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UNIVERSITI  
TEKNOLOGI  
MARA



**THE IMPACT OF LABOR FORCE ON PRODUCTIVITY: A  
CASE STUDY OF PEJABAT DAERAH DAN TANAH  
SEBERANG PERAI TENGAH**



**BACHELOR OF BUSINESS ADMINISTRATION  
(HONS) FINANCE**

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## **EXECUTIVE SUMMARY**

My precious and memorable 6-month industrial training began at Pejabat Daerah Dan Tanah Seberang Perai Tengah. I have gained a lot of experience and skills during my internship at the places. I get exposed with the management of the organization especially in tax revenue collection under department of Unit Hasil. As one of the requirements to complete my degree in Bachelor of Business Administration (Hons) Finance at University Technology Mara (UITM) Perlis, we as a student need to conduct a research relating to our chosen organization that we choose to undergo industrial training. So, this project paper will provide research and analysis on The Impact Of Labor Force On Productivity: A Case Study Of Pejabat Daerah Dan Tanah Seberang Perai Tengah. Secondary data have been used to gain information in order to accomplish this project paper and regression model is applied in order to analyze the data. The year of observation for this research is starting from 1980 to 2019. This project paper also will discuss on several important variables that affecting the labor force. The dependent variable that been measured in this research is productivity which proxy by gross domestic product. While the independent variables that been used in this study is human capital which proxy by labor force, technology which proxy by fixed telephone subscription, resources which proxy by income and lastly physical infrastructure which proxy by railways. The findings revealed that human capital, resources and physical infrastructure are statistically significant in affecting productivity. The result obtained is also in line with the previous study by other researchers that conducting research in the same topic area which is productivity. Pejabat Daerah Dan Tanah Seberang Perai Tengah should focus on these three macroeconomic variables that are statistically significant in order to improve their productivity. With the obtained result and recommendation provided, it hopes that the organization can become more efficient and successful in accordance with their objectives.

## TABLE OF CONTENTS

Executive summary.....	i
Table of content.....	ii
Acknowledgement.....	iii
1.0 Student profile.....	1
2.0 Company profile	
2.1 Background of the company.....	2
2.2 Vision.....	3
2.3 Mission.....	3
2.4 Objective.....	4
2.5 Organizational Structure.....	5
2.6 Services.....	6
3.0 Training’s Reflection.....	7
4.0 Analysis	
4.1 Literature Review.....	9
4.2 Research Methodology.....	12
4.3 Data Analysis.....	15
4.4 Findings.....	16
5.0 Discussion & recommendation	
5.1 Discussion.....	18
5.2 Recommendation.....	19
Conclusion.....	21
References	
Appendices	

## **2.0 COMPANY PROFILE**

### **2.1 Background of the company**

Pejabat Daerah dan Tanah Seberang Perai Tengah (PDTST) is a major catalyst in leading the development of the area in the Central Seberang Perai. It is located in the heart of Penang Industrial Development Zone, particularly in the Seberang Perai and generally located in the middle of the corridor North West Development Zone whether from the perspective of North-South or East-West peninsula.

Seberang Perai Tengah district has a complete infrastructure facilities and the best of a communication network system via the North-South and East-West Highway, Penang Port, Bayan Lepas International Airport and the North-South Railway and International Bangkok Network. Besides, supply can be upgraded according to the needs and capacities in need.

The rapidity of development in the island also has contributed to boost Central Seberang Perai District as a district that operating as robust in real estate development mainly involving residential, commercial and industrial. Furthermore, Central Seberang Perai District also has a Human Development facilities which are good and well organized.

Central Seberang Perai District has an area of 236,796 square km and is the 3rd largest district in Penang. The population is estimated at 362.820 people. Various races and backgrounds that inhabit 22 sub-district in Central Seberang Perai which has 4 cities, namely Bukit Mertajam City, Perai City, Perda City, and Seberang Jaya City.

## 2.2 Vision

Their vision is to become the best land and district administrator in Malaysia and towards an efficient and effective land management and administration system as a catalyst for the development of the state of Penang.

## 2.3 Mission

Mission of Pejabat Daerah dan Tanah Seberang Perai Tengah is to provide superior and excellent land management and services through planning, implementation, supervision and compliance with land laws and regulations. The organization also will develop each district division continuously based on industrial development, improvement of basic facilities and the stability of human development.

## 2.4 Objective

The main objectives of Pejabat Daerah dan Tanah Seberang Perai Tengah is to maintain and create effective leadership of the government and the people and co - ordination between government departments and other government agencies through the spirit of unity in the field of security, community development, goodwill, and other fields. Besides, to implement policies of the state government and the federal government through the cooperation of government departments and voluntary agencies-body and at the same time to start the plans to align the fund to administer the community development program at district level.

The next objective is to implement the land law in line with requirements of the National Land Code and the rules and policies prescribed by the state government. The organization also will seek for new revenue sources aside from maximizing revenue excerption from land sources and helps government departments and other government agency for public use of land.

## 2.5 Organizational Structure

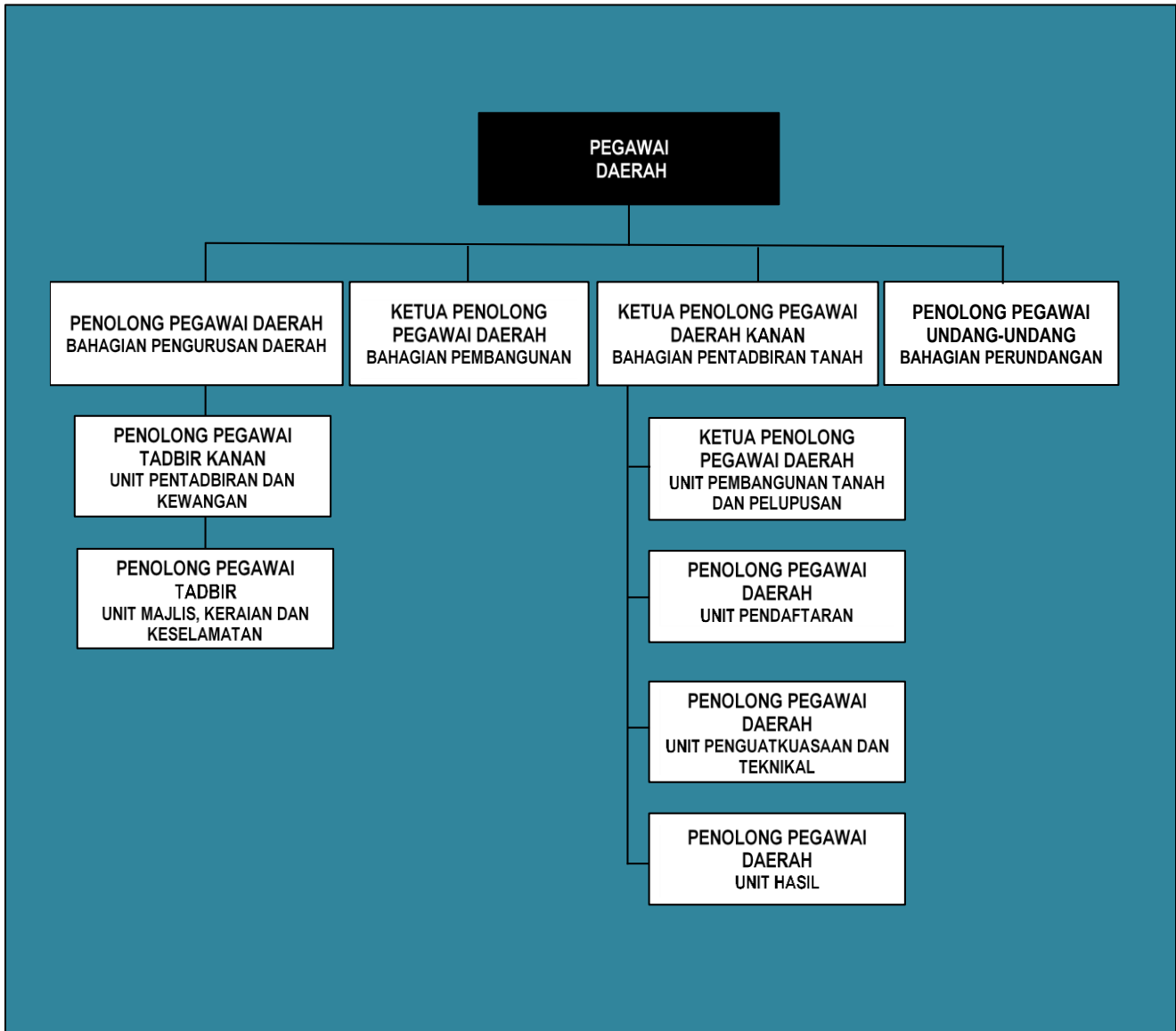


Figure 1: Organizational Structure of Pejabat Daerah dan Tanah Seberang Perai Tengah

Based on figure 1 Pejabat Daerah dan Tanah Seberang Perai Tengah is government organization that led by Encik Kamarul Haizal Bin Koderat as Chief Information Officer (CIO). The administration of the organization is also assisted by several heads of each division to make sure smooth operation of the organization. Every department is responsible to manage their task according to their jobs scope of each department.

## 2.6 Services

Pejabat Daerah dan Tanah Seberang Perai Tengah (PDTSPT) can be divided into three main departments, namely the Department of General Administration, Department of Land Management and Development Department.

The roles of Department of General Administration are to manage the Administration and Finance, and Entertainment Reception, Regional Security, and Management Department of Information Technology for the smooth implementation of the project of divisions and members of Pejabat Daerah dan Tanah Seberang Perai Tengah.

Next, Department of Land Management is responsible to manages all applications relating to the disposal and land development, harvesting the land and enforces the law of the land under the rules and laws of the land that is being adopted and to assist other government agencies to plan, implement and monitor the development of land in Seberang Perai Tengah.

Lastly, the roles of Development Department are designing, implementing, and monitoring projects and programs Physical Development and Community Development in Seberang Perai Tengah district so that harmony and well-being of society in Seberang Perai Tengah enhanced.



### 3.0 TRAINING'S REFLECTION

It is compulsory for student Bachelor of Business Administration (Hons) Finance in University Technology Mara (UITM) Perlis to undergo internship in order to complete their studies. The organization that I choose to undergo my internship is Pejabat Daerah dan Tanah Seberang Perai Tengah. The duration of my internship is six months starting on 1<sup>st</sup> March 2021 until 13<sup>th</sup> August 2021. Next, the working day of Pejabat Daerah dan Tanah Seberang Perai Tengah is on Monday to Friday starting from 8.00 a.m. to 5.00 p.m.

I have been placed in Department of Land Management which known as Unit Hasil. The daily task that assigned to me is to update the comparison of land tax collection between the current year and the previous year. The other jobs scope as intern in Unit Hasil are printing land tax bills, sorting land tax bills according to their lots number, preparing slides for meeting, preparing minutes meeting and memos, recording bills receipt and writing letter to owner of the land. Besides, I also need to handle phone calls answering questions related to land taxes such as online payment method, land tax arrears, checking land's account number and etc. Other than that, my supervisor assigned me to open file for nominal taxes task force which is a file that consist of lots number that been charged land tax for only RM1 to be investigated by site officer. In addition, I also have been given a special task to be emcee and secretariat at "Majlis Taklimat Petugas Pilihan Raya Umum ke-15" for Penang state organized by Election Commission of Malaysia (SPR) and Pejabat Daerah dan Tanah Seberang Perai Tengah. In addition, as a government organization that closed to publics, Pejabat Daerah dan Tanah Seberang Perai Tengah also will always take opportunity to celebrate special days such as Women's Day, Mother's Day, Father's Day, Hari Raya Aidilfitri celebration and many more.

Apart from that, I also received allowance of RM40 per day as intern and the allowance is just for the first three months only. I have gained a lots of precious experiences such as celebrating Women's Day with the staff and also publics, handling event "Majlis Taklimat Petugas Pilihan Raya Umum ke-15" for Penang state and "Program Pengagihan Bubur Lambuk" organize by Pejabat Daerah dan Tanah Seberang Perai Tengah. Furthermore, there are lots of skills that I have learned during my internship at the organization like communication skills. My communication skill improved better when often handle public call and always have communication with other staffs. Computer skill is one of the important skills nowadays and

with the skills that I have gain during my internship, it really helps me to complete my work easily. Lastly, I also feel so grateful to have officemates that are very friendly and helpful in everything which they will help each to complete given task or to overcome any issues and its teach me how teamwork is important in an organization.

## **4.0 ANALYSIS**

### **4.1 Literature Review**

The literature review is the documentation of the published work from secondary data sources in areas of particular interest to the researcher. Usually, the literature review is based on other researcher's previous studies and if the new researcher has already adopted the idea of the researcher, he or she must quote the idea taken from them in order to prevent any plagiarism done by the new researcher. Thus, in this chapter, this study will discuss on the literature review of the company's Productivity, labor force, technology, resources and physical infrastructure. In order to be consistent with previous findings, this study measure pertaining to the dependent variable and regarding factors affecting the company productivity that have been taken from reviewing in the previous studies.

#### **4.1.1 Productivity**

Productivity can be defined as the relationship between input and output of a production system. It is also defined as the level of efficiency in producing goods or services. Productivity gives an idea as to how to utilize resources in producing goods. According to Kengatharan, (2019) there is a positive relationship between productivity and firms' performance. Productivity also holds the key in identifying the valuable outputs and inputs, such as the efficiency and effectiveness of available resources, namely personnel, machinery, materials, capital, facilities, energy, and time to reach a very valuable output. Mariyono (2018) also had stated that the primary sources of Total Factor Productivity (TFP) growth were technological change and allocative efficiency effects.

#### **4.1.2 Labor Force**

Human capital can be defined as stock of knowledge, social and skills and personal qualities embodied in individuals that enable the creation of personal, economic well-being and social. Besides, human capital also is considered as an important element due to the fact that it can increases productivity and also ensures the long-term competitiveness of firms at a same time. According to Hussen, (2020) all typologies of human capital such as schooling, slack time and on-the-job training (OJT) have a significant and positive impact on firms' productivity. The

findings of the study further indicate that the highest payoff, in terms of increased productivity, is achieved when various typologies of human capital are used in combination, rather than in isolation, in the production process. The direct effects of human capital composition on productivity show that the higher the workers' educational level, the higher the productivity (Luna et al., 2020). There are also several authors that had been acknowledged the effect of human capital on firm-level productivity. They argued on whether highly educated individuals have higher ability to acquire and interpret information about other inputs.

#### 4.1.3 Technologies

Technology is a scientific knowledge that being for practical purpose to solve problems. There is discussion in previous research that stated the relationships between technological advancement levels and performance exists. There are also many research that examine a positive impact of CTs on improving overall productivity and organizational performance of a firm. The impact of adoption of convergent technologies on all the four dimensions such as task productivity, task innovation, customer satisfaction and management control positively influence organizational performance based on (Kumar et al., 2020). Additionally, (Hajli & Sims, 2015) also suggested that IT investment has high positive correlation with gross domestic product growth. According to (Singh & Sharma 2020) the level of IT capital influences the TFP of Indian industries, so does the level of skilled workers. The findings also suggest that intermediate capital goods, location and ownership type allow the strength of IT capital and that in turn boosts productivity. Moreover, there are signs show that the share of ICT-schooled employees significantly and positively relates to productivity, and also that this relationship is generally more persistent than that of ICT intensity of firms, measured as the proportion of broadband internet-enabled employees based on study by (Hagsten & Sabadash 2017).

#### 4.1.4 Resources

Resource refers to all the materials available in our environment which help to satisfy human needs and wants. There has been a growing literature on the misallocation of factors of production and their effects on Total Factor Productivity (TFP) and the output per capita. According to Nguyen (2020) TFP is found to 81.2% greater if there is no resource misallocation among firms.

#### 4.1.5 Physical infrastructure

Having good-quality infrastructure can smooth the production space at firm level and enhances the participation of firms in the global trading arena by lowering transaction or logistical. In fact, early studies using aggregate data shows that infrastructure such as water, electricity, telecommunications and roads were important drivers of economic growth. Total Factor Productivity (TFP), output and technical efficiency appear to be positively and largely affected by infrastructure according to (Sharma et al., 2010). Apart from that, (Wong & Yip, 2019) concluded that Institutions and transportation infrastructure positively influence gross domestic product per capita (GDPPC). Insufficient investments in infrastructure were one of the main causes of productivity slowdown. Moreover, (Azolibe & Okonkwo, 2020) also found that industrial sector productivity in Sub-Saharan Africa is at low level mainly due to their poor electricity and transport infrastructure and underutilization of water supply and sanitation infrastructure.

## 4.2 Research Methodology

In order to analyze relationship between the dependent variable and independent variables, the researcher will discuss on the method used for collecting data and the regression model. Data collection is one of the most important stages in conducting a research. There are two different methods of collecting data which are primary and secondary data. Primary data is real-time data while the secondary data is one which relates to the past. To study the productivity of Pejabat Daerah dan Tanah Seberang Perai Tengah, the information and data were collected from secondary data.

This research also is using quantitative data since all the data can be measured. This research is using yearly data from 1980 to year 2019 and the number of observations is 40. Next, the researcher has used World Bank Data, Bulletin Bank Negara and Pejabat Daerah dan Tanah Seberang Perai Tengah website to gather all the data and information needed in this study. The sources of information were obtained from the internet such as journal and articles. For example, the researcher has taken the data from Emerald Insight journals. The researcher then used the journals to come out with their own research. The support literature review from the chosen journal will produce a good research.

The objective of this paper is mainly to investigate the factors effecting productivity of Pejabat Daerah dan Tanah Seberang Perai Tengah. To analyze the findings, EViews 11 Software has been used. EViews 11 Software offers powerful statistical, forecasting, and modeling tools to academic researchers, cororations, government agencies, and students access through an innovative, easy-to-use interface. There are two variables in this research which are independent variable and dependent variable. Independent variable refers to variable that cause change to dependent variable. In this study, the independent variables that being used are human capital (labor force), technology (fixed telephone subscription), resources (income) and physical infrastructure (railways). While dependent variable refers to variable that being tested and measure. In this study the dependent variable that being used is productivity proxy gross domestic product.

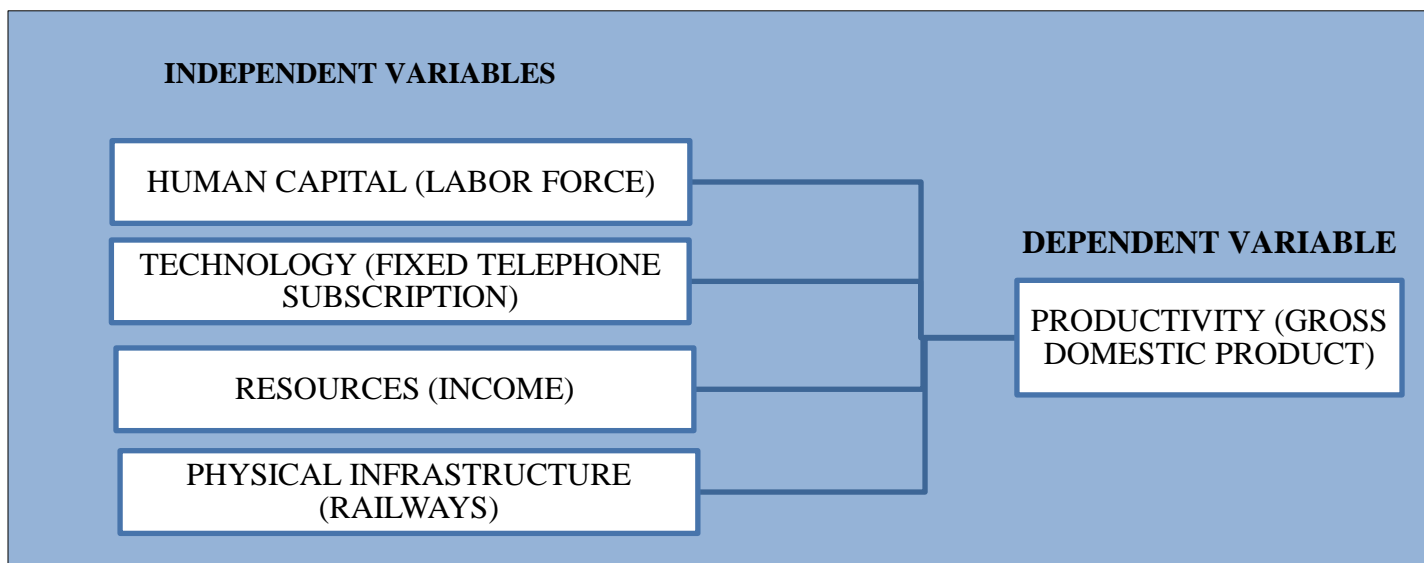


Figure 2: Proposed Research Framework

Table 1: Variables and symbols

Variables	Proxy	Symbol
<b>Productivity</b>	Gross Domestic Product (current US\$)	GDP
<b>Human Capital</b>	Labor Force (male population age 15+)	LF
<b>Technology</b>	Fixed Telephone Subscription (units)	FTS
<b>Resources</b>	Income (Bop, current US\$)	REC
<b>Physical Infrastructure</b>	Railways (million ton-km)	INS

The econometric model for this research as following:

$$\text{LnGDP} = \beta_0 + \beta_1\text{LLF} + \beta_2\text{LFTS} + \beta_3\text{LREC} + \beta_4\text{LINS} + \varepsilon$$

Where:

LGDP	Log of Gross domestic product (current US\$)
LLF	Log of Labor force (male population age 15+)
LFTS	Flog of Fixed telephone subscription (units)
LREC	Log of Resources (Bop, current US\$)
LINS	Log of Physical infrastructure (million ton-km)
$\varepsilon$	Error terms
$\beta_1$ to $\beta_4$	Estimated coefficients of the independent variables



### 4.3 Data Analysis

Table 2: Regression result for the impact of labor force on productivity

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-15.04443	0.526046	-28.59906	0.0000
LLF	2.232835	0.328565	6.795720	0.0000
LFTS	0.051012	0.048372	1.054574	0.2988
LREC	0.388510	0.093819	4.141050	0.0002
LINS	-0.184422	0.091791	-2.009152	0.0523
R-squared	0.992781	Mean dependent var		12.68526
Adjusted R-squared	0.991956	S.D. dependent var		1.039116
S.E of regression	0.093194	Akaike info criterion		-1.791801
Sum squared resid	0.303978	Schwarz criterion		-1.580691
Log likelihood	40.83602	Hannan-Quinn criter.		-1.715470
F-statistic	1203.404	Durbin-Watson stat		0.452784
Prob(F-statistic)	0.000000			

The result for the regression analysis is as follows:

$$\text{LnGDP} = \beta_0 + \beta_1\text{LF} + \beta_2\text{FTS} + \beta_3\text{REC} + \beta_4\text{INS} + \varepsilon$$

$$\text{LnGDP} = -15.04443 + 2.23\text{LnLLF} + 0.05\text{LnLFTS} + 0.39\text{LnLREC} - 0.18\text{LnLINS}$$

t-stat	(-28.59)	(6.80)	(1.05)	(4.14)	(-2.009)
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S.E	[0.53]	[0.33]	[0.05]	[0.09]	[0.09]
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#### 4.4 Findings

The findings revealed that human capital (labor force), technology (fixed telephone subscription) and resources (income) are statistically significant in affecting productivity (gross domestic product).

From the output, it shows that coefficient of labor force is 2.232835. This value means that there is a positive relationship between human capital (labor force) and productivity (gross domestic product) with the implication that every 1% increase in human capital (labor force) is predicted to be accompanied by 2.232835% increase in productivity (gross domestic product). The table also shows a significant result between human capital (labor force) and productivity (gross domestic product) which indicated by t-statistics by 6.795720. Human capital is very importance in an organization in order to make operation become smooth and efficient. Thus, hiring or recruiting more labor force will help an organization become more productive.

Besides, technology which proxy by fixed telephone subscription shows coefficient of 0.051012. It means that every 1% increase in technology (fixed telephone subscription) will increase productivity (gross domestic product) only by 0.051012%. The table also shows insignificant result between technology (fixed telephone subscription) and productivity (gross domestic product) which indicated by t-statistics by 1.054574. This is because although technology is important nowadays in making work become easy and save time, but firms still need human to run or make the technology work. Productivity can be improved when humans and technology work together.

Next, the coefficient for resources (income) is 0.388510 which means that there is a positive relationship between resources (income) and productivity (gross domestic product) with the implication that every 1% increase in resources (income) is predicted to be accompanied by 0.388510% increase in productivity (gross domestic product). The result also shows a significant result between resources (income) and productivity (gross domestic product) which indicated by t-statistics by 4.141050. This means that resources play an important role in an organization because it indicates how well the organizations utilizing their resources to make profit.

Based on the result, the coefficient of physical infrastructure (railways) is -0.184422. This value means that there is negative relationship between physical infrastructure (railways) and productivity (gross domestic product). For every 1% increase in physical infrastructure (railways) will lead to decrease in productivity (gross domestic product) by 0.184422%. The result indicates negative relationship because physical infrastructures are underused in Malaysia due to most of the companies nowadays practicing internet bases work or work from home. T-statistics also give a reading of -2.009152. Although there is negative relationship between physical infrastructure (railways) and productivity (gross domestic product), however the table shows a significant result which indicates by p-value of 0.052.

However, the result for adjusted R-Squared is 0.9919. It indicated that 99.19% of the variation in dependent variable can be explained by three of the independent variables that are human capital (labor force), resources (income) and physical infrastructure (railways) in the model. The remaining 0.81% is due to omission of other important independent variables.

## **5.0 DISCUSSION AND RECOMMENDATION**

### 5.1 Discussion

Summing up, the purpose of this study is to determine factors that affect productivity. The period of this research study is completely relevant since most of the organization's productivity shows some improvements from year to year which leads the researcher to examine the sustainability and stability achieved by the organization. It can be seen from the results made by the analysis, that this research managed to achieve its objective as supported by the literature review.

Next, the dependent variable that has been measured in this research is productivity which is proxied by gross domestic product. While the independent variables that have been used in this study are human capital which is proxied by labor force, technology which is proxied by fixed telephone subscription, resources which are proxied by income and lastly physical infrastructure which is proxied by number of railways.

Moreover, the significant relationship between independent variables and dependent variables is considered to be important. The findings revealed that human capital (labor force), resources (income) and physical infrastructure (railways) are statistically significant in affecting productivity (gross domestic product).

## 5.2 Recommendation

There are several recommendations that can be highlight based on the study that had been conducted in order to improve the performance of Pejabat Daerah dan Tanah Seberang Perai Tengah regarding to their productivity. According to Kengatharan, (2019) there is a positive relationship between productivity and firms' performance. Productivity of the organization can be based on numerous parts including their human capital, technology, resources and physical infrastructure.

Pejabat Daerah dan Tanah Seberang Perai Tengah should focus on three macroeconomic variables. Firstly, it is suggested that the organization need to have good human capital management in order to make sure smooth operation of the organization. By hiring more workers or sending their staffs to training will help an organization become more productive. It is in line with previous study by Hussen (2020) that indicate all typologies of human capital such as schooling, slack time and on-the-job training (OJT) have a significant and positive impact on firms' productivity. The direct effects of human capital composition on productivity also show that the higher the workers' educational level, the higher the productivity (Luna et al., 2020).

Secondly, Pejabat Daerah dan Tanah Seberang Perai Tengah also needs to focus on their resources which are their collection on tax revenue and non-tax revenue that being handle by the organization. An optimum utilization of their resources can contribute to the productivity and performance of their operation. It is also in line with study by Nguyen (2020) that stated TFP is found to 81.2% greater if there is no resource misallocation among firms.

Thirdly, the organization should also consider for building more physical infrastructure that seem important for growth of an organization and thus will help the organization's productivity. This is also in line with the previous study that stated Total Factor Productivity (TFP), output and technical efficiency appear to be positively and largely affected by infrastructure (Sharma et al., 2010). By adding more office rooms for their worker will give a comfortable working condition to the workers and it is also in conjunction with the previous suggestion to hire more workers in order to help the organization become more productive.

Wong & Yip (2019) also concluded that Institutions and transportation infrastructure positively influence gross domestic product per capita (GDPPC).

## 6.0 CONCLUSION

In summary, requirement that been set up by University of Technology Mara (UITM) for student Bachelor of Business Administration (Hons) Finance to undergo industrial training is very good in exposing their students to the nature of work. This may help students to prepare themselves with sufficient skills and knowledge that needed in our current industry.

I had chosen Pejabat Daerah dan Tanah Seberang Perai Tengah to undergo my industrial training. By undergo internship at the organization, I had gained a lot of valuable experiences, skills, and knowledges that I could not seek at other places. I was exposed to the management of land and districts that been controlled by Pejabat Daerah dan Tanah Seberang Perai Tengah in district of Seberang Perai Tengah. Besides, I also had conducting a research on the impact of The Impact Of Labor Force On Productivity: A Case Study Of Pejabat Daerah Dan Tanah Seberang Perai Tengah. In order to analyze factor that affecting productivity of the organization, dependent variable and some independent variables has been used to measure the productivity. The model used to analyze the finding of this research is regression model.

Apart from that, the dependent variable that been used in this research is productivity which proxy by gross domestic product. While the independent that been used in this study is human capital which proxy by labor force, technology which proxy by fixed telephone subscription, resources which proxy by income and lastly physical infrastructure which proxy by number railways.

Based on the findings, we can conclude that there are three variables that statistically significant in affecting productivity which are human capital, resources, and physical infrastructure. In other word, in order to increase productivity of Pejabat Daerah Dan Tanah Seberang Perai Tengah, the organization needs to have a looks on their human capital management, focus on their resources and utilize it at an optimum level and last but not least to consider for building more physical infrastructure.

Lastly, I hope that Pejabat Daerah Dan Tanah Seberang Perai Tengah can improved their productivity by considering all the recommendations that been suggested and achieve their objectives that been set up. The organization also can maximize their level of productivity by taking advantages of their strength and eliminating their weaknesses.

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## APPENDICES



Figure 3: Pejabat Daerah Dan Tanah Seberang Perai Tengah



Figure 4: Staffs Department of Land Management (Unit Hasil)



Figure 5: Emcee at “Majlis Taklimat Petugas Pilihan Raya Umum ke-15” for Penang state



Figure 6: Daily Task (updating task force land tax collection)

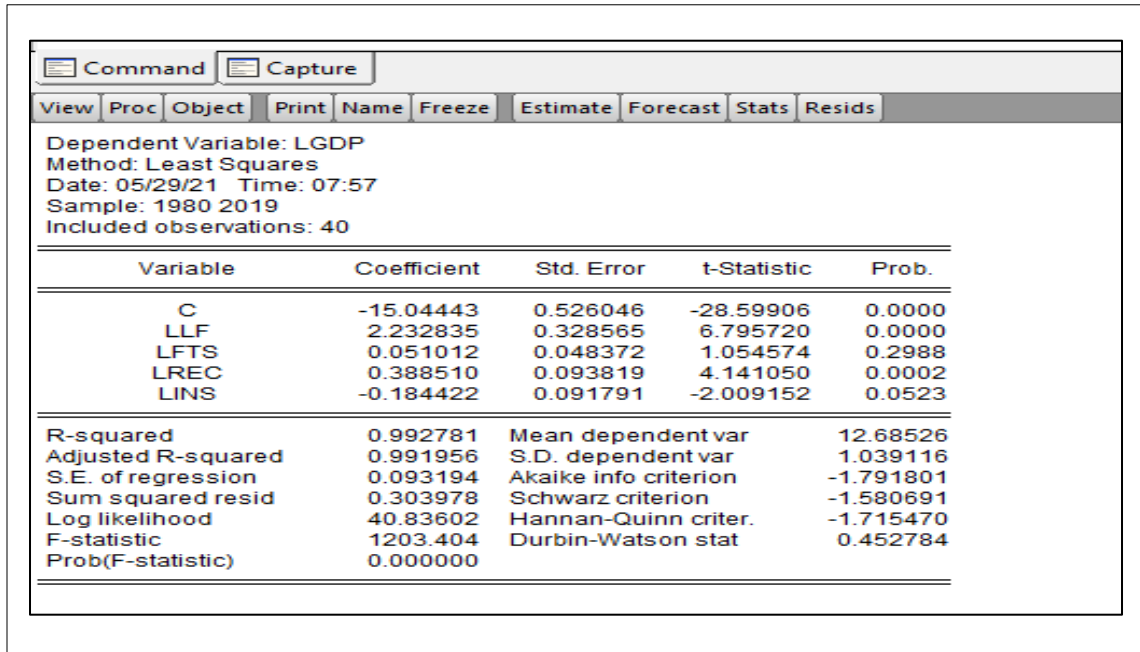


Figure 7: Regression result

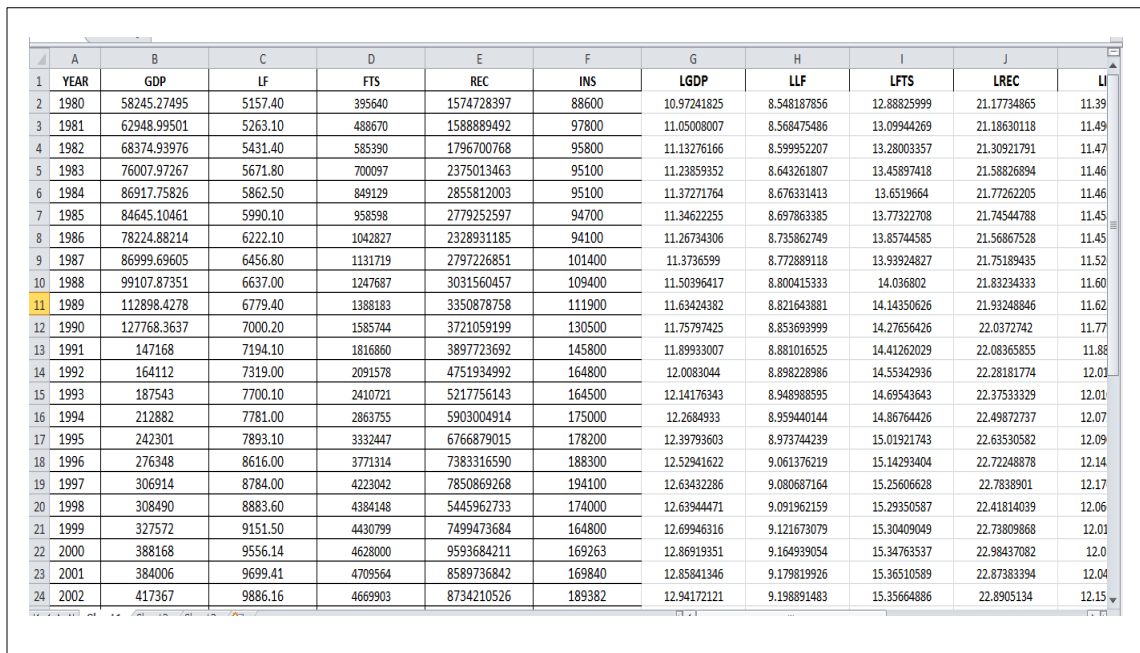


Figure 8: List of Data