

INDUSTRY PREPARATION IN CEPER KLATEN ON SOCIETY 5.0

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Abstract: Based on observations of the Industry in Ceper Klaten, several industries still apply manual systems in their work. This also relates to the human resources and technology they have. This is contrary to the demands of the times, which are all digital and automatic. Research on the readiness of Society 5.0 employees as a means of campaigning employees about existing technological developments. This method is limited to the definition of a sample survey which aims to test the previously formulated hypotheses (testing research). The results of this test indicate that overall all analyzed pathways have a significant relationship, as seen from the probability level (P) less than 0.05. This significant relationship is also supported by Understanding CR > 1.96 in all analyzed pathways.

Keywords: Industry in Ceper, society 5.0

1. Introduction

The description of the research object is intended to determine the characteristics of the object under study. This study took samples of employees in the Metal Casting Industry, namely, PT Koperasi Batur Jaya and PT Aneka Adhi Logam.

The research procedure in this study is to distribute questionnaires to employees and direct interviews. The distribution of questionnaires was carried out during the morning briefing so that it did not interfere with company activities. A total of 100 questionnaires were distributed and filled out by correspondents who met the criteria.

Respondents who are the sample in this study must have the following characteristics:

- Industrial Employees Pt. Koperasi Batur Jaya and Pt. Various Metal Adhi
- Each respondent only had one chance to fill out the questionnaire.
- Each respondent is free to accept or reject the survey, and there are no kinship ties, intimidation, or gifts of any kind that can reduce the degree of confidence in the quality of the data obtained.

2. Basic theory

State of the Art

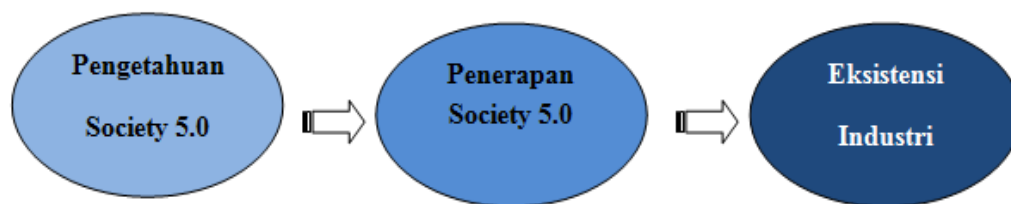
Society 5.0 describes the 5th form of society in human history, following chronologically, the hunting society (Society 1.0), the agricultural society (Society 2.0), the industrial society (Society 3.0), and the information society (Society 4.0). The fourth Industrial Revolution created new services and values one after another, leading to a richer life for all. Meanwhile, for developing countries including Indonesia, Society 5.0 still sounds foreign because Industry 4.0, which was popularized by Germany with the concept of digital transformation from industrial markets with a smart manufacturing system as the center, is still being implemented. (Ozgur, 2018). Among the various challenges currently facing the world, now

the world is entering an era of technological disruption (Industry 4.0 and Society 5.0), marked by the emergence of big data, the internet of things (IoT), clouds, artificial intelligence functions in technology that is increasingly smart to compete with humans (Abreu, 2018).

3. Research methodology

Testing

Figure 1. Testing



The research method is needed in the implementation of a study because it can direct and serve as a guide in research activities so that by using the right method, the research objectives can be achieved. The method used in this research is the Explanatory Survey Method. The explanatory survey method is a survey research method that aims to test hypotheses by basing it on observations of the effects that occur and looking for possible factors through certain data (Rusidi, 1992). This method is limited to the definition of a sample survey which aims to test the previously formulated hypothesis (testing research). Although the descriptions also contain descriptions, as relational research the focus lies on explaining the relationships between variables. According to Sanapiah (2007: 18) explains that explanatory research is a study that is intended to find and develop a theory, so that the results or research products can explain why or why (what antecedent variables affect) the occurrence of certain symptoms or social statements.

Characteristics of Respondents Based on Gender

Table 1. Respondent Gender

Gender	Number of Respondents	Percentage
Male	65	65%
Female	35	35%
Total	100	100%

Table 1 shows that the largest number of employee respondents are male, as many as 65 people (65%), while female respondents are 35 people (35%) with a total of 100 respondents. So it can be concluded that the sample in this study was dominated by men. With the results of field observations that workers who fill out the questionnaire are foundry workshop workers.

Characteristics of Respondents by Age

The general description of employees by age group can be tabulated as follows:

Table 2. Number of Respondents by Age Group

Age	Amount	Percentage
15-20 years	11	11%
21-25 years	14	14%
26-30 years	20	20%
31 - 35 Years	22	22%
36 - 40 Years	20	20%
≥ 41 years	10	10%
amount	100	100%

So it can be concluded that the largest number of respondent users are employees at the age of 31 - 35 years with a percentage of (22%) with a total of 22 respondents on a total scale of 100 respondents.

Characteristics of Respondents Based on Education Level

The general description of employees based on the latest level of education taken can be tabulated as follows.

Table 3. Number of Respondents by Education Level

Last education	Amount	Percentage
High school	76	76%
Diploma (D1 / D2 / D3)	12	12%
Bachelor / S1 / D4	12	12%
Master / S2	-	-
Other	-	-
Amount	100	100%

Table 3 shows that the education level of the employees of PT Koperasi Batur Jaya and PT. Aneka Adhi Logam who was the respondent of this study had a Bachelor / S1 / D4 graduate with a percentage of (12%) and a total of 12 respondents. While for Diploma graduates (D1 / D2 / D3) as many as (12%) or as many as 12 respondents. Then for the largest number of respondents were graduates from high school level (76%) with 76 respondents.

Research Instrument Test

The research instrument test was carried out by conducting trials on employees to fill out questionnaires, then after being accepted back from the employees, the researchers tabulated the excel program and tested the validity and reliability with the help of SPSS software.

Research requires data that is valid and reliable. In the context of this urgency, the questionnaire before being used as primary research data is first tested on the research trial sample. This trial was conducted to obtain evidence of the accuracy and accuracy of the measuring instrument in performing its measuring function.

The results of the validity and reliability tests can be seen as follows:

a. Validity Test

The validity test is intended to measure the extent to which the variables used to measure what should be measured. A good instrument is a valid instrument. It is said to be valid if it can measure what you want to measure, the one with high validity will be able to have a small error variant. So that the data collected is data that can be said to be valid. This validity test is carried out using the Pearson correlation product-moment, namely by calculating the correlation between the scores of each question item with the total score (Ghozali, 2006). The criteria used are valid or invalid if the correlation between the scores of each question item with the total score has a significant level above 0.50.

Table 4. Results of Factor Analysis
Rotated Component Matrix a

	Component			
	1	2	3	4
NP1	.827			
NP2	.796			
NP3	.814			
NP4	.818			
NP5	.846			
KP1		.702		
KP2		.800		
KP3		.839		
KP4		.828		
KP5		.769		
KPT1			.685	
KPT2			.668	
KPT3			.773	
KPT4			.772	
PPT5			.641	
TP1				.748
TP2				.701
TP3				.688
TP4				.605
TP5				.625

By looking at the results of the Rotated Component Matrix Analysis Factor, it can be seen that all variables including NP (Value of Understanding), KP (Quality of Understanding), KPT (Employee Satisfaction), and TP (Level of Improvement) have a significant factor loading which is above 0, 50. Thus it can be proven that the five variables with five questions on each of the variables are categorized as valid and this research deserves to be continued.

b. Reliability

Reliability test is useful for determining whether the instrument in this case the questionnaire can be used more than once, at least by the same respondent will produce consistent data. In other words, instrument reliability characterizes the level of consistency. Now (2006) states that a research instrument indicates adequate reliability if the Cronbach alpha coefficient is greater or equal to 0.70.

Reliability testing uses the help of the SPSS program with the following results:

Table 5. Reliability Test Results

Variable	Alpha Chornbach	Criteria	Information
Value of Understanding	0.780	Alpha Cronbach $\geq 0,70$ then reliable	Reliable
Quality of Understanding	0.894		Reliable
Employee Satisfaction	0.867		Reliable
Increased Level of Quality Improvement	0.780		Reliable

The reliability test results show that the Cronbach Alpha coefficient (r) of all variables is greater than the required criteria (0.70). Each variable is 0.780 for the Society's Understanding Score of 5.0, 0.894 for the Quality of Understanding, 0.867 for Employee Satisfaction, and 0.780 for the Level of Quality Improvement.

All variables have a high consistency ability so that this research deserves to be continued.

Analysis of Structural Equation Modeling (SEM)**a. Sample Adequacy Test**

The number of respondents in this study was 130 respondents. This number is understood to meet the criteria because the minimum number of samples for research that uses the statistical tool Structural Equation Modeling (SEM) is 5-0 observations for each estimated parameter (Ferdinand, 2002). The number of parameters used in this study is 20 pieces so that the recommended minimum number of samples is $20 \times 5 (10) = 100$ (200)

So that the sample size is 100 respondents in this study, it has met the minimum requirements in statistical testing.

b. Data Normality Assumptions

Requirements that must be met in addition to sample adequacy in using SEM analysis is data normality. Comprehension of statistics to test for normality using Critical Ratio or CR on Amos output from understanding Skewness and Kurtosis of data distribution. The complete results of the normality test can be seen in the following table:

Table 6. Normality Test Results

Variable	min	Max	skew	cr	kurtosis	cr
NP1	2,000	5,000	-, 310	-1,265	, 054	, 111
NP2	2,000	5,000	-, 233	-, 952	, 053	, 108
NP3	3,000	5,000	, 182	, 742	-, 688	-1,405
NP4	2,000	5,000	-, 100	-, 409	-, 314	-, 640

Variable	min	Max	skew	cr	kurtosis	cr
NP5	2,000	5,000	-, 298	-1,216	, 902	1,840
KP1	2,000	5,000	-, 673	-2,746	1,019	2,080
KP2	2,000	5,000	-, 014	-, 058	-, 391	-, 798
KP3	2,000	5,000	-, 411	-1,679	, 399	, 814
KP4	2,000	5,000	-, 261	-1,065	, 570	1,163
KP5	2,000	5,000	-, 360	-1,470	-, 468	-, 956
KPT1	2,000	5,000	-, 164	-, 671	-, 502	-1,025
KPT2	1,000	5,000	-, 379	-1,546	, 378	, 772
KPT3	1,000	5,000	-, 698	-2,850	, 418	, 852
KPT4	1,000	5,000	-, 239	-, 977	-, 500	-1,020
PPT5	2,000	5,000	-, 075	-, 307	-, 783	-1,598
TP1	1,000	5,000	-, 314	-1,284	-, 253	-, 516
TP2	1,000	5,000	-, 134	-, 545	-, 165	-, 336
TP3	1,000	5,000	-, 244	-, 998	, 136	, 278
TP4	2,000	5,000	, 030	, 121	-, 455	-, 929
TP5	1,000	5,000	-, 377	-1,541	-, 458	-, 934
Multivariate					3,070	,518

Data normality test with univariate and multivariate normality, namely analyzing the level of normality of the data used in this study. Univariate sees the CR Comprehension on Skewness expected to be around ± 2.58 . If there is an understanding from outside this number it can be tolerated if the Multivariate Understanding is still around ± 2.58 .

From the table above, it can be seen the results of the normality test of the data in this study. Univariate for the Insights in C.r skewness, all items were in the ± 2.58 range. thus univariate data is normally distributed. The multivariate understanding listed in the table above shows the number 0.518 and is still in the ± 2.58 range so that it can be interpreted that the data is relatively normally distributed.

c. The Outliers' assumption

Evaluation of the multivariate outliers is necessary because although the analyzed data show no outliers at the univariate level, these observations can become outliers when combined. The Mahalanobis distance for each observation can be calculated and will show the distance of an observation from the average of all variables in a multidimensional space.

To calculate the Mahalanobis distance based on the chi-square understanding of the degree of freedom of 20 (indicator) at the level of $p < 0.001$, it is $\chi^2(20, 0.001) = 45.31475$ (based on the χ^2 distribution table). It is said to be outlier-free if the Mahalanobis distance is below 45.31475. From the results of data processing, it can be seen that the maximum Mahalanobis distance is 37,247 taken from the 22nd Observation number. So in this analysis, there were no multivariate outliers, so data exclusion was not required.

These results indicate that the model used is acceptable. X^2 Chi-square statistic, where the model is considered good or satisfactory if the understanding of the chi-square is low. The smaller Comprehension X^2 the better the model is and accepted. In this study, the cut of the

value of the chi-square was 194, 8825426 with a smaller analysis result of 172.389 coupled with a significant probability result of 0.311 with a cut of value ≥ 0.05 indicating that the results of this analysis were very good and in line with expectations.

The *goodness of Fit Index* (GFI) shows the overall model fit rate calculated from the squared residuals of the predicted model versus the actual data. An understanding that is close to 1 implies that the model being tested has a good fit. With the recommended level of acceptance ≥ 0.90 , it can be concluded that this research model has a marginal level of conformity with understanding approaching the criteria, namely 0.857.

Adjusted Goodness of Fit Index (AGFI) is the GFI which is adjusted to the ratio between the degree of frequency of the proposed model and the degree of frequency of the null model. AGFI's understanding of this model is 0.817, indicating that the model has a marginal fit.

Marginal understanding is the condition of the measurement model's suitability under the absolute fit and incremental fit size criteria, but it can still be continued in further analysis because it is close to the good fit criteria (Seguro, 2008 in Fitriyana et al, 2013).

Table 7. Model Evaluation

<i>Goodness- of - fit index</i>	Cut-of value	Analysis Results	Model Evaluation
<i>Chi-square</i>	Expected small (smaller than 194.8825426)	172,389	Good
<i>Significant probability</i>	≥ 0.05	0.311	Good
GFI	≥ 0.90	0.857	Marginal
AGFI	≥ 0.90	0.817	Marginal
CMIN / DF	≤ 2.0	1,051	Good
TLI	≥ 0.95	0.987	Good
CFI	≥ 0.95	0.989	Good
RMSEA	≤ 0.08	0.023	Good

Normed Chi-square (CMIN / DF) is a measure obtained from Understanding Chi-Square divided by the degree of freedom. This index is a model parsimony suitability index with the number of estimated coefficients expected to achieve the level of conformity. The understanding of CMIN / DF in this model is 1.051 indicating that this research model is good seeing the cut-off value $\leq$ of 2.0.

The Tucker Lewis Index (TLI) is an incremental suitability index that compares the tested model with the baseline model. The TLI is an index of model fit that is less influenced by sample size. Understanding recommended ≥ 0.95 . It can be concluded that the proposed model has a good level of conformity with a TLI understanding of 0.987.

Comparative Fit Index (CFI) is an incremental fit index that compares the tested model with the null model. The magnitude of this index is in the range of 0 to 1 and an understanding that is close to 1 identifies the model has a good level of suitability. This index is highly recommended for use because this index is relatively insensitive with the sample size not affected by the complexity of the model. By paying attention to the recommended understanding that is ≥ 0.95 , then the CFI Understanding of 0.989 indicates that this model has a good fit.

The Root Mean Square Error of Approximation (RMSEA) is an index used to compensate for the Comprehension of Chi-Square in a large sample. The recommended understanding is ≤ 0.08 , the understanding of the RMSEA model is 0.023 which indicates a good level of suitability.

The overall measurement of the Goodness of Fit mentioned above, indicates that the model proposed in this study is acceptable. After the research model is accepted, the next sub-discussion is to explain hypothesis testing and discussion of research results.

Hypothesis Testing and Discussion

The relationship between constructs in the hypothesis is shown by understanding regression weight (Hair et al, 1998). In testing this hypothesis, it will be significant if Understanding CR > 1.96 and Understanding P < 0.05. The power of influence can be seen in Understanding Estimate. To analyze this more clearly about this research. This analysis is seen from the amount of regression weight model which can be seen in the following table.

Tabel 9. Regression Weight

Variable is affected		Variable affect	Estimate	S.E.	C.R.	P	Label
Employee Satisfaction	<---	Understanding Society 5.0	, 160	, 077	2,094	, 036	par_17
Employee Satisfaction	<---	Quality Society 5.0	, 174	, 089	1,959	, 050	par_18
Improved Quality Improvement	<---	Quality of Understanding	, 149	, 060	2,468	, 014	par_19
Quality Improvement	<---	Understanding Society 5.0	, 109	, 049	2,216	, 027	par_20
Quality Improvement	<---	Quality of Understanding	, 180	, 092	1,963	, 050	par_22

The results of this test indicate that overall all analyzed pathways have a significant relationship, as seen from the probability level (P) less than 0.05. This significant relationship is also supported by Understanding CR > 1.96 in all analyzed pathways

4. Conclusion

In general, it can be concluded that the socialization of Society 5.0 has had a good impact and has attracted the awareness of flat industry employees for digital literacy. This is following the needs of the industry which shows that an understanding of Society 5.0 has a positive impact on improving the quality of employees' work. The second conclusion, it can be concluded that employee understanding does not have a significant effect on employee satisfaction. If this is correlated with the first hypothesis which states that employees are very satisfied with Society 5.0 Understanding, then the quality of understanding does not affect the employee's decision to utilize the Society 5.0.

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