009).

The factor from globalization shapes education with the advantage and the challenge for countries. Globalization with the advantage and the challenge for countries lies in the ability to enhance joint efforts to counterbalance negative trends such as the widening gap between the rich and the poor. Therefore, there are some newly arising factors that can shape education.

It can be seen that the economic powers that shift the global economy such as giant economies become increasingly important. Thus, its outcomes are in relation to jobs, wages and increasing competition of ASEAN members through the skill distribution. As a result, it shall generate pressure for governments to deliver more diversified and better public services such as education with more transparency and accountability. The better education means more skilled workers, higher innovation potential and economic competitiveness in countries and regions.

If restrictions on global trade and labor flow decrease, the countries and economies will become more intertwined and interdependent. Some questions arising such as (1) How can education systems help citizens contribute to fair and sustainable global economic governance? and (2) How can education help build the skills required in a global marketplace?

It is observed that the information technology and reduction of transportation cost have facilitated the global mobility of people around the world, especially within ASEAN members. For the delivery of education, greater mobility means more diversity in classrooms as well as higher education becomes more globalized. Education

Table 1. A factor of 'shifting global gravity' that shapes education.

Variables measuring the factor	Short description	Code
Shifting economic power	- Better education means more skilled workers, higher innovation potential and economic competitiveness in countries and regions.	Shift 1
The global marketplace	- Education systems help citizens contribute to fair and sustainable global economic governance; - Education helps build the skills required in a global marketplace.	Shift 2
Mobility in a global world	- The greater mobility means more diversity in classrooms and higher education becomes more globalized; - Education has an important role to play in equipping students with the skills needed for a global future.	Shift 3
The e-planet	- Education has a role to play in developing the skills needed for a sustainable future.	Shift 4
New players	- The students need to learn advanced skills and qualifications required to fully participate in more knowledge-intensive and faster-changing labor markets, including social and emotional competence.	Shift 5

Source: Adaptation from OECD (2019).

has an important role to play in equipping students with the skills needed for a global future.

Recently the technological revolutions have changed global consumption patterns. Thus, it helps decrease production costs, which allows more people to afford electronic devices as well as participate in a digital world. The rising consumption also has its downsides. In this context, education has a role to play in developing the skills needed for a sustainable future.

It can be seen that technology in the production process is being upgraded. Innovation in some critical areas becomes more diverse such as renewable energy and artificial intelligence (AI). However, the challenge for any countries still persists in their ability to transform research and development (R&D) into social and economic benefits. For the education system, the students need to learn advanced skills and qualifications required to fully participate in more knowledge-intensive and faster-changing labor markets, including social and emotional competence.

Public matters

On the other dimension in Table 2, the factor affects education in improving civic and social participation and fostering democratic citizenship. The role of the nation-state in globalization is discussed to clarify a well-functioning democracy relies on the knowledge, skills and engagement of its citizens. Put differently, education has an important role to play in improving civic and social participation and fostering democratic citizenship.

Firstly, globalization has positively contributed to un-precedented economic growth. Therefore, the education systems combine quality and equity, providing all students with basic skills while ensuring opportunities for them to develop their full potential.

Secondly, the key processes for democratic decision-making in society, such as voting are being streamlined in the digital world. The education requiring to address the civic behaviors in the modern democracies as well as citizens in a digital society will play a role in forming of civic and digital competence in the society and the governance of schools.

Thirdly, the role of nation-state is the holder of sovereignty who exercises the role of nation state domestically and protects it abroad. In addition, in the globalization context, the international institutions have emerged, global integration has deepened, and transnational forms of citizenship have appeared. These transformations have implications for democratic governance and citizenship, and pose questions for education systems as well.

Fourthly, the modern democracies have gradually extended civil rights to originally excluded groups, such as women and ethnic minorities. How do we strike a fair balance between all parties in a diverse society? Do certain minorities require special attention to ensure their rights, and is it the implication for targeted policies to be enforced? Education systems have a role in fighting all forms of prejudice and discrimination, fostering inter-cultural tolerance and understanding and promoting equitable relations between all citizens.

At present, there are still many people living in predominantly rural regions in ASEAN where agricultural and traditional primary industries witness a declined tendency. However, challenges such as population decline and poor service quality are still remained, particularly in

Table 2. The factor of 'public matters' that shapes education.

Variables measuring the factor	Short description	Code
Private vices, public benefits	- The education systems combine quality and equity, providing all students with basic skills while ensuring opportunities for them to develop their full potential.	Public 1
The rule of the people	- Role of schooling in the formation of civic behavior and digital competence in the society and governance of schools.	Public 2
The nation-state in globalization	- In the globalization context, international institutions have emerged, global integration deepened, transnational forms of citizenship have appeared. The education system deals with transformations in democratic governance and citizenship.	Public 3
Liberty, equality, fratermity)	- Education can play a role in fighting all forms of prejudice and discrimination, fostering inter-cultural tolerance, understanding and promoting equitable relations between all citizens.	Public 4
Rural and remote areas	- New demands for skills, including entrepreneurship and innovation, often mean rethinking of educational provision and training in rural areas.	Public 5

Source: Adaptation from OECD (2019).

Table 3. The factor of 'security in a risky world' that shapes education.

Variables measuring the factor	Short description	Code
Personal and health security	- Education can play a role in raising awareness and preventing newer and more complex security challenges, and helping people to manage and reduce personal risk.	Security 1
Cybersecurity	- Education is important in fostering individuals to make wise choices to handle their own and others' information online, keeping abreast of cyber risks, preventing and detecting fraud.	Security 2
National security	- Education can play a role in helping a nation-state to learn the lessons of the past, and develop better foreign policies to avoid conflict.	Security 3
Environmental security	- Education is important in preventing and mitigating the risks to our planet. It can also help develop the responsible and sustainable behaviors needed for a secure global future.	Security 4
Economic security	- Education can equip adults and children with the skills needed for the labor markets in the future, as well as help them to cope with the increased emphasis on personal responsibility for financial security.	Security5

Source: Adaptation from OECD (2019).

remote and sparsely populated areas. Thus, new demands for skills and competence, including entrepreneurship and innovation, often mean rethinking of educational provision and training in rural areas.

Security in a risky world

The factor affects education in helping understand, prevent and mitigate security risks. It can also help citizens to build resilience and better preparation during the crisis. It includes security in a risky world. Apart from growing affluence, safer roads and more effective medicines and healthcare, the world is now facing ever more complex security challenges such as climate change, endemic diseases, threats of spreading pandemics, terrorism and cyber threats (Table 3).

Firstly, the security of a person is the basic right. The world is now facing increasingly complex security challenges. In this context, education can play a role in raising awareness and preventing newer and more complex security threats, and helping people to manage

Table 4. A factor of 'living longer, living better' to shape education.

Variables to measure the factor	Short description	Code
Aging society	- Education can re-skill and retrain in order to support people in taking on healthier habits and behaviors which are crucial to ensure healthier and extended lives for all.	Living 1
Chronic and degenerative disease condition	- Education can strengthen the competence of seniors and their careers in dealing with chronic conditions. - Education can also contribute to building stronger and more supportive communities that can cope well with the growing challenges of old age.	Living 2
Active elder	- Education can support individuals to adapt their skill sets over longer working lifetimes. - Education can play a role in fighting prejudice of 'the elderly' within and outside the world of work.	Living 3
The 'silver economy'	- Education can bring competence and qualified skills needed in the 'silver markets'. - Education can serve the educational demands of the 'silver workers'.	Living 4
Digital age(s)	- Education can support older adults in accessing the benefits of digitalization while lowering its associated risks. Furthermore, individuals of all ages are better prepared to cope with the fast pace of technological advances.	Living 5

Source: Adaptation from OECD (2019).

and reduce personal risk.

Secondly, all individuals are increasingly dependent on the uninterrupted functioning of information and communication technology systems (ICT) for all aspects of their daily lives such as physical goods and services. Much of our infrastructures are all now coordinated and delivered through computer systems. The role of education is important in fostering individuals to make wise choices to handle their own and others' information online, keeping abreast of new cyber risks, preventing and detecting fraud.

Thirdly, national security is the defense of a nation-state against invasion or occupation. It can also have broader meanings such as freedom to maintain core values without military threats. National security is a priority reflected in armed forces, border controls and funding of research and development. The role of education can help to learn the lessons of the past and develop better foreign policies to avoid conflict.

Fourthly, the environment plays a key role in sustainable development. The environment means our life and health. In a broader sense, it can also mean our economies and societies. International efforts combating climate change have the potential to reduce emissions and pollution. The forecasts predict rising global sea level, continuing loss of biodiversity and more frequent extreme weather events as the results of climate change. Therefore, the role of education is important in preventing and mitigating the risks to our planet. It can also help develop the responsible and sustainable behaviors needed for a secure global future.

Fifthly, economic security for individuals means financial security such as having adequate savings and insurances, and affordable credit as well as work-related security such as paid employment and a safe work environment. The role of education can equip adults and children with the skills needed for the labor markets in the future, as well as cope with the increased emphasis on personal responsibility for financial security.

Living longer, living better

The factor affects the role of education can help retain lifelong learning and use the expertise of so-called 'silver workers' in an aging society (Table 4). It is the life where seniors live and work longer, and they also tend to be relatively richer on average, opening the possibilities of a 'silver market' together with the specific needs of this group.

Firstly, the population aging means fewer young people and more adults. Aging society has several potential implications for education, such as access to lifelong learning. Hence, education can re-skill and retrain to support people in taking on healthier habits and behaviors which are crucial to ensure healthier and extended lives for all.

Secondly, the chronic and degenerative diseases such as diabetes and dementia are becoming more prevalent, especially among the most elderly. Therefore, education can strengthen the competence of seniors and their careers in dealing with chronic conditions. It can also contribute to building stronger and more supportive communities that can cope well with the growing challenges of old age.

Thirdly, active and healthy seniors are working longer.

Table 5. The factor of 'modern culture' that shapes education.

Variables measuring the factor	Short description	Code
Connected economy	- Education can develop the skills needed for the future of work. It can also equip students with flexibility and adaptability to remain their occupational mobility in a changing world.	Culture 1
Gender at work	- From unequal work prospects for men and women, education can prevent discrimination and ensure equal opportunities.	Culture 2
Changing families; Connected economy	- Education can play a role in supporting modern and traditional families and ensuring that learning needs are met for all.	Culture 3
Ethical consumption	- Education can foster the knowledge and social awareness needed to make sustainable choices, and empower individuals to identify and take action in cases of environmental degradation or social exploitation.	Culture 4
Virtual becomes reality	- Education can deal with this challenge to take advantage of new technologies while simultaneously addressing concerns about potential misuses, such as cyberbullying, loss of privacy or illegal trade in goods.	Culture 5

Source: Adaptation from OECD (2019).

The role of education can support individuals to adapt their skill sets over longer working lifetimes. Furthermore, education can play a role in fighting prejudice of 'the elderly' within and outside the world of work.

Fourthly, the seniors are living and working longer. This opens up the possibilities of a 'silver market' together with the specific needs and services of this group. Seniors are relatively richer on average, opening markets related to tourism, entertainment, education and culture. The role of education can bring competence and qualified skills that are needed in these emerging markets. It can also serve the educational demands of this segment of the population.

Fifthly, the Internet is popularly used today in many different aspects of daily lives from shopping and connecting with friends and family to managing household finances and monitoring health conditions. The role of education can support older adults in accessing the benefits of digitalization while lowering its associated risks. Furthermore, individuals of all ages are better prepared to cope with the fast pace of technological advances.

Modern culture

In Table 5, the education-affecting factor can play a role in equipping the next generations with necessary skills, knowledge and sentiment to thrive, shape society and preserve their livelihood. It is a modern culture where patterns of work in the digital world evolve, and big economies that base on consumption and ownership emerge. Modern culture witnesses the change of families and gender roles, with fewer traditional families and more active parenting from fathers.

Firstly, Internet access has reached almost universal levels in the world. The digital economy has become an important industry, accounting for a significant share of jobs and growth. The Internet has transformed markets by making it easier for buyers and sellers, workers and employers to come together across time and space. The role of education is to develop the skills needed for the future of work. It can also equip students with flexibility and adaptability to remain their occupational mobility in a changing world.

Secondly, women are increasingly participating in the labor market. Gender-related disparities in education and choice of subjects and differing attainment appear at an early age may lead to unequal work prospects for women. The role of education is to prevent discrimination and ensure equal opportunities.

Thirdly, the families are changing in many different ways as a result of evolving economies, societies and values over time. The social norms have been changed in many countries, bringing more tolerant laws and attitudes towards divorce and the predominant model of the nuclear family. The role of education is to play an important role in supporting modern and traditional families and ensuring that learning needs are met for all.

Fourthly, the larger the population is, the more impacts on the environment the mankind has. The role of education can foster the knowledge and social awareness needed to make sustainable choices, and empower individuals to identify and take action in cases of environmental degradation or social exploitation.

Fifthly, the Internet has gradually become an undeniable part of our lives where physical contact or social interaction now can be carried out online. In this

Table 6. Summary of checking 'reliability' of scale by the Cronbach Alpha index.

No	Factors	Variables	Numbers of variables	Cronbach Alpha
1	Shifting global gravity	Shift 1, Shift 2, Shift 3, Shift 4, Shift 5	5	0.871
2	Public matters	Public 1, Public 2, Public 3, Public 4, Public 5	5	0.678
3	Security in a risky world	Security 1, Security 2, Security 3, Security 4, Security 5	5	0.781
4	Living longer, living better	Living 1, Living 2, Living 3, Living 4, Living 5	5	0.688
5	Modern culture	Culture 1, Culture 2, Culture 3, Culture 4, Culture 5	5	0.792

Source: Analysis of the model by SPSS.

context, education can take advantage of new technologies while simultaneously addressing concerns about potential misuses, such as cyberbullying, loss of privacy or illegal trade in goods.

RESEARCH METHODS

In the research design, the author looks for alternative research methods such as case study of qualitative analysis. It is possible to use some quantitative methods but it may face problems of validity and reliability as cross data of ASEAN as well as a number of factors shaping education are uncontrollable. From a group of research methods, the author decides to choose the exploratory factor analysis and multivariate regression analysis to apply in this research. The exploratory factor analysis is a statistical technique that is used to reduce data to a smaller set of summary variables and explore the underlying theoretical structure of the phenomena. It is used to identify the structure of the relationship between the variables and the respondents. In this research, the author uses the Eigen-value criteria for 08 factors to be extracted and the screen test criteria for the selection of factors. Eigen-value is plotted on a graph and factors are selected.

The sample size is 215. Thus, it is satisfactory to the condition of 5 samples for the estimated variables. For 5 × 5 = 25 variables needed to be estimated, minimum sample size can be 5 × 25 = 125. In this research, the valid sample size is 215, so these observations secure the statistical analysis. The software IBM SPSS 22.0 was used to analyze the data.

The data is randomly sampled to select the target groups in different ASEAN countries by gender, professional, age and nationality.

The data collection uses the monkey survey by the questionnaire to collect the interval data related to 25 variables of 5 factors of the research. The research questions are located in the questionnaire to focus on variables of factors shaping education as theoretical framework (Tables 1, 2, 3, 4 and 5). In order to collect information of respondents on factors shaping education, the research used the Likert scale with 05 levels including: (1) strong disagree; (2) disagree; (3) undecided; (4) agree; and (5) strongly agree. The model analysis includes the 5 potential scales (a total of 25 variables for the observation) shaping education and 01 scale represented for the shaping education (Table 6).

The exploratory factor analysis, the quality of scale measurement, checking 'reliability' of scale by the index of Cronbach Alpha, the Test of Kaiser - Meyer - Olkin Measure of Sampling Adequacy is used in this research. The method of test of total variance explaining the factors shaping education is used. The multivariate regression analysis is used to deal with the dependent variable of factors shaping education and 08 independent variables.

RESULTS

Test of Cronbach-Alpha

As a result of Cronbach Alpha's test, it can be seen that all values of Cronbach Alpha index are all higher than 0.6. Therefore, it can be concluded that the scale system with 5 scales (very good, good, neutral, bad and very bad) is acceptable and continuous as well as 10 interval scales can ensure the quality for measurement of 25 outstanding variables (Table 6).

Results of EFA

Test of Kaiser – Meyer- Olkin Measure of Sampling Adequacy

Testing Kaiser – Meyer - Olkin Measure of Sampling Adequacy, in Table 7, it is shown that the KMO = 0.707 is satisfactory to the rule 0.5 < KMO < 1. Therefore, EFA is acceptable and appropriate for the practice.

Test of variance of observable variables in the representative scale

In Table 7, the Bartlett's test has significant .000 < 0.05. Hence, the author concludes that all observable variables have a linear relationship with the representative factors.

Table 7. KMO's test and Bartlett's test.

Kaiser – Meyer- Olkin Measure of Sampling Adequacy		0.707
Barlett's Test of Sphericity	Approx. Chi-Square	3327.453
	Df	0.63
	Sig.	.000

Source: Analysis of the model by SPSS

Table 8. Total variance explains the factors shaping education.

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.277	17.108	17.108	4.277	17.108	17.108	3.468	13.874	13.874
2	3.728	14.912	32.020	3.728	14.912	32.020	2.851	11.404	25.278
3	2.913	11.653	43.673	2.913	11.653	43.673	2.726	10.903	36.181
4	2.517	10.067	53.740	2.517	10.067	53.740	2.352	9.409	45.589
5	1.815	7.258	60.998	1.815	7.258	60.998	2.329	9.318	54.907
6	1.669	6.674	67.672	1.669	6.674	67.672	1.960	7.840	62.747
7	1.351	5.405	73.077	1.351	5.405	73.077	1.869	7.476	70.224
8	1.096	4.383	77.460	1.096	4.383	77.460	1.809	7.237	77.460
9	.950	3.799	81.259						
25	.074	.296	100.000						

Source: Analysis of the model by SPSS.

Test of total variance explained the factors shaping education

The last column of Table 8 shows the percentage of Cumulative Rotation Sums of Squared Loadings of 77.46%. It means that a 77.46% chance of the factors can be explained by the observable variables. From the above analysis, it can be concluded that the EFA analysis is appropriate with the overall data.

Outcome of the EFA analysis

From the test of the measurement scale with the Cronbach Alpha index and EFA analysis, 08 independent variables are identified to put into the next analysis (Table 9).

Multivariate regression analysis

For recognizing the factors shaping the education system in ASEAN, the model of multivariate regression can be formulated as follows:

Shaping education (Y) = f (F1, F2, F3, F4, F5, F6, F7, F8)

- Dependent variable: The variable of shaping education

- 08 independent variables: F1, F2, F3, F4, F5, F6, F7, F8 (Table 9).

In order to examine 08 independent variables that can shape the education, the author deals with the multivariate regression equation as follows:

Shaping education (Y) = β_0 + β1F1 + β_2F2 + β_3F3 + β_4F4 + β_5F5 + β_6F6 + β_7F7 + β_8F8

All these variables are analyzed by the calculation of factor scores. In the Table of model summary, from the significant level of the test F distribution < 0.05 meaning that this model is acceptable at the 95% correction. From Table 11, R Square = 0.506 and Adjusted R Square = 0.486 meaning that a 48.6% chance of shaping education explained by the 08 independent variables.

From Table 10, we can see the variance inflation factors (VIFs) < 10 (A rule of thumb is that if VIFs > 10, multi-collinearity is high). The square root of the variance inflation factor indicates how much larger the standard error is, compared with what it would be if these variables are uncorrelated with the other predictor variables in the model.

From Table 10, the Durbin-Watson = 1.524 of the model. The Durbin–Watson statistic is a statistical test used to detect the presence of autocorrelation at lag 1 in the residuals (prediction errors) from a regression

Table 9. Model after the Cronbach's test.

No	Measurement scale	Key variables	Explained Scale
1	F1 (SGG)	Shift 1, Shift 2	Shifting global gravity
2	F2 (PM)	Public 1, Public 2, Public 3	Public matters
3	F3 (SIRW)	Security 1, Security 2, Security 5	Security in a risky world
4	F4 (LLLB)	Living 1, Living 2, Culture 4	Living longer, living better
5	F5 (DS)	Culture 2, Culture 3, living 3	Demographic shift
6	F6 (GDE)	Living 4, Shift 2, Security 1, Culture 5	Global digital economy
7	F7 (CSP)	Living 5, Public 4, Public 5, Culture 3, Public 1	Change of society pattern
8	F8 (GoG)	Shift 4, Living 1, Security 3, Public 3	Good governance
9	ShapingEdu	Y	Shaping the education system in ASEAN countries

Source: Analysis of the model by SPSS.

Table 10. Multi-variate model of study on factors shaping education.

Independent variables	Unstandardized Coefficients (B)	t	Sig.	VIF	Standardized Coefficients (Beta)	Beta	Contribution of variables (%)	Level of importance
Constant	4.784	4.595	1.000					
F1 (SGG)	.578	5.327	.000	1.000	.387	.519	27%	1
F2 (PM)	.104	.870	.038	1.000	.076	.490	24%	2
F3 (SIRW)	.531	5.995	.000	1.000	.364	.154	2.7%	6
F4 (LLLB)	.484	4.503	.000	1.000	.336	. 380	14.5%	4
F5 (DS)	.249	2.502	.013	1.000	.189	.117	1.4%	7
F6 (GDE)	.291	3.182	.002	1.000	.193	.005	1.2%	8
F7 (CSP)	.183	3.375	.001	1.000	.182	.189	3.5%	5
F8 (GoG)	.070	.937	.035	1.000	.064	.382	14.7%	3
						1.856	89%	

Dependent variable:	Shaping education
N:	215
F:	26.335 (Sig. = .000[b])
R	0.711
R Square	0.506
Adjusted R Square	0.486
Durbin-Watson	1.524

Source: Short analysis of the model by SPSS.

analysis. 1 < Durbin-Watson = 1.524 < 3 meaning that there is no autocorrelation in the model.

For testing the residual regression, the author observes the Plot of Standardized Residual by the histogram and Q-Q Plot to investigate the model. The scatter plot is a set of data points that are observed. The data has standardized if the curve concentrates on the line. From the observation of the plot of standardized residual in this model, it can be concluded that the Residual has the standardized distribution.

In addition, this study checks the residual statistics to have a look at the Scatter Plot to see the relation of the dependent variable and residual. It can be seen that the observations are randomly distributed. Thus, there is no relation between the dependent variable and residual. Graphical plots and statistical tests concerning the residuals are examined carefully in this model.

From the Sig. level in Table 10, 05 independent variables F1, F3, F4, F6 and F7 have Sig < 0.01. Hence, these variables have significant impacts on shaping education. All independent variables have Sig. <0.05 meaning that all independent variables have impacts on shaping education at a reliable level of at least 95%.

From the above analysis, the regression model is as

Table 11. Model summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.711[a]	.506	.486	.73548	1.524

Notes: a. Predictors: (Constant): F1, F2, F3, F4, F5, F6, F7, F8; b. Dependent Variable: ShapingEdu. Source: Analysis of the model by SPSS.

follows:

Shaping education (Y) = 4.784 + 0.578SGG + 0.104PM + 0.531SIRW + 0.484LLLB + 0.249DS + 0.291GDE + 0.183CSP + 0.07GoG

DISCUSSION

For the model of shaping education

All 08 independent variables F1 (SGG), F2 (PM), F3 (SIRW), F4 (LLLB), F5 (DS), F6 (GDE), F7 (CSP), F8 (GoG) are linear to the shaping education in the country which are relevant to the OECD study (OECD, 2019). From the univariate linear regression analysis, the author knows the contribution (Table 10) and the important level of the variables. They can interpret how the variables affect the shaping education as follows: the 1st importance is 'shifting global gravity'; the 2nd importance is the 'public matters', it is appropriate to a case study of Vietnam (Hai, 2018); the 3rd importance is 'good governance'; the 4th importance is 'living longer, living better'; the 5th importance is the 'change of society pattern'; the 6th importance is the 'security in a risky world'; the 7th importance is the 'Demographic shift'; and the 8th importance is the 'global digital economy'.

For education-policy planning

Referring to the multi-variate model on factors shaping education policy above analysed, if the factor of 'shifting global gravity' can shape education most importantly, the education policies need to pay high attention to this factor. Thus, the change of giant economies in relation to the economies of ASEAN members should be taken for consideration. Globalization has facilitated the emergence of transnational networks, trade and human mobility. In contrast, new challenges including unsustainable consumption, the depletion of natural resources and, for some, a feeling of being left behind. Therefore, as ASEAN members have one market, one production base and are a community of culture and education, education policy planning in ASEAN should have objectives which equip students with the skills and competence needed to succeed in the global future as well as play a role in combating climate change and social inequality.

The factor of 'public matters' becomes the 2nd importance (Table 10) meaning that the objectives of education policy are to build civic knowledge and skills of ASEAN citizens, as well as the participation of ASEAN citizens to public matters because well-functioning of democracy relies on the knowledge and skills. The objectives of education policy are to reduce the concerns about declining trust and growing political and social unrest. Besides, the objectives of education policy are to play in improve civic and social participation and foster democratic citizenship as well as strike a fair balance between all parties in a diverse society.

The factor of 'good governance' lies on the 3rd importance (a combination of Shift 4, Living 1, Security 3, Public 3). It requires the objectives of education policy to concentrate on building public policy knowledge and competence to develop and implement the public policies such as better foreign policies to avoid conflict; policies for the skills needed for a sustainable future, transformations in the democratic governance and citizenship; and policies for re-skilling and retraining to support people in taking on healthier habits and behaviors which are crucial to ensure healthier and extended lives for all. It is appropriate with previous research outcome (Hai, 2018) as specified the policy implementation factors related to building public policy knowledge in education sector.

The factor of 'living longer, living better' becomes the 4th importance meaning that the objectives of education policy must promote the culture of lifelong learning in all aspects.

The factor of 'change of society pattern' (a combination of Living 5, Public 4, Public 5, Culture 3, Public 1) becomes the 5th importance meaning that the objectives of education policy should provide citizen the quality of life and equity by giving them opportunities to develop their full potential. It implies that older adults should be supported to benefit from digitalization while lowering its associated risks. Furthermore, individuals of all ages should be better prepared to cope with the fast pace of technological advances. The objectives of education policy will need to fight all forms of prejudice and discrimination, foster inter-cultural tolerance, understand and promote equitable relations between all citizens. More importantly, the objectives of education policy should support modern and traditional families and ensure that learning needs are met for all.

The remain factors are 'security in a risky world', 'Demographic shift' and 'Global digital economy', implying

that the objectives of education policy should equip people with the necessary skills, knowledge and attitudes to thrive in their modern personal and professional digitalized lives. The outcomes of education-policy planning should adapt and evolve to take advantage of new technologies while simultaneously addressing concerns about potential misuses, such as fraud, cyberbullying, loss of privacy as well as deal with other security issues in the risky world and demographic transition.

All members of ASEAN countries should adapt the new trend of education policy planning. As mentioned above, the factor of 'shifting global gravity' becomes the first importance, meaning that a change of the global gravity can affect education in ASEAN or a movement of foreign direct investment (FDI) can become a source of jobs and wages. Therefore, education policy should take this factor for consideration in order to provide solutions for improving skilled workers in the fields of technology, renewable energy, artificial intelligence, public services. Improvement of economic infrastructure can also be an important objective for education policy planning such as the relationship between public matter and the international economic shift. In order to do so, the human resources in this domain should be developed.

The 'good governance' is the third important factor, implying that education policy should follow to produce the qualified human resources proportional to good governance. Hence, the investment in public administration and policy and regulatory applications can be a good option for all ASEAN government in the coming time. Other factors related to the development of human resources can be addressed by an adjustment of education policy on environment protection, social issues related to demographic transition when some ASEAN members sooner gets out of the golden age of population. Last but not least, education policy should focus on the development of human resources to keep pace with the development of Forth Industrial Revolution.

CONCLUSION

Education policy planning plays the important role for human resources development. The article focused on the analysis of new trend in shaping education policy can be productive from major changes in economic, political, social and technological factors affecting the future of education with the most challenges of education-policy planning in ASEAN countries. As a result, it is shown that education-policy shaping depends on eight independent variables and their contribution with the important level of the variables are interpreted by 'shifting global gravity', 'public matters', 'good governance', 'living longer, living better', 'change of society pattern', 'security in a risky world', 'demographic shift' and 'global digital economy'. They create the connection between these trends and education-policy planning in ASEAN and informing the basis for decision-making in equipping people with necessary skills, knowledge and attitudes to thrive in their modern personal and professional lives.

This research is substantially opened to education policy formulation process which is guided by the new shaping trend of education-policy planning in ASEAN countries as well as emerging a suggestion to re-planning education policy in concerned nations for sustainable development.

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