# The Effect of Organizational Culture's Dimension, Total Quality Management and Entrepreneurial Orientation towards the Performance of Herbal Enterprises in Indonesia

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#### **Abstract**

This study aims to determine the effect of the dimension of organization culture (clan, adhocratic, hierarchy, market) on total quality management, the effect of the dimension of organization culture on entrepreneurial orientation, and the effect of the dimension of organization culture, total quality management and entrepreneurial orientation on the performance of herbal enterprises in Indonesian. The study uses quantitative approaches and deductive methods. The sample consists of 400 selected herbal entrepreneurs registered with the Asosiasi Pengusaha Herbal Indonesia using a simple random sampling method. Data is collected by using questionnaires and analysed by using structural equation modelling. The findings show that seven out of the 14 hypotheses tested were supported. Specifically, market culture is the only cultural factor that significantly and positively affects total quality management. Adhocratic and market culture are cultural factors that significantly influence entrepreneurial orientation positively. The subsequent findings show that clan culture, total quality management and entrepreneurial orientation are significant and positive determinants of the organisation performance, while market culture affects organizational performance significantly but negatively. In conclusion, the performance of the enterprises can be increased through clan culture, total quality management and entrepreneurial orientation; total quality management practices can be enhanced through market culture and entrepreneurial orientation can be enhanced through adhocratic and market culture. In implication, to improve the performance of herbal enterprises, organizational culture, particularly clan culture, total quality management and entrepreneurial orientation needs to be practiced intensively.

Keywords: Culture; TQM; Entrepreneurship; Performance

#### 1. Introduction

Indonesia is the second-largest mega-biodiversity centre in the world after Brazil, which consists of tropical plants and marine biota. There are 7,000 species of plants that are thought to have medicinal properties (Jo, 2016). Indonesia has a large market opportunity in the cosmetics industry and traditional plant-based medicines (Astari, 2020), but the potential of these abundant natural commodities has not been optimally utilized as an area for developing herbal medicines. The current products produced by herbal companies in Indonesia might be able to compete with foreign products if the quality of their products can be improved. However, currently, the Indonesian herbal industry faces several challenges to be able to compete with herbal products from abroad. Commodities from Indonesian herbal companies are unable to compete, letting foreign herbal products dominate the domestic market. Data from the Ministry of Trade of the Republic of Indonesia in 2018 show that the herbal trade balance growth is still unable to compete with other countries. On the side of herbal businesses, there has been a significant decrease in the number of herbal companies

registered with the Indonesian NADFC (National Agency of Drug and Food Control) from 2016 to 2019.

Many studies have been conducted to identify the factors that can contribute to improved performance (Islami et al., 2017). However, research on the factors that influence organizational performance in the context of the herbal industry in Indonesia is still rare to find (Islami et al., 2017). Several studies have inconsistent and conflicting results in the study of organizational culture and its relationship to firm performance (Morched and Jarboui, 2021). Another study found that there is a positive correlation between organizational culture and company performance (Behram and Özdemirci, 2014; Morched and Jarboui, 2021). On the other hand, Yesil and Kaya (2013) reports that there was no relationship between organizational culture and company performance. Moreover, the correlation between several dimensions of organizational culture and company performance was negative (Naranjo-Valencia et al., 2016; Ogbonna and Harris, 2000). These conflicting results indicate the importance of further research on the direct influence of organizational culture on performance as well as boundary conditions that strengthen or weaken relationships.

Several studies discuss organizational culture, total quality management (TQM), and its influence on organizational performance (Alghamdi, 2018). Furthermore, there are many studies on the correlation between organizational culture and entrepreneurial orientation (Cherchem, 2017; Engelen et al., 2014), as well as studies related to TQM and its relationship with entrepreneurial orientation and company performance (Al-Dhaafri et al., 2016; Shirokova et al., 2016). Therefore, recent research needs to take into account the role of these three factors in a single research framework.

#### 2. Literature Review

## 2.1 Organizational culture's dimension

A system of rules, structures, procedures, and standards that limit and steer conduct is known as organizational culture. The assumptions, attitudes, interpretations, and core values that characterize an organization are defined by its culture (Cameron and Quinn, 2006). In this study, the competing values framework (CVF) designed by Cameron and Quinn (2006) was employed. The CVF framework outlines four distinct dimensions of organizational culture, namely clan, adhocratic, hierarchical, and market (Cameron and Quinn, 2006). The framework is the basis for the organizational culture assessment instrument (OCAI) (O'Neill et al., 2021). The CVF model is often used to measure organizational culture on various issues, such as TQM and organizational performance, entrepreneurial orientation, and performance (Khedhaouria et al., 2020).

#### 2.2 Total quality management (TQM)

Various definitions of TQM have been defined in various ways and it is a multidimensional concept that is a logical development of Total Quality Control (TQC) (Alghamdi, 2018). TQM as a holistic approach includes various processes and activities to achieve the main goals of the organization and to meet customer satisfaction (Aquilani et al., 2017). Quality reward models, such as Malcom Baldrige National Quality Award (MBNQA) and European

Foundation for Quality Management (EFQM), are used as a guide to TQM implementation by most organizations (Valmohammadi and Roshanzamir, 2015).

# 2.3 Entrepreneurial orientation

A successful business is supported by an entrepreneurial orientation which is shown by innovation, proactiveness, and a tendency to take risks (Miller, 1983). Entrepreneurial orientation tries to identify and exploit new opportunities continuously, create new values and become a leader in the market (Cherchem, 2017). According to a previous study, entrepreneurial orientation is an important factor that leads to successful new product development, high financial and non-financial business performance, and high social performance (Khedhaouria et al., 2020). In this study, the measurement of entrepreneurial orientation utilized survey questions developed by (Engelen et al., 2014).

#### 2.4 Performance

Organizational performance is the achievement of organizational goals as measured by indicators. In general, business performance can be classified into two categories, financial business performance and non-financial business performance (Umrani et al., 2018). Financial business performance usually includes a growth measure and a profitability measure (Singh et al., 2018). In this study, organizational performance was measured through two factors, namely the level of satisfaction and business results according to Singh et al., (2018). The level of organizational performance satisfaction includes four items, namely production achieved, employee satisfaction, customer satisfaction, and product quality, while Business results for organizational performance include two items: sales and profitability.

#### 3. Theoretical and Conceptual Framework

The formation of this research framework was guided by the research framework of Valmohammadi and Roshanzamir (2015) and Behram and Özdemirci (2014). In his study, Valmohammadi and Roshanzamir (2015) compared two structural equation models that explain the relationship between the three variables, namely organizational culture, TQM, and organizational performance. The models were used to determine the relationship between organizational culture, TQM, and its influence on organizational performance. Furthermore, in Behram and Özdemirci (2014) research model, the influence of environmental conditions and organizational culture on entrepreneurship was analyzed. The proposed research framework is displayed in Figure 1.

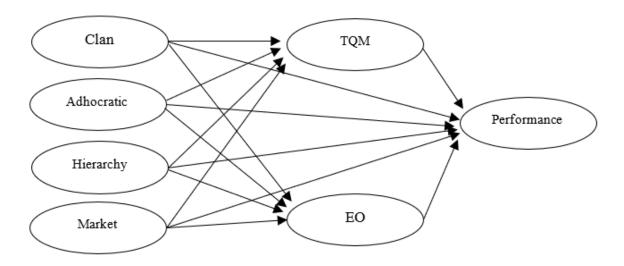


Figure 1: Proposed research framework

# 4. Research Hypothesis

From the research framework above, the hypotheses of this study are as follows:

H1a : Clan culture has a significant effect on TQM

H1b : Adhocratic culture has a significant effect on TQM

H1c : Hierarchy culture has a significant effect on TQM

H1d : Market culture has a significant effect on TQM

H2a : Clan culture has a significant effect on entrepreneurial orientation

H2b : Adhocratic culture has a significant effect on entrepreneurial orientation

H2c : Hierarchy culture has a significant effect on entrepreneurial orientation

H2d : Market culture has a significant effect on entrepreneurial orientation

H3a : Clan culture has a significant effect on organizational performance

H3b : Adhocratic culture has a significant effect on organizational performance

H3c : Hierarchy culture has a significant effect on organizational performance

H3d : Market culture has a significant effect on organizational performance

H4 : TQM has a significant effect on organizational performance

H5 : Entrepreneurial orientation has a significant effect on organizational performance

#### 5. Research Method

This study is a descriptive study employing a quantitative approach. The study was conducted in Indonesia due to its potential for the development of the herbal industry with an abundant wealth of herbal raw materials and the significant growth of the herbal industry in Indonesia.

The population of this study involved all herbal medicine entrepreneurs registered with the Asosiasi Pengusaha Herbal Indonesia (APHI), totalling 2,050 members. The sample in this study was taken from the population using a simple random sampling technique using random number generation. A simple random sampling technique is the simplest because the selection of population elements is done randomly without seeing and observing the

similarities or characteristics that exist in the population, this method is used if the population members are considered homogeneous. This sampling technique was used in this study because all members of the population had the same opportunity to be sampled. According to Hinkin (1995), to be able to analyse exploratory and confirmatory factors, it is necessary to propose an item to feedback ratio of 1:4 to 1:10. Therefore, the required research sample sizes for this study were 208 and 520, because there were 52 items used in this research. Thus, no matter how large the population represented, a sample size of 384 was considered sufficient (Krejcie and Morgan, 1970).

#### 6. Research Instrument

This study used a questionnaire as a data collection instrument. The measurement items were developed based on the literature from previous studies. The measurement items were adapted from previous research by looking at the accuracy and suitability of the items for this study and having good reliability and validity. In total, 52 items were used to measure the constructs within the research framework which were measured using an extreme label seven-point Likert scale. All of these items were in part A. In this part, the question as a whole required respondent to be able to identify whether they agree or disagree (option 1, strongly disagree, until option 7, strongly agree).

Part B covered respondent information to obtain personal information, background, and demographics of respondents consisting of gender, location, income, ethnicity age, education level, religion, and region consisting of five questions. Then, Part C was related to respondent information, to obtain additional information consisting of optional fields and as a reminder at the end of the session to ensure that all questions had been filled out completely.

#### 7. Data Analysis Techniques

The obtained data in this study were analysed using descriptive and inferential statistics. The demographic characteristics and background of the sample were described using descriptive statistics, which included a study of frequency, mean, and standard deviation using SPSS software. Meanwhile, the proposed hypotheses were tested using inferential statistics. Structural equation modelling (SEM) was utilized as the method of analysis, where SEM is a multivariate approach that allows for simultaneous analysis of multiple independent factors as well as the dependent variable.

#### 8. Results

#### 8.1 Descriptive analysis

Demographic analysis of respondents showed that the majority of respondents were male (279) compared to female respondents (94), representing percentages of 74.8% and 25.2%, respectively. In terms of age, most of the respondents were in the age range of 40-49 years

(40.5%) and 30-39 years (36.7%). In terms of the area, most of the respondents (70.3%) came from the Java region with Javanese ethnicity (55.1%), while in terms of education, most of the respondents had master's degrees, namely 57.7%.

## 8.2 SEM assumptions analysis

Prior to the actual analysis, SEM analysis was subject to some basic assumptions that need to be made, namely normality, outliers, and multicollinearity tests (Hair et al., 2010). At the univariate normality level, the normal values for skewness and kurtosis should be in the range of  $\pm$ 2 to  $\pm$ 2 (Garson, 2013). The test results indicate that all measurements for skewness and kurtosis were in the range of  $\pm$ 2. Thus, the data meet the assumption of univariate normality. Furthermore, the value of the multivariate Mardia kurtosis coefficient of 20.575, was too large compared to the recommended value, which is less than 1.96. Thus, the findings suggest that the sample has a severe multivariate distribution of abnormalities.

To obtain normally distributed data, the data outlier was tested. Two methods were carried out through univariate outliers (z score test) and multivariate outliers (Mahalanobis distance value). Values for the z-score test that were above the +4 range should be removed from the data (Garson, 2012). The standard z-score examination did not show a value that was outside the recommended range of  $\pm 4$ , indicating that none of the observations could be considered extreme cases or outliers. Thus, the data were independent of univariate outliers, indicating their suitability for further analysis. Furthermore, multivariate outliers were examined using the Mahalanobis distance criterion p1 < 0.001 (Kline, 2015). There were 20 observations that could be considered significant outliers and should be excluded from the sample. The deletion of 20 observations resulted in a data loss of as much as five percent, for this reason, this outlier was omitted, resulting in 373 observations remaining for further analysis. After eliminating outliers (20 observations), Mardia's multivariate kurtosis coefficient decreased by 79.02 percent, from 20,575 to 1,626. Thus, elimination has reduced the multivariate abnormality. The value of skewness and kurtosis also decreased, indicating a decrease in univariate abnormalities. The multivariate kurtosis was below the recommended value of 1.96 which made the data in an acceptable state. Therefore, the data were feasible to be used in further analysis.

Furthermore, multicollinearity problems were identified by testing the value of interconstruct correlation and factor loadings. The results of the construct correlation test and factor loadings were all below 0.9. Thus, the multicollinearity problem did not seem to affect the data analysis (Hair et al., 2012). Furthermore, with the achievement of the SEM assumption, the next analysis can be carried out, namely testing the validity of the measurement model or CFA.

#### 8.3 Validation of the measurement model

The validity of the measurement model of this study used confirmatory factor analyses (CFA) analysis. The first stage of this test required the evaluation of the model fit based on the predetermined goodness-of-fit (GOF) statistic value (Hair et al., 2010). A model is said to be fit if it meets the significant chi-square ( $\chi$ 2) and normed chi-square values are between 1 and 5, the CFI and TLI values exceed 0.9, while the RMSEA and SRMR do not exceed 0.08. The results of the fit test of the first stage model obtained a significant GOF value, namely x2

= 2877.616 (df = 1059, p = 0.000) which was significant at  $\alpha$ =0.05, the x2/df value was equivalent to 2.717, SRMR of 0.036 and RMSEA of 0.066. However, two fit criteria were not met, namely the CFI value of 0.856 and the TLI value of 0.846.

To meet the overall model fit, model modifications and studies on the standard residual covariance matrix were carried out. The results of the analysis showed that the items X30, X32, X33, X34, and X37 had large residual values, namely 4.636, 4.450, 5.038, 4.007, and 4.926. Since the residuals should not exceed the range of  $\pm 4$  (Byrne, 2016), all five items have the potential to fail the model to reach GOF. The items were deleted, and the measurement model was reset. Furthermore, in the modification index (MI) test, it was found that there was one value that exceeded 100, namely the error terms e22 and e21 showing an MI value of 109,355. Then after removing item e22, the measurement model was following the proposed level of conformity. The final result of the conformity index met the acceptable value and was significant for x2 (1690,791), (df = 791, p = 0.000) at = 0.05, value x2/df (2.119), RMSEA (0.055), SRMR (0.031), CFI (0.904) and TLI (0.908). Thus, the results of the measurement model test have met the model fit criteria.

After meeting the model fit criteria, the validity assessment (AVE) must be at a value > 0.5) and reliability (CR) must be at a value > 0.70). The test results found that the AVE and CR values were met. The convergent validity test showed that the AVE value for each construct was greater than 0.5, the CR value was greater than 0.7, and the standard load factor for all items was more than 0.5. Furthermore, the construct discriminant validity shows the square root value of AVE for each satisfactory construct. Thus, the assessment of validity and reliability was proven and reached the satisfactory criteria (Figure 2).

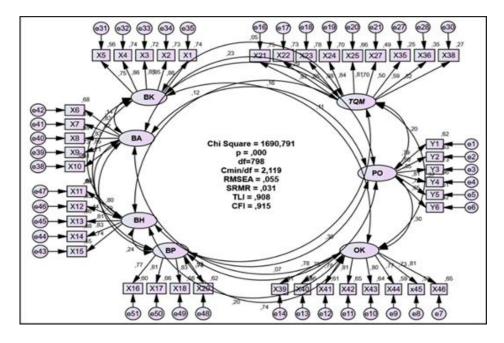


Figure 2: Modified measurement model

# 8.4 Hypothesis testing

Based on the proposed hypothesis, then the hypothesis testing was done through direct relationship analysis. The structural model suitability test obtained shows the value of  $x^2 = 1701.553$  (df = 799, p = 0.000) significant,  $x^2/df = 2.130$  below 5, CFI = 0.914 and TLI = 0.908

above 0.9 and, RMSEA = 0.055 and SRMR = 0.034 lower than 0.08. Therefore, the overall structural model is suitable for testing the proposed hypothesis.

The first equation tested shows that the value of R2(squared multiple correlation) was equivalent to 0.116 variances in TQM, translated through the constructs of clan culture, adhocratic culture, hierarchical culture, and market culture. In particular, market culture ( $\beta$  = 0.266, p < 0.001) was the only cultural factor that significantly and positively affected TQM. The influence of clan culture ( $\beta$  = 0.013, p> 0.05), the influence of adhocratic culture ( $\beta$  = 0.017, p> 0.05) and hierarchical culture ( $\beta$  = 0.038, p> 0.05) were not significant on TQM, although their influence positive. Thus, H1d is supported, whereas H1a, H1b, and H1c are not supported. The findings of this study suggest that perceptions of TQM can be enhanced through an emphasis on higher market cultural practices.

The second equation tested shows that the R2 value was equivalent to 0.605 variances in entrepreneurial orientation, described through the constructs of clan culture, adhocratic culture, hierarchical culture, and market culture. In particular, adhocratic culture ( $\beta$  = 0.235, p < 0.001) and market culture ( $\beta$  = 0.638, p < 0.001) were positively significant cultural factors, influenced by entrepreneurial orientation. The influence of clan culture ( $\beta$  = 0.016, p> 0.05) and hierarchical culture ( $\beta$  = 0.018, p> 0.05) was not significant on entrepreneurial orientation, although the effect was positive. Therefore, H2b and H2d are supported, while H2a and H2c are not supported. The findings of this study suggest that perceptions of entrepreneurial orientation can be enhanced through an emphasis on practices of adhocratic culture and higher market culture. However, among the two significant cultures, market culture is the most dominant factor influencing entrepreneurial orientation.

The third equation tested shows that the value of R2 was equivalent to 0.185, where the variance in organizational performance was described by clan culture, adhocratic culture, hierarchical culture, market culture, TQM, and entrepreneurial orientation. In particular, clan culture ( $\beta$  = 0.269, p < 0.001), TQM ( $\beta$  = 0.121, p < 0.05) and entrepreneurial orientation ( $\beta$  = 0.406, p < 0.001) were factors that significantly and positively affected organizational performance. Market culture ( $\beta$  = 0.239, p < 0.05) was a factor that had a significant and negative effect on organizational performance. The market culture was the most dominant factor influencing organizational performance. The influence of hierarchical culture ( $\beta$  = 0.033, p>0.05) was not significant on organizational performance, although the effect was positive. The influence of adhocratic culture on organizational performance was not significant and negative ( $\beta$  = 0.016, p>0.05). Accordingly, H3a, H3d, H4, and H5 are supported, while H3b and H3c are not supported. The findings of this study suggest that perceived organizational performance can be enhanced through an emphasis on higher clan culture practices, TQM, and entrepreneurial orientation. However, a market culture that is too high can affect organizational performance.

Overall, seven of the 14 direct relationships tested were significant. Therefore, the seven hypothetical relationships proposed in H1d, H2b, H2d, H3a, H3d, H4, and H5 are supported.

## 9. Discussion of Research Findings

The focus of this study is to see the influence of organizational culture, TQM, and entrepreneurial orientation on company performance. This study aims to determine the significant effect of organizational culture (clan, adhocratic, hierarchy, market), TQM, and entrepreneurial orientation on company performance. The results of the analysis found that seven research hypotheses had been achieved. In particular, the findings show that organizational performance is significantly and positively influenced by TQM, entrepreneurial orientation, and one of the dimensions of organizational culture, namely clan culture, and organizational performance is significantly and negatively affected by market culture. The effect of hierarchical culture is not significant on organizational performance, although the effect is positive. The influence of adhocratic culture on organizational performance is not significant and negative.

Furthermore, TQM is only significantly and positively influenced by market culture. Besides that, the influence of clan culture, adhocratic culture, and hierarchical culture are not significant on TQM, although the effect is positive. Meanwhile, the entrepreneurial orientation has a positive effect, which is significantly and positively influenced by adhocratic culture and market culture. Moreover, the influence of clan culture and hierarchical culture is not significant on entrepreneurial orientation, although the effect is positive. This finding support previous studies that organizational culture is most suitable for the successful implementation of TQM which comes from a focused and flexible organizational culture (Patyal et al., 2020); entrepreneurial orientation is supported and influenced by organizational culture (Shahzad et al., 2017); TQM affects organizational performance (Al-Dhaafri and Alosani, 2020); higher perceptions of entrepreneurial orientation lead to higher levels of performance (Aloulou, 2018). The rejected research hypothesis was since respondents in this study may see this variable as less important to company performance. In other words, the company's performance cannot be represented by these variables.

This study has provided empirical evidence about the influence of organizational culture's dimension, TQM, and entrepreneurial orientation that can affect the performance of herbal companies in Indonesia. Based on the findings of this study, further research is proposed to examine several other strategies for improving the performance of herbal companies in Indonesia. Besides, further research can emphasize the influence of the variables in this study, whether adjusted for one or a combination of several additional variables. Further research is also proposed to add different perceptions and perspectives by involving various respondents such as the industry in other fields and the location is expanded to several countries such as Malaysia, Singapore, Thailand, and others.

#### 10. Conclusions

This study attempts to investigate one aspect of the company's performance development by looking at the potential for selecting the right organizational culture, implementing TQM, and developing an entrepreneurial orientation. Studies show that the selection of organizational culture plays an important role in improving TQM (Patyal et al., 2020); entrepreneurial orientation is supported by organizational culture (Abdullah et al., 2017);

performance is driven by entrepreneurial orientation (Khedhaouria et al., 2020). The results of the analysis show that the three variables proposed, namely organizational culture (clan, adhocratic, hierarchy, market), TQM, and organizational entrepreneurship have a significant effect on company performance. Therefore, every increase and decrease in organizational culture, TQM, and entrepreneurial orientation will have an impact on the ups and downs of company performance. This finding provides an overview and perception that a good organizational culture, TQM, and entrepreneurial orientation are very important in influencing the improvement of company performance.

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