

Actors' Readiness Level in Industrial Revolution towards Competitiveness using Canonical Analysis

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Abstract: This paper is aimed to analyze the readiness level in industrial with a case study: Medan Actors of Industrial. The problem in this research is to analyze the elements of its aspect in getting the innovation. The data used is primary data that have been obtained through 50 ones. Canonical Analysis is used to measure which core variable indicated. From the results of this study that the market education for technology as well as regular coaching that will make the industry more competitive in industrial revolution.

1 INTRODUCTION

Medan has the economic growth by 5.92% in 2018. The three business fields that gave a dominant role to the GRDP namely large and retail trade and repair of cars and motorbikes at 24.96%, construction at 19.32%, and processing industries at 14.61%. For the industry as the MSMEs actors become popular in making the forum to empower the business (<https://medankota.bps.go.id>, 2017)

MSMEs gets the progress in mindset training is giving the empowerment, then the best mark attitudes can create the get the result in private sector in the financial technology to run the sustainable effort (Syarifah & Putra, 2017).

Medan had many business actors to make the business progress for making the creativity in improving it. It had made the gathering to make the best result for its economic growth that combined the business one to make the good business education in running the best one.

Business education can make the good midset and research culture. It has made the newest idea to make the best result in economic step and get many results for civilizations. The community will be got into the qualified product with the best one (Bati, *et al*, 2018).

As the good strategy in business development, it make the local area power. It will be make only to consume but also earn the product on the hobby ability. They will get its best ability in technology in getting the youngsteers.

A good empowerment in getting in the young generation will make the best innovation. It will present with the solution in social media such as instgram, facebook that can result them in the selling performance for the financial strength (Malawat & Putra, 2019).

Based on data explained with the business in Sumatera Utara, researchers focus in making the the research the gapura digital community which implemented the its community for the best result in empowering with the title "Actors' Readiness Level In Industrial Revolution Towards Competitiveness Using Canonical Analysis". The main issues that will be analyzed are the extent to which the Gapura Digital Medan Program to create business development or income for its MSMEs member through instgram, facebook and twitter as the e-commerce approuacment.

2 LITERATURE REVIEW

2.1 E-Commerce Approach

The level of risk of work in the MSMEs is greater than other industries which require employees to have a high focus of their safety and need to make their own stategy in business (Siagian & Putra, 2019).

The growth of MSMEs in the past monetary crisis, has no effect of large ones especially about exports focus. They get difficulty in competing in reasonable economic conditions. It can be seen from 2007 to 2011 although there is an increase of export

amount is less result, They are important to face the business level of the development in facing the globalization era (Dilham & Putra, 2017).

Business ethics is necessary in getting many customers. They will give the business result to as the need for a best based on Research and Development (R & D) program continuously so that it can develop well in running the community (Wahyuni & Putra, 2017).

There is a probability for human capital has a significant factor to make the best target in corporation. It is important to map the feasibility study in order to be suitable in making their business impact (Malawat & Putra, 2018).

2.2 Business Development

Realizing the best target of the company that can be connected with the local people who later also improved to the location prosperity. The main focus is to make the MSMEs elements to improve the process of community approachment (Putra & Ami, 2017).

It can improve a social economic condition that can empower the region strength. With the information obtained programmatically, that some things for socioeconomic mapping has decision-programmed with the structure of society (Dilham & Putra, 2016).

The creative business start ups are necessary in making the best capacity in making the economic growth. The action in mapping the research and development (R&D) about creating the new product, will improve the employment productivity during the best movement the newest firms in the local area (Stam & Wennberg, 2009).

A strategy for making the best workforce to drive best target for the corporates has become a best activity. Firms will make the breakthrough approachment. Human capital feasibility mapping programmes not only getting the best business targets but the best result for the sustainable action (Maran, et al, 2009).

3 METHOD

This research happened in Medan City by using the population from Gapura Digital business forum who have the willingness to conduct it for Revolution Industry by purposive sampling of 50 samples conducted from January to April 2019 based on the activity made. For data analysis techniques requires understanding of linear combinations are called

canonical variables because the dependent variables are more than one and require understanding the correlation value is called a canonical correlation.

The assumptions in Canonical Correlation, such as :

- There is a linear relationship and correlation between the dependent ones to the independent ones.
- The need for multivariate normality to test the significance of every canonical function.
- There is no multicollinearity between the members of the dependent variable group against the independent variables.

The variables taken are

- Independent variables represents instagram, facebook, twitter
- The dependent variable is a value depends on the change in the value of business development and income
- The Pattern shows

$$\begin{matrix} \text{Business} & & & = & \text{Instagram} & + \\ \text{Development} & & + & & \text{Facebook} \\ \text{Income} & & & & + & \text{Twitter} \end{matrix}$$

Metric

Metric

4 RESULTS AND DISCUSSION

4.1 Descriptive Analysis

Gapura Digital Medan has the Program that supports MSMEs to advance business through digital. There is a complete range of topics ranging from digital trends, building business portals to SEO / SEM. We can choose the desired topic or follow all the classes to get a certificate from Google. There are free classes that we can take with various topics to get to know more about how to build a business digitally. These classes are divided into three categories from digital ready, digital reliable and digital professional. List the class in the city we want (<https://gapuradigital.withgoogle.com/workshops/medan>, 2019)

4.2 Quantitative Analysis through Canonical Analysis

Because there are two dependent ones and three independent ones, then if the smallest number is taken the smallest one. Thus, two Canonical Functions will be formed, namely:

Eigenvalues and Canonical Correlations

Root No.	Eigenvalue	Pct.	Cum. Pct.	Canon Cor.
1	4.40602	99.23085	99.23085	.90279
2	.03415	.76915	100.00000	.18172

Dimension Reduction Analysis

Roots	L. F	Hypoth. DF	Error DF	DF	Sig. of F
1 TO 2	.17887	20.46680	6.00	90.00	.000
2 TO 2	.96698	.78549	2.00	46.00	.462

Two Canonical Functions are seen in the Root No section, with canonical correlation numbers (Canon Cor) for Function 1 is 0.90279 and Function 2 is 0.18172. It has been seen in the Sig. of F which tests the significance of Canonical Function, seen for function 1 is significant number 0,000, while for function 2 is significant number is 0.462.

From these results, They can be seen that the significant number function 1 is more than 0.05, function 1 is significant individually and can be processed next. For function 2, the input number is less than 0.05 then function 2 is not able to be processed further individually.

Multivariate Tests of Significance (S=2, M=0, N=21 1/2)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.84804	11.28807	6.00	92.00	.000
Hotellings	4.44017	32.56123	6.00	88.00	.000
Wilks	.17887	20.46680	6.00	90.00	.000
Roys	.81502				

Note.. F statistic for WILKS' Lambda is exact.

If they are tested together with the test name: Pillais, Hotellings and Wilks for the Sig. of F for all three procedures all under 0.05, namely 0.00, 0.00 and 0.00. Thus, the canonical function 1 and canonical function 2 are significant and can be processed further. There is a difference between individual and collective testing. It can be seen in the figures of Canonical Correlation that have Eigenvalues and their tables, with numbers:

1. Canonical Correlation function 1 is 0.90279
2. Canonical Correlation function 2 is 0.18172

With a limit of 0.5 for the two-variable correlation strengths, function 2 has a low canonical correlation, so that it can be issued for further analysis. Thus, only function 1 will be analyzed further, because besides being individually and jointly significant, it also has a high canonical correlation rate.

4.3 Canonical Variates Interpretation

Canonical variates is a collection of several ones that make up a variat. In this case there are 3 canonical variates namely dependent variate namely Business Development and Operating Income. Then, They have for the independent ones such as instgram, facebook and twitter. They can be measured in two ways:

1. Canonical Wights

For Dependent Variates:

standardized canonical coefficients for dependent variables function no.

Variable	1	2
business_dev	.69408	-3.42658
income	.31501	3.48195

For Independen ones

Raw canonical coefficients for COVARIATES Function No.

COVARIATE	1	2
instagram	.27050	1.07419
facebook	.05668	-1.34604
twitter	.09553	.12639

Standardized canonical coefficients for COVARIATES CAN. VAR.

COVARIATE	1	2
instagram	.66036	2.62235
facebook	.12731	-3.02344
twitter	.22448	.29699

Regardless of function 2 (the second column of numbers), we can see a row of correlation numbers between each variable. Two correlation numbers are the same high, because above 0.5 that is 0.69408 and 0.31501. The independent ones (covariates), correlation numbers above 0.5 are only X1, namely instagram.

2. Canonical Loadings

For dependent variates:

Standardized discriminant function coefficients Function No.

Variable	1
business_dev	1.47354
income	-.70392

For Independent Variabel

Correlations between COVARIATES and canonical variables CAN. VAR.

Covariate	1	2
instagram	.99604	.06547
facebook	.96018	-.27743
twitter	.98009	-.03526

Not paying attention to function 2 (second digit column), we can see a number of canonical loadings between each variable with a function. For dependent variables, a number of canonical loadings is business development as well as for the independent one, the correlation number above 0.5 is suitable for all such as instagram, facebook and twitter.

4.4 Discussion

From the output of canonical weight or canonical loading, we can analyze that:

1. There is a significant relationship between dependent variables with independent variates or Business Development. The main focus is to make the Gapura Digital Medan elements to improve with the information obtained programmatically. The creative business forums are necessary in making the best capacity. They will make the breakthrough approachment for their developments. The idea is suitable for (Putra & Ami, 2017), (Dilham & Putra, 2016), (Stam & Wennberg, 2009), (Maran, et al, 2009).

2. The 3 independent tend to the most closely related among instagram, facebook and twitter. A positive sign on indicates that the young entepenerus in Gapura Digital-assisted companies are getting good e-commerce approach in the opinion of (Siagian & Putra, 2019), (Dilham & Putra, 2017), (Wahyuni & Putra, 2017), (Malawat & Putra, 2018)

5 CONCLUSIONS

It can be decided that :

1. Gapura Digital Medan is MSMEs - assisted which has the newset idea for e-commerce innovation in coaching.
2. It will make the industry more competitive in industrial revolution for the business development as the result in canonical analysis
3. The variables such as instagram facebook and twitter will make the signicant factor for increasing the readiness in industrial revolution 4.0

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