

## Aligning Malaysia's New Economic Model with Knowledge Transfer Program

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### Abstract

The New Economic Model (NEM) launched in 2010 aims to improve the Malaysian's quality of life through the inter linkages of three elements: sustainability, inclusiveness and high income. The productivity, creativity and innovation among Malaysians are the priorities, which aims to help increase revenues. NEM and national agenda could be materialized through advanced knowledge transfer involving three major stakeholders: academia, graduate and postgraduate interns, industry and community. Knowledge Transfer Program (KTP) is not a standalone agenda but a program that entails five focuses in Key Result Areas (KRAs) (education, economy, sustainability and green technology initiatives, the disadvantaged groups and developing industry relevant curriculum). As such, the objectives of this paper are (i) to identify the NEM elements with completed KTP projects in the five rolling plans (ii) to evaluate the outcome of the projects in line with NEM objectives and (iii) to propose indicators as a way to fulfill the quality of life benchmark of each KTP KRAs. The outcome of these KRAs complements NEM objectives and that KTP is the anchor of such achievements.

**Keywords:** New economic model; Knowledge transfer program; Key result areas; Innovative.



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### 1. Introduction

Since the NEM have been introduced, government's effort to reach high-income nation by the year 2020 is on schedule. In order to achieve this aim, the involvement of all parties from community level to high leadership level is really required<sup>1</sup>. The introduction of KTP is a critical agenda Project (CAP) which is the 23<sup>rd</sup> National Higher Education Strategic Plan has previously given space and opportunity to Ministry of Education Malaysia through Higher Education Department to explore holistic network collaboration between industry and community<sup>2</sup>. According to Santoro and Gopalakrishnan the cooperation/involvement between university and industry through transfer knowledge program activities is considered as complement. Establishment of KTP is based on the strengthening of cooperation University – Industry/ with Community that is enacted to encourage activities involvement between academia and industry / community (Santoro and Chakrabarti, 1999)

The rationale of KTP implementation to support and being the benchmark in making MEB into success is seen able to translate closer integration with all components among government agencies, community and industry. Thus, it is also agreed by Mayer and Nonaka that integration that exists in an organisation is able to create innovation in structure, operation, culture and mechanisms that are used in an organisation (Mayer *et al.*, 1995; Nonaka, 1994) They also emphasize that theoretical integration and organisation operation model require more practical supports. Thus, the incorporate vision to achieve MEB visions is believed able to create great cooperation among communities, knowledgeable and to move towards high-income nation. This platform will become a connector which able to meet the needs and to solve community and industry problem thus to optimize potential among academicians through established, continuous and productive interaction. (Antony Xavier and Ahmad, 2012; Lyn Courtney and Neil Anderson, 2009; Mayer *et al.*, 1995; Nonaka, 1994)

### 2. Ktp in Malaysia

University Sains Malaysia is the KTP secretariat in Malaysia. This KTP program involves three (3) main components to gain agreement and benefits which the involvement of academician group, graduate and postgraduate interns and industry/community. The academician group which is the expertise in the respective fields is hoped to cooperate and contribute their knowledge to the industry and community in teaching and learning session, research and consultation. As stated by Courtney and Anderson universities are shifting from research and learning centre to knowledge transfer hub with other universities, industries and government (Lyn Courtney and Neil Anderson, 2009).

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Besides that, it also facilitates graduate and postgraduate interns to improve and enhance their personal and professional development. Both components play a vital role to cooperate with the industry to optimize and to utilize expert resources from IPTA in enhancing their business and economic activities. It is also believed that the expertise and skills that they have can be translated with direct involvement with the community to enable more practical knowledge transfer thus to improve the life quality of community holistically.

The main objectives of this knowledge transfer program are to propose and promote knowledge transfer through creative and innovative idea exchange, translate research findings in more practical and productive context and expose experience and skills among IPTAs, research centres, industry, government agencies and community (Antony Xavier and Ahmad, 2012; Lyn Courtney and Neil Anderson, 2009; Mansor *et al.*, 2015; Mayer *et al.*, 1995; Nonaka, 1994; Santoro and Chakrabarti, 1999). These objectives lead to achieve the development goals, improve product quality, services and fundamental to be shared with all interested parties: academicians, industry, community and graduate and undergraduate interns (Malaysia, 2011). In order to achieve these goals and objectives, KTP in Malaysia practised five (5) key result areas, as reference and benchmark to guide in achieving the objectives that have been planned in KTP.

**Table-1.** KTP Key Result Areas in Malaysia

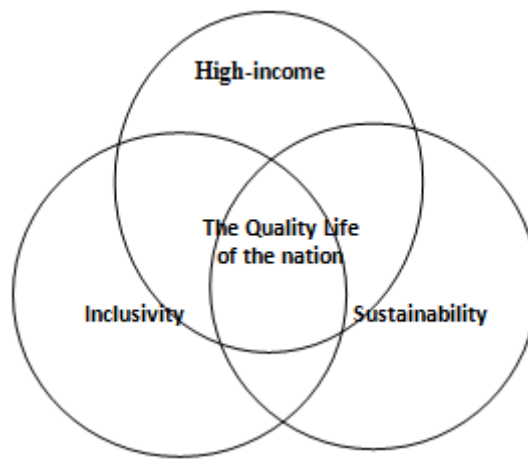
<b>The Focus of KTP Key Result Areas in Malaysia</b>	
Education	Strengthen holistic education system by applying in teaching and learning activity, research and consultation. Besides that, focusing on sharing and exposing mutual expertise with industry/community in education aspect.
Economy and industry revenue sectors in certain sectors	Sharing expertise and cooperating with industry to explore the opportunity in certain sectors which can give benefits and profits especially in economic activities.
Sustainability and green technology initiative	Optimize source towards sustainable usage to increase growth development sustainably and resiliently.
Disadvantaged groups	Identify and ensure rights and needs that are supposed to be given to disadvantaged groups are not been neglected, undeniable and excluded.
Develop curriculum parallel to industry needs.	Increase and improve education curriculum in IPTA to fulfill industry needs in certain areas.

Nevertheless, if we look at the current status of knowledge transfer activity in Malaysia, it has been implemented in most IPTAs in Malaysia before KTP is introduced. However, that activity had not been done comprehensively even the implementation that was carried out differed from other universities. Weak relations in term of sources and time usage spent in a research affected the reasearch findings, besides there are no complete proposals in translating the fundamental framework of knowledge transfer activity in Malaysia as a whole (Alimohammadlou and Eslamloo, 2016; Kalar and Antoncic, 2015; Nilsen and Anelli, 2016). Thus, this research observes the introduction of KTP as one of the critical agendas in National Higher Education Strategic Plan that has been improved in Education Development Plan 2013-2025 can be used as framework to support government's effort to achieve Economic, Social and Government Transformation Program which is being introduced at the mean time.

### 3. New Economic Model

The New Economic Model (NEM) is a continued developed achievement of three (3) decades; Growth Development era after New Economic Model, National Development Policy (NDP) era and Knowledge-Based Community Era. The circulation of these development eras actually enable Malaysia to provide better health service, better education for the nation, eradicate poverty, construct world class infrastructure and become main exporter at the global level. Excellent growth of three (3) decades ago has made our nation richer and more knowledgable, live longer, move farther and able to access more modern and complex information technology. Nevertheless, the progress that is achieved through that period has become limited as a result of economic turmoil accrued approximately in the year 1997. The effect of that crisis made most of the policies and strategies that are used to achieve holistic development vision today unable to be brought forward to the next level. The effort of nation development to compete in global level is compelled to go through more challenging and more complex external environment.

Thus, the government takes a brave step to make transformation on economy by introducing the NEM. The other aims of NEM introduction are to lead the country towards achieving high-income status by 2020; giving benefits to all Malaysian citizen; resilient solution in economy and environment; ensuring citizen and business atmosphere benefitted from the implementation of the NEM holistically. (Landry *et al.*, 2010)

**Figure-1.** New Economy Model

NEM had set the focus to increase the quality life of the nation through high-income, inclusiveness and sustainability aspects. These three aspects play an important role to lead and guide NEM towards the direction of shaping Malaysia's characteristics by 2020 to become a based market nation, systematic administration and possess high asean integration, possess citizen that have the ability to become an innovative interpreneur. All these are able to change the strategy and the pattern of nation in achieving towards high-income status by 2020 by increasing the investment, increasing the labour productivity to enhance efficiency, thus to increase the real growth rate of nation to 6.5% per annum from 2011-2020 (Antony Xavier and Ahmad, 2012), and it is expected that Gross National Product (GNP) per capita will increase to USD\$17,700 by 2020. With this NEM implementation, our country is able to enhance holistic aspect in NEM as part of the efforts to form unity. The growth which is based to empower the disadvantaged group and to ensure the neglected society are no longer exist are seen able to be achieved with this NEM, besides that, government will put a lot of efforts to fulfill the nation basic needs. Despite various challenges in managing this holistic aspect, especially special position for bumiputera with legitimate interest of other groups, however in NEM this aspect will be observed and government is committed to provide fair and just opportunities through transparent evaluation.

The dependency of nation towards main source at the mean time is no longer relevant to maintain the economy and environmental sustainability. (Mirabent *et al.*, 2013; Nilsen and Anelli, 2016; Penuela *et al.*, 2014) NEM is no longer made the natural source as the main machinery in planning the economic growth, nevertheless, any policy or investment decision that will be implemented will weigh the whole long term impacts that will be faced by community economy and environment. It is hoped that, NEM is able to give benefits to the society holistically if it can be done consistently.

#### 4. The Needs of Ktp in Achieving NEP Goals

In discussing about KTP vision in fulfilling the goals of national policy especially NEM in Malaysia, there were very few researches had been carried out to explain the planned framework vividly to make sure the KPT visions are able to fulfill the national policy. NEM visions clearly show that the main focus model is to improve quality of life holistically through sustainable strategy with the focus to achieve high-income, inclusivity and sustainability. All these are also part of KTP focuses. In spite of very few researches had been carried out to explain the KTP needs in national policy, this research merges the needs in Economic Transformation Programme which has ruled nine (9) national priority areas and focus in The KTP Key Result Areas (KRA).

**Table-2.** Project Summary based on Five KRAs and Nine NPAs

Key Result Areas (KRA)	Rolling 1 2011-2013	Rolling 2 2012-2014	Rolling 3 2013-2015	Rolling 4 2014-2016	Rolling 5 <sup>a</sup> 2015-2017	Total Project
Economy	16	42	17	37	36	148
Education	11	19	47	14	22	113
Green Technology	13	25	22	30	12	102
Disadvantaged Communities	2	3	13	10	5	33
Relevant Curriculum	2	6	14	7	1	30
Total Project Allocation (RM)	5,604,152.00	13,029,680.45	15,872,984.00	14,805,988.09	14,175,363.25	63,488,167.79
<b>Nation Priority Areas (NPA) – since 2015</b>						
Water Safety					5	5
Energy Safety					7	7
Transportation and					3	3

municipal						
Biodiversity					2	2
Cyber Safety					0	0
Climate and Environment Safety					2	2
Food Safety					5	5
Medical and Healthcare					5	5
Estate and Commodity					2	2

KRA and KTP have focused on the policy which becomes the priority from 2011-2013 in education, economy profit sector or other certain sectors in industry, sustainability and green technology initiative, neglected group and develop curriculum which is paralleled to the industry needs. All the focuses in KTP actually are seen able to be paralleled with the nine (9) National Priority Areas (NPA) including the focus in biodiversity, cyber safety, climate and environment change, food safety, medical and healthcare, estate and commodity, energy safety, transportation and water safety. In parallel with the visions, the involvement of the interested groups as is ruled in KTP which are involved of the graduate and postgraduate interns, academicians and industry/community is a needed combination to achieve several benchmarks in the Economic Transformation Programme (ETP) via NEP implementation. The combination between National Priority Areas (NPA) and Key Result Areas in KTP is believed to fulfill the 6 main areas ruled in 11th Strategic Malaysia Plan which consist of the areas as follows:

- i. Strengthen the inclusivity towards fair and just society
- ii. Increase people's welfare
- iii. Increase human capital development for a great nation
- iv. Leading towards green growth for resilient sustainability
- v. Develop infrastructure to support economic growth
- vi. Enhance economic growth for a peaceful increment

Within 5 years RMK-11 in NEP, the KTP Key Result Areas Focus in Malaysia has been paralld with NEP visions. The connection between National Priority Areas (NPA) and six (6) areas which are incorporated in RMK-11 are actually being the benchmark towards KRA KTP are seen in the right track even there are a few weaknesses in fulfilling the requirements of National Priority Areas (NPA) and six (6) main areas in RMK-11.

## 5. Method in Evaluating the KTP Activity Programme towards Achieving the New Economic Policy Vision

Based on the above explanation and discussion, it clearly shows that the other aim of Malaysia KTP establishment is to achieve the visions and missions in NEP. Thus, to prove KTP activities are paralleled to NEP visions, this research has carried out an early evaluation on the KTP programs. Until now, there are six (6) phases of KTP offered grants have been offered which are separated according to *rolling 1*, *rolling 2*, *rolling 3*, *rolling 4* and *rolling 5* which involved RM63,488.167.79 allocation in total. Besides that, *rolling 6* phase is still under evaluation for 2016 grant allocation. Based on Figure 2 below, it shows that the focus of KTP programs from *rolling 1* to *rolling 4* are still focusing on the five (5) KRA KTP, however starting from *rolling 5* the focus of KTP program started to extend to several National Priority Areas which have been ruled in the Economic Transformation Program. Nevertheless, course evaluation on the KTP program in achieving the NEP visions towards the quality life improvement of the nation through high-income generation, inclusiveness and sustainability are only can be solved with *rolling 1*, *rolling 2* and *rolling 3*. The evaluation can only be done on these three rollings because these levels have completed and had undergone serial of observations by the KTP committee members to ensure the efficiency of the chosen programs. While, the program under *rolling 4* and *rolling 5* are not completed yet and are going through observation process like other KTP programs in the previous rolling.

## 6. Result

Evaluation result from rolling 1-3 showed that in overall generating high-income; inclusiveness activity and sustainability in KTP program are paralleled with NEP vision. The focus still put the priority to community and industry except KPAs for vulnerable group more focus on community.

### 6.1. Generating High-Income in KTP

Generating high-income is one of the visions in NEP as an effort to increase the quality life of the nation holistically. Based on Table 3, it clearly shows that most of the KTP programs and activities which have been approved are seriously focusing on high-income generating activities through industry as well as community. All activities or KTP programs are divided into five (5) KTP Key Result Areas which contain commercial value and able to develop economic activity towards the increment of industry and community income.

**Table-3.** Programme or Project of Income Increment in KTP

KPAs	Income Generating Activity	Sector	Rolling
<b>Economy</b>	Introducing new processing system	<b>Industry</b>	1,2,3
	Method and Technique to prolong the expiry date of products		1
	Sharing Technology in products, food and agriculture sector		1,2,3
	Production of new methods or technique in information system		1,2
	The usage of organic source in fertilizer, fertility and growth.		1,2,3
	Creative Industry		2
	New method and technique in harvesting		1,3
	Modification of downstream product towards commercialization		2,3
	Community knowledge enhancement program towards eco tourism, farming, agriculture and product recognition.	<b>community</b>	1,2,3
	Developing financial management systems		2,3
	Empowering the place of worship compound as the source of economy		2,3
<b>Education</b>	Introduction of halal certification module and good product	<b>Industry</b>	1,3
	Introducing information technology system and programming system in automotive sector.		1,3
	Cooperative Development		3
	Innovative construction business module		3
	Introduction of radio amateur programme		3
	E-learn learning and teaching	<b>Community</b>	1,2,3
	Developing the skill and potential of school students		1,3
	Exposure in understanding of disabled society communication skill - blind and mute		1
	Spiritual and Islamic theology module expansion		2,3
	Awareness and availability program		2,3
	Teaching aid tools improvement		3
	Information communication of rural area school		
<b>Green Technology</b>	Introduction the usage of environmental friendly product.	<b>Industry</b>	1,2,3
	Introduction of energy saving technology		1,2,3
	Encouragement the usage of bioproduct and biochemical usage		1,2,3
	Recycle product		1,2,3

	Waste and environmental management	<b>community</b>	1,2,3
	Energy usage audit		1
	Livability		2
	Cemetery management systems		3
	Natural Irrigation technology		3
<b>Vulnerable Group</b>	The usage of ICT among senior citizen	<b>community</b>	1
	Understanding the life culture of disabled society		2,3
	Improve paralimpic athlete ability		3
	Basic amos reading curriculum modul		3
	Medical assistant or patient facilitator service	<b>Community and Industry</b>	1,2
	Entrepreneurship management among poor people	<b>Industry</b>	3
	Business capital for single mother		3
	Business infrastructure for indigenous society		3
	Spreading early rehabilitation programme for excellent children (Deaf and Autisme)		3
<b>Developing Relevant Curriculum</b>	Developing learning kit for excellent children	<b>Industry</b>	1
	Application of metal electronic technology		2
	Management of quality control module		2
	Developing communication system in facing the natural disaster warning		2
	Financial shariah-compliant consultation training		3
	Curriculum of factory routine		3
	Communication and electromagnet monitor		3
	Francise industry development		3
	Coaching methodology knowledge	<b>Community</b>	1
	Research through archeology		3
	Energy and environment course development		3
	Exclusive halal training programme		3
	Rural enterprenuer monitoring programme		3

## 6.2. Inclusive Activity and KTP Program

Inclusive Activity aspect in KTP is a vital aspect in NEP. The effort to increase the quality of life may not be achieved if this inclusiveness is disregarded.



**Table-4.** Inclusive Aspect in KTP

KPAs	Industry/Community Involvement (Inclusiveness)	Sector	Rolling
<b>Economy</b>	Fish Farmers/ Fishermen	<b>Industry</b>	1,2,3
	Medical practitioners		1
	Small and Medium Entrepreneurs		1,2,3
	Farm Owners/ Farm operators/ farmers		1,2,3
	Electronic and manufacturing manufacturers		1,2,3
	Food product manufacturers		1,2
	Agriculture product manufacturers		1,2
	Medical product manufacturers		2
	Creative industry practitioners		2
	Construction contractors		2,3
	Animal Farmers	<b>Community</b>	1
	Rural area residents		1,2,3
	Taxi drivers		3
	Public society		3
	NGO/ guard of places of worship		3
<b>Education</b>	Food product manufacturers	<b>Industry</b>	1,3
	Medical product manufacturers		1,3
	Government agency		1
	Manufacturing and electronics manufacturers		1,3
	Rural area residents	<b>Community</b>	1
	Secondary school students		1,3
	Disabled (Blind, Deaf and Mute)		1
	Academicians/ researchers		1,3
	Public residents		1,2
	Government agencies		1
	Children below 6 years old		2,3
	Children below 6 years old		
	Drug Users		2
	Farm Owners/ Farm operators/ farmers		2,3
	Fish Farmers/ Fishermen		2
	Youths		3
	Teachers		3
	Indigenous residents		3
	Immigrants		3
<b>Green Technology</b>	Animal farmers	<b>Industry</b>	1
	Electronics and manufacturing manufacturers		1,2,3

	Agriculture product manufacturers		1,2,3
	Food products manufacturers		1,2
	Small and Medium Entrepreneurs		1,2
	Government agency		1,2
	Teachers	Community	1,3
	General public		2,3
	Rural area residents		2
	Farm ownerS/ farm operator/farmers		3
	Construction contractors		2,3
	Creative industry practitioners		3
	Welfare NGOs		3
Vulnerable Group	Senior citizens	Community	1
	Modern medical practitioners		1
	Secondary school students		1
	Disabled (Blind, Deaf, Mute)		1,2,3
	Stroke Patients		2
	Underprivileged residents		3
	Single Mothers		3
	Autism children		3
	Indigenous society		3
	Welfare NGOs		3
Relevant Curriculum Development	Children below 6 years old	Community	1
	Sports trainers		1
	Academicians/ researchers		2,3
	Consultants		2,3
	Rural area residents		2,3
	Small and Medium Entrepreneurs		3
	Photograpers		3
	Traditional medicine practitioners		3
	Secondary School Students		3

### 6.3. Sustainability in KTP Activity and Programme

Sustainability is one of the main objectives of NEP to ensure the life quality of nation, economy and environment can be increased and maintained in the best way. The evaluation results on KTP program that has been done from rolling 1 to rolling 3 shows that most KTP programs have achieved sustainability value as expected in NEP.

**Table-5.** Project or Programme Sustainability in KTP

KPAs	Sustainability	Sector	Rolling
Economy	Organic based products	Industry	1,2,3
	Fat-free products		1
	System and innovative technology		1,2,3
	Sistem pemantauan elektronik Electronic surveillance system		1,3
	Environmental friendly		1,2,3



	technology		
	Recycle		1,2
	Good bacteria in product making		1
	Comercialization of SME product		2,3
	Opportunity in creative industry		2
	Pembangunan kampung tanpa wayar		2
	Development of Village/Rural area wireless		
	Convenient Technology in Harvesting		2,3
	Knowledge sharing with community	Community	1
	Finance management Skill		2
	Empowering the role of place of worship		2,3
	Monitoring system for disadvantaged entrepreneur		3
	Social innovation		3
Education	Training, certification and recognition module.	Industry	1,3
	E-learning in teaching	Community	1
	Green technology exposure to secondary school students		1,3
	Brain training		1
	Skills in socio-scientific		1,3
	Developing teaching aid tools		1,2,3
	Spiritual and islamic theology module expansion		2,3
	Empowering e-commerce		2,3
	Awareness and availability		2,3
	Preventive Education		2
	The usage of amateur radio		3
Green Technology	Energy saving	Industry	1,2,3
	Environmental friendly substance usage		1,2,3
	Solar technology		1,2,3
	River management		1
	Recycle		1,2,3
	Monitoring and energy audit		1
	Bio product and waste management		2,3
	Smoke pollution technology control system		2
	Hydro-micro system		2,3
	Cemetery management system		3
Vulnerable Group	Empowering senior citizen group with ICT	Community	1
	Home nursing		1
	Treatment procedure for stroke patients		2
	Basic curriculum in Amos reading		2
	Underpriviledged enterprenuer monitoring system		3
	Business for single mothers		3
	Indigenous society		3

<b>Relevant Curriculum Development</b>	entrepreneurship		
	Edu-Tourism for Disabled groups		3
	Communication with Disabled society		3
	Kit for Smart children below 4 years old	<b>Community</b>	1
	Introduction of coaching methodology		1
	Metal electronic application		2
	Shari'a financial management		3
	Good factory routine		3
	Franchise industry training		3
	Archeology research		3
	Halal executive training in cosmetic and food industry	<b>Community/ Industry</b>	3
	Radio communication system during disaster		2
	Quality control system module		2,3
	Development of vocational module		3

Table 5 above shows the focus in KTP activities and programs has been completely paralleled to ensure all projects that were awarded with KTP grant have achieved the expected sustainability value. Most projects in KTP have involved direct cooperation between both industry and community sides.

## 7. Conclusion

The outcome from the evaluation above clearly shows that the direction of Knowledge Transfer Programme (KTP) is paralleled with the enshrined vision in NEP which is to increase the life quality of nation. The combination of three (3) main components of NEP which are high-income, inclusivity and sustainability in fulfilling KTP Key Result Areas has clearly shown that KTP activity, programme and project are able to give big impact in achieving nation economic growth agenda. Eventough there are some weaknesses in several focus sectors but specific evaluation to identify the needs of industrial and community to contribute towards development in some areas that have been identified in KTP need to be emphasized. The above evaluation clearly shows KTP activities, programmes and projects are able to strengthen inclusivity towards fair and just society. Inclusivity is important to ensure consideration in all aspects that involve individual, community and environment in order to observe the impacts that will be faced in the future. This research looks at the aspect of inclusivity as always being debated in many world development agendas. Even researchers are also frequently exploring signs of social inclusiveness. All these play an important role in the development of a nation.

KTP activities, programmes or projects are also planned to enhance human capital development. Moving towards high-income and succesful nation, human capital development should be paralleled with other economic growth sectors. Previous research clealy showed that human capital developmennt strategy is a platform to become a successful nation. It is undeniable that since three years ago, human capital development in Malaysia has successfully made people become more mature and open-minded. Nevertheless, continuous strategy towards the mission needs to be planned and arranged so that the society is able to think creatively and innovatively. In facing with the challenging global environment, climate change and global warming, planning towards environmental sustainability in every planned development has to be the priority. This research observes that one of the key result focus areas in KTP that applies green technology and sustainability as reseach focus is able to make KTP activity, programme and project more sustainable and resilient. Most economic activities and income generations in KPT also show the direction towards green growth to increase resilient sustainability of the community, industry and environment to be permanently relevant until the next generation in the future.

Besides that, this reseach sees that infrastructure consolidation aspect to support current economic growth is at the level that can be proud of. In the era of National Development Policy, Malaysia has successfully modenised infrastructure and service delivery which is one of the best in Southeast Asia. This world class infrastructure growth is seen as able to improve economic growth to increase country prosperity, thus to increase the quality of life and people's welfare.

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