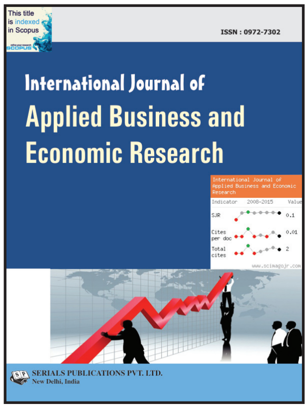

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Validation of Human Resource Capability, Production Planning System, Technology, Organizational Culture and Performance

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ABSTRACT

The study using Confirmatory Factor Analysis (CFA) for testing construct validity variables Data Human resource capability, Production planning system, Technology and Organizational Culture on Organizational. The objective is to confirm or test the model, the measurement model formulation derived from the theory. Thus, the CFA can be said to have two focus of the study are: (1) whether the indicators were conceptualized as a unidimensional, precise, and consistent; (2) indicators any dominant form constructs studied. Furthermore, the goodness of measures examined via field experts, academicians and data analysis with SPSS and AMOS v21. The result ofCFA demonstrated the full measurement model with measures of all the variables had acceptable fit to the data. The findings showed all indicators were conceptualized as a unidimensional, precise, and consistent. Therefore, the indicators developed were appropriate to be used in investigating the integrated effects Human resource capability, Production planning system, Technology and Organizational Culture on Organizational of Small Medium Enterprise in Indonesia.

Keywords: Human resource capability, Production planning system, Technology, Organizational culture, Organizational performance, Confirmatory factor analysis.

1. INTRODUCTION

Manufacturing industry sector is one sector that is a key contribution to the GDP, as an indicator of economic progress in Indonesia [1]. However, since the monetary crisis in 2008 which hit the world economy, have an impact on economic growth [2], Honohan, 2010). Therefore, the government seeks to increase the competitiveness of the manufacturing industry sector, particularly the automotive industry and the SME sector a metal that can withstand global crisis era [1].

Indonesian government has prepared various national programs to enhance competitiveness, improve product quality and performance of SMEs ([4], [5]). Furthermore, to achieve national goals and programs, business operators and metals sector of the automotive industry need to ensure that appropriate organizational strategies implemented and sustained in order to achieve better organizational performance. Problems faced by SMEs in achieving better performance and enhance the competitiveness of its limited human resources with good quality, technology and production planning as well as an organizational culture that is conventional ([6], [7], [1]). Nevertheless, Indonesia's automotive industry has huge potential for growth. Data from Cooperative Automotive Components Industry Indonesia found that 70% of industrial components are produced by Small and Medium Enterprises (SMEs) [5]. The sector, with a workforce of two million, need to continuously train its employees so as to ensure Indonesia remains competitive in the ASEAN Economic Community (AEC), and the global market [5].

An extensive research work has been carried out to examine the relationship between above-mentioned factors and organizational performance. The literature shows that many researches studies have been carried out in developed countries [8], but very few in the context of developing countries, especially in Indonesia, whereas the role of SMEs in developing countries is far more important, than the developed countries particularly regarding employment and generation of revenues. Small and medium industries have a role in terms of employment, income generation, and as a driver of the local economy ([9], [6]). This study attempted to address this insufficiency and pursued to bridge the existing research gap.

This study has adapted, varied measures in assessing the constructs. There is a necessity to develop a complete tool that systematically clarifies these performance factors. Therefore, the study seeks out to collect outcomes based on subsequent research inquiries; what is the internal consistency of each variables? And does measurement the effect all variables on organizational performance possess well construct validity? First, this study assesses the internal consistency or reliability of organizational culture and organizational performance indicator. Secondly, it assesses the construct validity of performance instrument by utilization CFA. The next step is assessing the overall model fit in which the indices of the model have to achieve the minimum acceptable level.

2. CONCEPTUAL BACKGROUND

A. Human Resource Capability

[10] statedthat a company will achieve superior performance and gain competitive advantage sif it is able to attain resources that are difficult to be imitated by competitors. In fact, the traditional assets of company such as natural resources, technology and economies of scale can progressively decrease the competitiveness of a firm if rival firms are able to emulate them. Human resources are becoming one of the source of competitive advantage.

Therefore, human resources must relate to the needs of the firm ([11], [12]). Qualified personnel enable it to address market needs better in terms of quality of products and services produced, product differentiation and technological innovation [13].

The human resource is not seen as mere resource, but rather as capital or assets of a firm. As a major valuable asset, it can be multiplied and developed (compared to portfolio investment) and not seen as a liability (burden, cost). Therefore, it is always regarded as an investment if a firm to behighly competitive (Greer, 1995; Mohammed, Bhatti, Jariko, & Zehri, 2013).

According to [15], [16], [17], human resource is one of the resources that a firm own. Compared with other elements, the human element is the most dynamic and complex ([18], [19], [20]).The notion surrounding the distinctive importance of human resource is derived from the concept of considering human resource as the main source of sustainable competitive advantage for the organisation ([21], [22]).

The four necessary prerequisites are: human capability and commitment [23]the strategic importance of human resources [21], management human resources by specialists, and integration of human resource management in business strategy [24].

The Resource-Based View (RBV) identifies Human Resource Capability (HRC) dimension as; skilled human resource, innovative human resource, human resource effectiveness, training competent employees and human resource commitment ([25], [26], [23]).[27]), also defines the skilled workforce as a HRC, while [28] included managerial skills like self-development and analytical capability.

B. Production Planning System

Production Planning System (PPS) is an important aspect especially for a firm that produces components. This is an activity where resources that flow into the system is defined, combined and modified in a controlled way to add value in accordance with the policy communicated by management [29]. According to [30], production system refers to a set of resources and procedures involved in converting raw material into products and delivering them to customers. [31] coined it as operations management.

According to [29] operations department is responsible for the production of quality goods and services. Management is a transformational process of various operational resources of the organization into valuable goods and services as per the organization's policies. Production management is the arrangement of management activates, involved in the manufacturing of products. Application of this concept to the activities of services management is called as operations management [29]. As per view of [32], the scope of operations management has three main aspects: (a) production planning system, (b) production system control, (c) production system information. However, to produce a high-quality product, a firm should adopt an appropriate production strategy.

C. Technology

[33] defined technology as the knowledge, usage and making of systems, machines, crafts, tools, techniques and methods used by an entity in order to solve an issue or perform a particular function. Technology plays a very important role especially in a competitive market, improving competitive advantage through its role in determining product cost or creating differentiation. Technology is also a tool to increase productivity of the human resource in order to exploit, control and develop natural resources ([34], [35]).

[36] claimed that technology enables an organization to create innovative processes, product innovation, and adapt to new market segments that will lead to increased market share and market size. Increased market share and size will also result in increased economies of scale and learning effects which later lead to reduction of costs. In the manufacturing sector, the pivotal importance of technological innovation to improve resource productivity and environmental performance has become particularly apparent [37].

According to [38], most people widely use technology for their benefits and believed that technology has a significant impact on their lives. It acts as a beneficial source for our lives especially related to health.[39] described technology as a combination of physical equipment and knowledge relating to the manufacturing industry. Meanwhile, [40]described technology as a triangle consisting of three components that interact with each other and are interdependent, humans, science and physicaltools.

D. Organizational Culture

[41] describedsystem as publicly and collectively accepted and which is valid for a certain time for a certain group of people. Organizational Culture (OC) has a leading position among the components that are considered as essential for sustainable firm performance, gaining a competitive edge and a strong reason for the firm to outperform and to be un-owned as great firm [42]. Shared values, beliefs, expectations, assumptions and norms are factors that make OC and keep the system and people together [43].

[44] said OC has underlying principles, values and beliefs which work as the basis for the management system of an organization and also as a set of behaviours and practices for management that both reinforces and exemplifies those basic principles. OC can be the foundation for crisis management as it is an important dimension present at institutional level [45].

[46] described OC, as an internal organizational variable, influencing Organizational Performance (OP) and effectiveness and indeed, every aspect of organizational life [8]. It affects organizational behaviour and posture in relation to the external environment ([47], [48]). The literature confirms direct and indirect effects of OC on OP ([49], [46], [48]).

3. RESEARCH METHODOLOGY

The questionnaires were distributed to the owners and managers in SMEs automotive and metal sector in Indonesia. 450 surveys were directly distributed and 360 were used for further investigation.

A. Measurements

Questionnaires are essential to and most directly associated with survey research [50]. A survey questionnaire was utilised for this study. [51]stated that the mail questionnaire has detailed look into the wording of the questions, arrangement of variables and the appearance of questionnaires. The primary data for this study were collected through a standardized, structured and self-administered questionnaire. The researcher employed five previously used instruments, which had been validated and found to be reliable and had been used in many other studies. The questionnaire was divided into two main parts: Part A (demographics of respondents), consisted of the statements regarding position, educational level, gender, age, work experiences, employment status, and number of employees [52], [53], [54]. and Part B (research instrument comprised five sections).

Part B comprised of five sections, in this study used seven-point scale to measure the items. [55] said the seven Likert scale assists to establish covariance among variables. The first section measured HRC [25]. In the light of RBV, HRC was represented by human resources that were skilled, innovative, effectiveness, commitment, and well trained [25],[53], and [56], [57]. In the second section of 33 items, the instrument questionnaires employed by [58], [31], [59], were adapted to measure the PPS variable. In the third section, 16 indicators of technology were presented. Questionnaires employed by [60], [61], [62], and [56], were adapted. In the fourth section, the research instrument eight statements to measure the extent to which the OC had been develop in their company to make them competitive in their business world. The items were adapted from the questionnaire employed by [32], [63], [64]and [65]. In the fifth section, the research instrument measured of organization performance. To measure these factors, the researcher adapted the questionnaire employed by [66], [67],[68], [65], and [56]. The respondents (owners or general manager), according to statement in questionnaire, were asked regarding their perception of the SME's performance over the past five years.

4. FINDINGS

A. Data Screening and Analysis

This study measuring all items in instrument research, assessment of Outliers; Examination of outliers in the questionnaire showed no outlier. Assessment of Normality; the value of the critical ratio is smaller than the chi-squared table (Cr. multivariate = 27.4521 < χ^2_{28} = 41.337) which shows a normal distribution. Validity Test: The confidence level used in testing the validity of the items in pilot study (N = 80) and main study was 95% with the number of respondents 360. Similarity results of all items in this study are valid ($r > 0.241$). Based on Cronbach's alpha and CR, between pilot study and main study, there was no significant difference in the results of the validity and reliability tests between the pilot study and the main study, the values ranged CR from 0.876 to 0.932, indicating that all constructs had acceptable reliability (internal consistency great than 0.7). The average variance extracted values ranged from 0.477 to 0.670, all great than the recommended critical limit of 0.5. *Root Mean Square Residual* All *Root Mean Square Residual* (RMR) values are less than 0.05, meaning that the research data follows a normal distribution.

B. Profile of Respondents

In compliance with data collection requirements, 450 questionnaires were personally distributed to all SMEs in the metals/automotive sector of West Java. Only 400 questionnaires were returned. 40 of which were discarded because they were incomplete, resulting in 360 usable responses. This yielded an overall response rate of 80%.

The respondents were from the top and middle management (Owners and managers) of the SMEs, indicating that the questionnaires had been completed by the appropriate people to provide accurate information. The largest group of respondents' owners' 30.28% and 69.72% managers. Both management levels possess adequate knowledge to answer the survey because they are involved in strategic decision making and understand their firm's performance. 91% of the 360 respondents were male.

According to age170 (47.22%) respondents belongs to the age group 45–55 years, 100 (27.78%) 45–55 years or above, and 90 (25%) were in the age of 36-45. No respondents younger than 35 were found. The age and level of maturity of respondents was therefore appropriate, and as expected. Furthermore according to Educational Level, the findings show that the majority of respondents have at least a high school education and diploma, although fewer have a degree. Nevertheless, all have good experience in managing the company. The specific figures are 169 (46.95%) high school, 77 (21.39%) diploma, 104 (24.87%) bachelor's degree, 7 (1.95%) master's, with 0.84% having other certificates.

According to Region, the largest group of respondents are from Bandung, with 248 (68.88%), of whom 128 (35.6%) are from Bandung City and 40 (11.1%) each from Bandung Regency and from West Bandung Regency and Cimahi City. 56 respondents (15.56%) are from Bekasi, equally divided between Bekasi City and Bekasi Regency. The remaining 56 (15.6%) respondents are from Karawang Regency.

It is not surprising that most of our SMEs are located in Bandung, given that it is the capital of West Java province and has experienced the largest growth of SMEs in the region. According to Job Status of Employees the findings show that all respondents' employees (100%) are permanent, strengthening the accuracy of the information requested. Number of Employees, all respondents well over half (58.3%) of our SMEs have 5-10 employees, with 27.8 % having less than 5and 13.9% great than 10.

C. Confirmatory Factor Analysis (CFA)

Structural Equation Modelling (SEM) is a useful technique available in AMOS for testing CFA, especially for models which have multiple variables and to examine the interrelationships between them [69]. The main purpose of conducting CFA is to confirm the factor loadings for each construct: HRC, PPS, TECH, and OC as a mediating variable.

[69] provide lucid guidelines on the interpretation of factor loading values. A value of +0.50 or more is considered to be very significant; +0.40 is very important; and +0.30 is significant. In this research, all items had factor loadings of more than 0.70, indicating that they are correlated very significantly with the factor itself.

For simplicity, a separate CFA for independent and dependent variables is performed to test the measurement properties of the underlying latent structure of measurement. The finding also analyses the convergent and discriminant validities of all the measures.

The CFA of the HRC variable is shown in Table 29.1. The factor loading for every item is satisfactory, with values ranging from 0.79 to 0.96, which is confirmed as acceptable by Hair *et. al.*, (2006). That is, all constructs meet the construct validity criterion. The number of items for each construct are as follows [25], [53], and [56], [57]: Skill (HRC1: 11 items), Innovation (HRC2: 4 items), Effectiveness (HRC3: 3 items), Training (HRC4: 5 items), and Commitment (HRC5: 5 items). Table 29.1 show that the dimension with the largest standardized payload is HRC1 at 0.9151. In other words, HRC1 can predict 83.74% of the latent HRC variables; the remaining 16.26% is a measurement error caused by other factors. The smallest standard charge is HRC5, amounting to 0.6149, and meaning that can predict 37.81%, while the remaining 62.19% is an error that comes from factors beyond the research.

Table 29.1
Factor Loading of Human Resource Capability (CFA)

Construct	*Code*	*Factor Loading*
Skilled Human Resource	HRC1	0.9151
Innovative Human Resource	HRC2	0.8119
Effective Human Resource	HRC3	0.7344
Training Human Resource	HRC4	0.6710
Human Resource Commitment	HRC5	0.6149

Several indices were used to determine the goodness of fit of the exogenous model, as shown in Table 29.2 (e.g. GFI = 0.9616, AGFI = 0.8849, Ratio = 7.3209, TLI = 0.9280, CFI = 0.9640, and RMSEA = 0.1327). From these indices, it can be said that the model achieved a good fit for the data (Hair *et. al.*, 2010).

Table 29.2

Goodness of fit of Human Resource Capability

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	0.9616	> 0.80	Hair *et. al.* (2010)
AGFI	0.8849	> 0.80	Cuttance (1987)
Ratio	7.3209	< 5.00	Marsh and Hocevar (1985)
CFI	0.9640	> 0.90	Bentler (1990)
TLI	0.9280	> 0.90	Hair *et. al.* (2010)
RMSEA	0.1327	< 0.08	Byrne (2001)

Note: GFI is the Goodness of Fit Index; AGFI is the Adjusted Goodness of Fit Index; CFI is the Comparative Fit Index; TLI is the Tucker-Lewis Index RMSEA is the *Root Mean Square Error of Approximation*.

HRC as predicted by the five variable constructs with coding items HRC1-HRC5 has a GFI suitability index greater than AGFI's 0.8, or even CFI and TLI's 0.9, all of which are still good models. If the views of the value ratio and RMSEA, in the case of discrepancy as measured by the index ratio which has a value > 5 and a still greater RMSEA index of 0.08, this indicates the model is less suitable. Overall, therefore, CFA models for HRC latent variables predicted HRC1–HRC5, which is otherwise quite good.

Similarly, CFA was conducted on the PPS independent variable. The results in Table III indicate that factor loadings of the variable constructs of PPS, ranging from 0.7158 to 0.8452, achieved the minimum cut-off value as suggested by [69]. Therefore, it can be said that all constructs meet the construct validity criterion. The residual number of items of each variable construct was as follows: production planning (9 items), location of production (6 items), factory location (4 items), workplace (4 items) and working standard (10 items).

Table 29.3

Factor Loading of Planning Production System (CFA)

Construct	*Code*	*Factor Loading*
Production Planning	PPS1	0.8452
Location of Production Facilities Planning	PPS2	0.8358
Factory Location Planning	PPS3	0.7158
Workplace Planning	PPS4	0.7438
Planning Working Standard	PPS5	0.7571

This table explains that the variable construct with the greatest standardized payload is PPS1 at 0.8452; in other words, PPS1 can predict PPS latent variables of 71.44%; the remaining 28.56% is a measurement error caused by other factors. The dimension which has the smallest standard charge is PPS3 at 0.7158, which means being able to predict variable PPS at 51.23%, while the remaining 48.77% is a mistake that comes from factors beyond the research.

Table 29.4
Goodness of fit of Planning Production System

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	0.9776	> 0.80	Hair *et. al.,* (2010)
AGFI	0.9328	> 0.80	Cuttance (1987)
Ratio	3.9365	< 5.00	Marsh and Hocevar (1985)
CFI	0.9843	> 0.90	Bentler (1990)
TLI	0.9686	> 0.90	Hair *et. al.,* (2010)
RMSEA	0.0904	< 0.08	Byrne (2001)

Table 29.4 shows that the goodness of fit of PPS predicted by the five variable constructs PPS1-PPS5 has a GFI suitability index larger than AGFI's 0.8, or CFI and TLI's 0.9, nevertheless indicating comparatively good models. Likewise with the discrepancy index, as the ratio of the value of the result is less than 5, the model is accepted. If the views of the value RMSEA, the index is still greater than RMSEA's 0.08, indicating less suitable models. Overall, therefore, CFA models for PPS latent variables predicted PPS1-PPS5.

CFA was also conducted on the TECH independent variable. Table 29.5 shows that the construct with the greatest standardized payload is TECH2 at 0.8747; in other words, TECH2 can predict latent variable TECH with 76.51% probability; the remaining 23.49% is a measurement error caused by other factors. The construct with the smallest standard charge is TECH3 at 0.7426, with prediction of 55.14%; the remaining 44.86% is a mistake that comes from factors beyond the research.

Table 29.5
Factor Loading of Technology (CFA)

Construct	*Code*	*Factor Loading*
Technical Science	TECH1	0.8391
Level of Skill	TECH2	0.8747
Physical Tools	TECH3	0.7426

Table 29.6
Goodness of fit of Technology

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	1.000	> 0.80	Hair *et. al.,* (2010)
AGFI		> 0.8	Cuttance (1987)
Ratio	0.000	< 5	Marsh and Hocevar (1985)
CFI	1.000	> 0.90	Bentler (1990)
TLI		> 0.90	Hair *et. al.,* (2010)
RMSEA	0.6824	< 0.08	Byrne (2001)

In Table 29.6 TECH is predicted by three dimensions: it has GFI and CFI with a perfect match of 1; and the discrepancy index is zero, that is less than 5, so the model is acceptable. However, the index is greater the RMSEA's 0.08, indicating a less suitable model. Overall, therefore, CFA models for the latent variable TECH as predicted by TECH1-TECH3 is otherwise excellent.

The result of CFA on the mediating variable OC in Table 29.7 show that the indicator with the largest standardized payload is OC7, at 0.7574. This means that it can predict latent variables OC at 57.37%; the remaining 42.63% is a measurement error caused by other factors. The indicator with the smallest standard charge is OC1 at 0.5844, able to predict OC only at 34.15%; the remaining 65.85% is a mistake that comes from factors beyond the research.

Table 29.7
Factor Loading of Organizational Culture (CFA)

Construct	*Code*	*Factor Loading*
Organizational Culture	OC1	0.5844
	OC2	0.6991
	OC3	0.6771
	OC4	0.6830
	OC5	0,6506
	OC6	0.7517
	OC7	0.7574
	OC8	0.7177

According to Table 29.8, OC predicted by the eight indicators have a GFI suitability index larger than the 0.8 of or the 0.9 of CFI and TLI, indicating comparatively good models. Likewise, the discrepancy index is less than 5, indicating that the model is accepted. However, the index is still greater than RMSEA's 0.08, indicating a less suitable model. Overall, CFA models for latent variable OC predicted by OC1-OC8 are otherwise excellent.

Table 29.8
Goodness of fit of Organizational Culture

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	0.9476	> 0.80	Hair *et. al.* (2010)
AGFI	0.9057	> 0.80	Cuttance (1987)
Ratio	3.7858	< 5.00	Marsh and Hocevar (1985)
CFI	0.9525	> 0.90	Bentler (1990)
TLI	0.9335	> 0.90	Hair *et. al.* (2010)
RMSEA	0.0881	< 0.08	Byrne (2001)

The results of CFA on the dependent variable OP are shown in Table 29.9. The indicator with the greatest standardized payload is OP4, amounting to 0.8124, and meaning that OP4 can predict latent variable OP by 66.00%; the remaining 34.00% is a measurement error caused by other factors. The indicator with the smallest standard charge is OP7 at 0.5859, able to predict OP by only 34.33%; while most of the remaining 65.67% is a mistake that comes from factors beyond the research.

Table 29.10 on goodness of fit of OP predicted by the seven indicators OP1-OP7 has a compatibility index from GFI which is greater than AGFI's 0.8, and CFI and TLI's 0.9, indicating comparatively good models.

Table 29.9
Factor Loading of Organizational Performance (CFA)

Construct	*Code*	*Factor Loading*
Organizational Performance	OP1	0.7518
	OP2	0.7552
	OP3	0.7700
	OP4	0.8124
	OP5	0.6413
	OP6	0.6273
	OP7	0.5859

Table 29.10
Goodness of fit of Organizational Performance

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	0.9637	> 0.80	Hair *et. al.,* (2010)
AGFI	0.9274	> 0.80	Cuttance (1987)
Ratio	3.4650	< 5.00	Marsh and Hocevar (1985)
CFI	0.9679	> 0.90	Bentler (1990)
TLI	0.9519	> 0.90	Hair *et. al.,* (2010)
RMSEA	0.0829	< 0.08	Byrne (2001)

The discrepancy index is less than 5, indicating the model is accepted. However, the index is still greater than RMSEA's 0.08 which indicates less suitable models. Overall, therefore, CFA models for the latent variables OP predicted by OP1-OP7 are otherwise excellent.

5. GENERATED MODEL

In this study, CFA was conducted for each variable separately. Therefore, it could be possible that when they all variables were placed together in SR (Structural Regression) model, their indicators might show high correlations or cross loadings with other variables. Hence, it was decided to mitigate this threat by conducting CFA for full measurement model, i.e., with measures of all the variables of this study together. The results of Goodness of fit of full measurement (see Table 29.11) demonstrated the full measurement model with measures of all the variables had acceptable fit to the data. See the factor loadings of the full measurement model in Table 29.12.

Table 29.11
Goodness of fit of full measurement model of the study

Measures	*Fit Indicates*	*Threshold Values*	*Source*
GFI	0.866	> 0.80	Hair *et. al.* (2010)
AGFI	0.834	> 0.80	Cuttance (1987)
CFI	0.914	> 0.90	Bentler (1990)
TLI	0.901	> 0.90	Hair *et. al.* (2010)
RMSEA	0.068	< 0.08	Byrne (2001)

The generated model was based on the suggestions of modification indices made to achieve a good fit for the data [70]. Therefore, it can be concluded that the model has achieved goodness of fit as shown by the indices. Figure 29.1 illustrates the results of each variable as represented by its dimensions. The full models in the figure consist of five variables.

Table 29.12
Factor Loadings of full measurement model of the study

	Indikator		*Estimate*
HRC5	<---	HRC	.618
HRC3	<---	HRC	.719
HRC2	<---	HRC	.818
PPS5	<---	PPS	.808
PPS4	<---	PPS	.776
PPS3	<---	PPS	.633
PPS2	<---	PPS	.791
TECH3	<---	TECH	.723
TECH2	<---	TECH	.840
TECH1	<---	TECH	.883
OC1	<---	OC	.562
OC2	<---	OC	.672
OC5	<---	OC	.611
OC6	<---	OC	.764
OC7	<---	OC	.778
OC8	<---	OC	.762
OP1	<---	OP	.772
OP2	<---	OP	.737
OP4	<---	OP	.766
OP5	<---	OP	.675
OP6	<---	OP	.647
OP7	<---	OP	.605
HRC1	<---	HRC	.918
OC3	<---	OC	.628
PPS1	<---	PPS	.816

6. DISCUSSIONS

The factor loading indicator for skill (HRC1), with 11 item statements, had a standardized payload of 0.951, and the dimensions of HRC1 can predict the HRC latent variable with a probability of 83.74%. Innovation (HRC2), with 4 item statements had a standardized payload of 0.8119, so the dimensions of HRC2 can predict the HRC latent variable as 65.92%. The factor loading variable of effectiveness (HRC3), with three item statements, had a standardized payload of 0.7344, so the variable HRC3 can predict the HRC latent variable with 53.93% reliability. Commitment (HRC4), with five item statements, had a standardized payload of 0.6710, so HRC4 can predict the HRC latent variable at 45.03%. Training (HRC5), with five item statements, had a standardized payload of 0.6149, so the variable HRC5 can predict the HRC latent variable with a value of 37.81%.

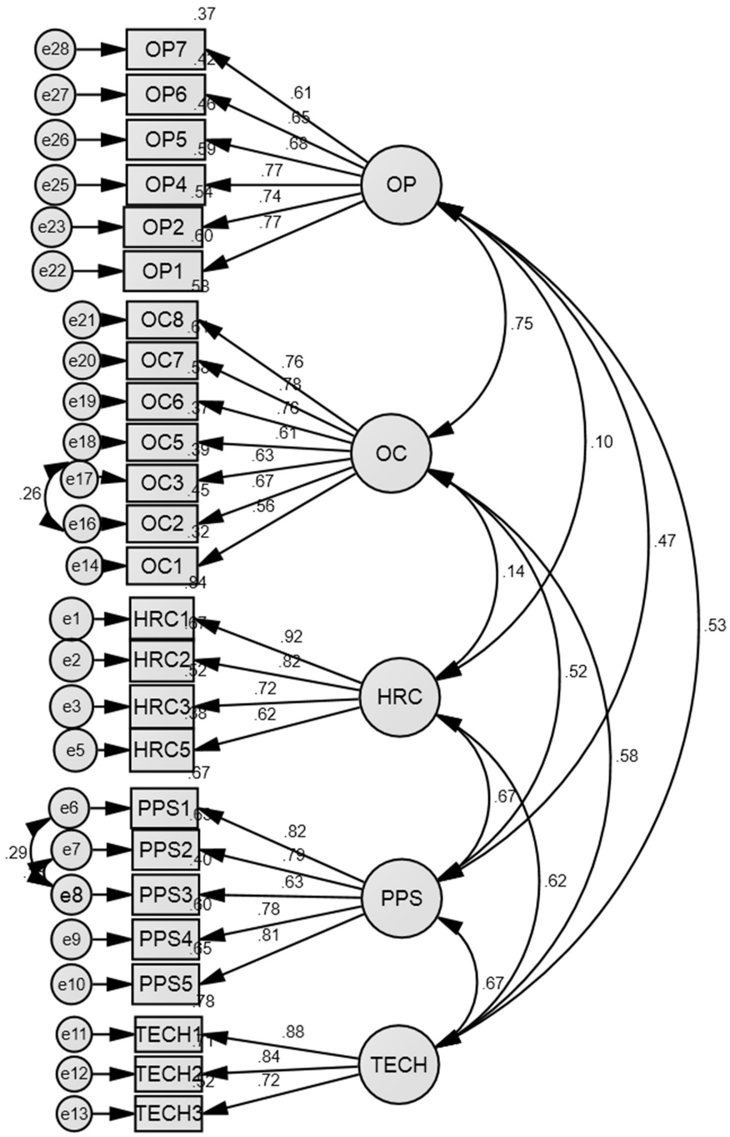

Figure 29.1: Overall Confirmatory Factor Analysis (CFA)

This is supported by the results of the GFI measurement, which indicate the values currently on the threshold-value limits. GFI with a value of 0.9616 and a threshold value > 0.8 indicates that the model has a good fit; the respective values for AGFI of 0.8849 and > 0.8 indicate that the model has good fitness overall; the values of CFI at 0.9640 and TLI at 0.9280, with the same threshold > 0.9, indicate excellent agreement. The discrepancy index as measured by the ratio value was 7.3209 with a threshold value of < 5, and the RMSEA value of 0.1327 with a threshold value of < 0.08, both indicate that the model is less suited to the covariance matrix of the population. However, the overall model of the CFA for the latent variable OC is expressed very well.

Based on the CFA indicator, this study suggests that all the HRC indicators (skill, innovation, effectiveness, commitment and training) have an impact on OP, and that its involvement in developing business strategies is becoming increasingly important, especially in high-tech SMEs ([25], [26], [71]).

CFA for production planning (PPS1) had nine item statements with a standardized payload of 0.951, so the variable PPS1 can predict the PPS latent variable with a value of 83.74%. Production facilities planning (PPS2), with six item statements had a standardized payload of 0.8119, giving a prediction value of 65.92%. The results for location planning (PPS3), with four item statements, were 0.7344 and 53.93%; for workplace planning (PPS4), also with four item statements, were 0.6710 and 45.03%; and for planning working standards (PPS5), with ten item statements, 0.6149 and 37.81%.

The GFI measurement also indicates the value against the threshold-value limit. GFI 0.9476 with a threshold value > 0.8 indicates that the model has a good fit; AGFI 0.9057 with the same threshold value a fitness model that is good overall; CFI 0.9525 and TLI 0.9335, both against > 0.9, indicate excellent agreement. The discrepancy index as measured by the ratio value amounted to 3.7858 with a threshold value < 5, indicating that the model can be well received. Of the overall index measures, only the RMSEA value of 0.0881 does not meet its threshold value of < 0.08, indicating that the model is less suited to the co-variance matrix of the population. Nevertheless, the overall CFA model for OC is expressed very well.

To recap, the CFA indicator suggested that PPS includes product planning, location of factory, factory layout, work environment, and production standards. The production planning variable in particular influences the performance of firms operating internationally, as found in previous studies. Good planning of production systems will be able to transform inputs into good outputs to achieve organizational goals and good OP ([72], [32]). PPS clearly plays an important role in giving competitive advantage to a firm.

The CFA variable of technical science (TECH1) had four item statements, with a standardized payload of 0.8391; TECH1 can therefore predict the TECH latent variable with a value of 70.41%. The figures for level of skill (TECH2), with four item statements, are 0.8747 and 76.51%, and for TECH3, with eight item statements, 0.7426 and 55.14%.

This is supported by the GFI result. At 1.000, and with a threshold value of > 0.8, the model has a very high match, supported also a CFI of 1000 (threshold value > 0.9), indicating that the fitness model overall is very good. The discrepancy index as measured by the ratio of the value of 0.000 with a threshold value < 5 indicates that the model can be received very well. Of the overall index measurements, only the RMSEA value of 0.6824 does not meet the threshold value of < 0.08, indicating that the model is less suited to the co-variance matrix of the population; however, the overall CFA model for the TECH latent variable suggests that it is excellent.

Based on the CFA indicator, this study suggests that technology is not only the key to a prosperous modern organization [73] but also contributes to increased productivity and efficiency of the productive process, in turn making the adoption of technology more effective and efficient ([61],[62]). This clearly indicates technology plays an important role in improving SMEs.

Responses related to a company's OC are represented by eight item statements, the results showing that the raw payload of each dimension can predict the latent variable OC. Factor loading OC1 gives a standardized payload of 0.5844, and can predict a latent variable with a value of 34.15%. The figures for OC2 are 0.6991 and 48.87%; for OC3 they are 0.6771 and 45.85%; OC4 0.6830 and 46.65%; OC5 0.6506 and 42.33%; OC6 0.7517 and 56.51%; OC7 0.7574 and 57.37%; and finally, OC8 0.7177 and 51.51%. Thus the indicators predict that the latent variable OC can affect OP ([48], [63], [74], [46], [75], [76], [77]).

This finding is supported by GFI measurement; at 0.9476 with a threshold value of > 0.8, this indicates that the model has a good fit; AGFI at 0.9057 and > 0.8 indicates also indicates that fitness model overall is good; while CFI at 0.9525 and TLI at 0.9335, both with a threshold of > 0.9, indicate excellent agreement. The discrepancy index as measured by the ratio value of 3.7858 and a threshold value of < 5 indicates that the model can be well received. Once again, only the RMSEA value of 0.0881 exceeds the threshold value of < 0.08, indicating that the model is less suited to the co-variance matrix of the population, although the overall CFA model for the latent variable OC is expressed very well.

OP is represented by seven item statements and show that the raw payload of each dimension can predict the latent variable OP. Factor loading OP1 gives a standardized payload is 0.7518, and can predict a latent variable with a value of 56.52%; OP2's figures are 0.7552 and 57.03%; OP3 is 0.7700 and 59.29%; OP4 is 0.8124 and 65.99%; OP5 is 0.6413 and 41.13%; OP6 is 0.6273 and 39.35%; and OP7 is 0.5859 and 34.33%.

These results are supported by the GFI measurement, of 0.9637 against its threshold value of > 0.8, indicating that the model has a good fit, AGFI at 0.9274 against > 0.8, indicates a good fitness model overall; CFI at 0.9679 and TLI at 0.9519, both with thresholds > 0.9, indicate excellent agreement. The discrepancy index is 3.4650 with a threshold value of < 5, again indicating that the model can be well received. Once again, only the RMSEA value (0.0829) does not match the threshold value of < 0.08, indicating that the model is less suited to the co-variance matrix of the population. However, the overall CFA model for the latent variable OC is expressed very well.

7. IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

This study contributes on constructing validation of organizational culture and organizational performance measures in the context of SMEs automotive and metal industry in Indonesia. Previous literatures suggested that construct validation gives meaningful results and value for any research([78],[79]). Up to researcher knowledge, very few studies were conducted on the basis of construct validation especially in confirmatory factor analysis. Based on this limitation, the researchers scrutinize the measurement validation in the Indonesia context, particularly in SMEs automotive and metal sector industry. The findings of this study were limited to the SMEs automotive and metal industry in Indonesia. Therefore, the results could not be generalized to other sectors. Future studies should be done to further validate these organizational culture and organizational performance measures in different setting.

8. CONCLUSION

This research outcomes indicate that HRC, PPS, OC are useful examining the performance SMEs automotive and metal sectors industry in Indonesia. So, this study showed that the instrument used to measure the strategies and performance linked in SMEs automotive and metal sectors industry in Indonesia was reliable and valid.

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