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The relation of clinical governance climate on quality of care mediated by patient safety culture

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ABSTRACT

The hospital organization determines quality of care (QOC) from health services; however, there are many challenges due to the different backgrounds of healthcare workers. Essentially, governance is needed to guarantee a process oriented toward clinical outcomes. Unfortunately, research on clinical management with dimensional measurements conducted in private hospitals is still scanty. This study aimed to investigate the relationship between clinical governance climate (CGC) on QOC mediated by a patient safety culture (PSC) and the control variable adaptation to workload in relation to QOC. Participants were healthcare workers in two private hospitals that have been fully accredited; 416 participants met the requirements. Data were collected by distributing questionnaires in March 2023. Data were analyzed through partial least square – structural equation model (PLS-SEM). The study result indicated a significant positive relationship between CGC and PSC (β=0.851, p-value<0.05). Further, a positive relationship between PSC to QOC (β=0.654, p-value<0.05) was established. However, insufficient evidence indicates a direct relation between CGC on QOC (p-value>0.05). The role of PSC as a full mediating was confirmed (β=0.557, p-value<0.05, CI 95% 0.441-0.677). The finding of this study is the importance of CGC relation to QOC mediated by PSC in private hospitals.

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1. INTRODUCTION

The clinical governance of hospital services is essential; the hospital strives for this governance to be carried out properly. It is well known that the quality of health services in hospitals is related to a favorable clinical governance climate (CGC) [1]. The interest in organizational contributions to the delivery of care has risen significantly in recent years, especially in the patient-centric paradigm [1], [2]. Hospital management was challenged to deliver quality care to ensure the hospital's performance and patient outcomes. This effort involves researchers, practitioners, and policymakers identifying ways to improve care by improving the organizations providing high-quality care. However, this is not easy in regard to the complexity of healthcare organizations, the background and competency of healthcare, and also the role organization's culture, which is influenced by systems of care [1], [3]–[5]. To cope with that challenge, It is vital to consider the leadership and governance in the hospital [1], [2], [6], [7]. According to hospital accreditation, there are two types of governance in hospitals: hospital governance and clinical governance.

Since the quality of care (QOC) is close to the clinical outcome, this study focuses more on clinical governance. The approach used is the climate to measure the practice of clinical governance [4]. Therefore,

management needs to assess the CGC. There is evidence to understand that the relationship between organizational characteristics and QOC differs across healthcare settings, such as in the hospital. Hence, the relationship across these settings may need to be clarified [6], [7]. Previous research shows that the implementation of CGC has a relationship with the QOC in hospitals [8].

QOC is paramount in healthcare services. However, the delivery of quality care in hospitals does not always meet expectations, due to the diverse backgrounds of knowledge, experience, and attitudes of healthcare workers. This also happens in private hospitals [9], [10]. Even though standard operating procedures and clinical pathways have been regulated and made, human error can still occur due to human factors [3], [11]. Therefore, study in this field is still needed particularly from the hospital managerial approach. Healthcare workers who work with a large workload and are also influenced by stress factors may not act according to the directions [12]–[15]. Therefore, conditions are needed that can continuously strengthen compliance with the rules that apply in hospital organizations. QOC is a major concern in hospitals, including private hospitals. The patient's recovery must be given top priority. Patients must be free from the risk of medical errors [11], [14], [16]. Patients who receive quality health care are likely to be satisfied. QOC will have an impact not only on patients but also on the performance of hospital organizations and service systems [3], [17]. Thus, healthcare facilities must have a system that makes QOC well implemented.

Medical practices and patient safety culture (PSC) are closely intertwined, as patient safety is a fundamental aspect of healthcare delivery [18]–[20]. Medical practices that follow evidence-based guidelines and best practices are essential for ensuring patient safety. By utilizing established guidelines and protocols, healthcare professionals can provide standardized and safe care to patients. Adhering to evidence-based practices minimizes the risk of errors, complications, and adverse events, contributing to a positive PSC. By integrating patient safety principles and practices into medical routines and workflows, medical practices can foster a PSC. This culture emphasizes patient-centered care, open communication, continuous learning, and proactive risk identification and mitigation. Ultimately, the concern is to create an environment where patient safety is a shared responsibility and a core value across the organization. However, the study in this field is still limited in developing nations, thus more research is needed in this area [21].

PSC is critical in hospital healthcare service. PSC will shape healthcare employees' attitudes, views, and perceptions of patient safety. Previous study on safety culture, patient safety, and QOC have been done in hospital settings [22], [23]. However, from previous studies, not many have conducted research on PSC using dimensions and empirically tested its direct relationship with QOC [20], [24]. Therefore, this study intends to investigate the relation of PSC on QOC in the private hospital context.

In the hospital organization, there is a formal structure, but there are also activities that are coordinated by hospital committees, for example, medical committees. This function is important to ensure clinical governance is running well. Clinical governance is essentially a system that guarantees that health service providers are responsible for continuously improving the quality of their services and guaranteeing the provision of services of a high standard. Clinical governance that takes place effectively can encourage work methods that comply with regulations and ultimately form a work culture related to patient safety. Previous studies have shown that there is a significant relationship between clinical governance (CG) and PSC [1], [24].

The workload (WOL) of healthcare workers in hospital services is one of the challenges in managing it. In this study, we will also look at the relation between perceptions of adaptable workload from healthcare workers and QOC. The perceived adaptable workload is become a moderating variable on QOC in this study [13], [25], [26].

In previous studies, it was found there was a positive relationship between CGC and QOC; the better the implementation of CG in the hospital, the better the delivery QOC [9], [27]. However, there are still few studies that integrate the role of CGC and PSC on QOC in hospitals. PSC can be seen as a culture resulting from governance that is enforced by hospital management and become a common practice adopted by employees [13], [24], [28]. In this context, PSC can mediate the relationship between CGC and QOC. Based on that consideration, this study attempts to propose a model in which CGC can relate to QOC through PSC as mediation [6], [10], [13], [29], [30].

This approach can provide a new contribution to explain how the CGC can be beneficial through a patient-oriented work culture, which appears as a PSC. CGC like PSC should be seen as a multidimensional construct [17], [20], [31]. Both of these constructs should be measured by their dimensions.

In this context, PSC can mediate the relationship between CGC and QOC. Based on that consideration, this study attempts to propose a new model in which CGC can relate to QOC through PSC as mediation. This approach can provide a contribution to explaining how the CGC can be beneficial through a patient-oriented work culture, which appears as a PSC [10], [20], [31]–[33].

CGC like PSC, is a multidimensional construct [17], [20], [31]. This construct should be measured by looking at its dimensions. However, there is still limited empirical research that examines the construct

relationship with a multidimensional approach. Hence, this study intends to provide a new perspective by measuring CGC and PSC through its dimensions. This can be done with structural equation modeling (SEM), where CGC and phonocardiogram (PCG) are high-order constructs (HOC).

This study proposes a conceptual framework or research model in which CGC is the independent variable, QOC is the dependent variable, and PSC is the mediating variable. This research model will be tested empirically with participants who are healthcare workers from private hospitals. This is relevant because CG practice in private hospitals has not been widely studied. However, CG in private hospitals is often not optimal. In private hospitals, the professionals or specialists appointed for CG supervision are busier treating patients than carrying out organizational development functions. This study took the setting in two well-known accredited private hospitals.

2. METHOD

This study is a quantitative cross-sectional adopted previous research model through a self-administered questionnaire distributed to healthcare workers from two private hospitals group in Cikarang West Java and Tangerang Banten. This group hospital is the one well-known group in the area JABOTABEK (Jakarta, Bogor, Tangerang, and Bekasi), fully accredited by national standards. This hospital group was an open public company and listed on the stock exchange of Indonesia. One of the hospitals in Tangerang Banten was accredited by Joint Commission International (JCI), which is a total capacity of bed above 250. The research population is all healthcare workers who work in the hospitals. The research sample in this study used the census sampling method. The inclusion criteria of this study are healthcare workers, categorized by local regulations in Indonesia, who already work in the hospital for one year or more. Data were collected for 14 days during the end of March 2023.

The survey started with a permission form. No personal information was recorded, and participants were free to leave the survey at any time without providing a reason. Our study sample consisted of a total of 416 individuals who gave their informed consent and answered the questionnaire. The study received ethical approval from the Institutional Review Board of Pelita Harapan University Medical Research Council 007/M/EC-RFeb/II/2023.

A survey form with 42 questions was used to collect data; it was self-administered and included nine filtering questions and three standardized, valid, and reliable Likert-scale instruments for; i) CGC survey [7], ii) Safety attitudes questionnaire [33], iii) Perceived QOC survey [25], and iv) Adaptable Workload survey [34]. The survey used a questionnaire consisting of 3 sections, the first section consists of informed consent for the purpose of this study, voluntarily, and anonymously, and will be used only for academic (non-commercial) purposes. The second section consists of respondent profiles, and the third section is a research question consisting of four parts. The CGC was assessed using 14 questions on five dimensions of CGC, such as: i) Planned and integrated quality improvement (5 items), ii) Proactive risk management (3 items), iii) Absence of unjust blame and punishment (3 items), iv) Training and development opportunities (2 items), and v) Organizational learning (1 item). The safety attitudes questionnaire was assessed using five dimensions, such as; i) Teamwork climate: perceived quality of collaboration between personnel (5 items), ii) Safety climate: perception of strong and proactive organizational commitment to safety (5 items), iii) Job satisfaction: positivity about the work experience (5 items), iv) Perception of management: approval of managerial action (4 items), v) Working condition: perceived quality of the work environment and logistical support (4 items). The perceived QOC was assessed using four questions. The adaptable workload was assessed using 1 question.

Clinical governance is one part of the hospital's complexity organizational structure. Its position in terms of clinical outcomes and healthcare quality is crucial [4], [5], [7]. Many studies have been conducted to determine the outcomes of the link between CGC and QOC [1], [8]. Therefore, this study attempts to deploy psychology an independent variable. In this study, CGC was analyzed using dimensional analysis in partial least square – structural equation model (PLS-SEM) and predicted further the role of this independent variable and indicator to support PSC [3], [4], [23]. Within the healthcare sector, some studies have found CGC to be an important antecedent of PSC [1], [4], [8]. The definition of CGC is a system that guarantees that health service delivery organizations are responsible for continuously improving the quality of their services and guaranteeing service delivery to a high standard by creating an environment where excellent service will develop [4], [8].

QOC is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes. It is based on evidence-based professional knowledge and is critical for achieving universal health coverage. As countries commit to achieving health for all, it is imperative to carefully consider the QOC and health services [11], [34]. PSC is a product of values, attitudes, competencies, and behavioral patterns of individuals and groups that determine the commitment, style, and ability of a healthcare organization towards patient safety programs [24], [31]. CGC is measured with five reflective dimensions, and PSC is measured with five reflective dimensions as seen at Figure 1 the research design.

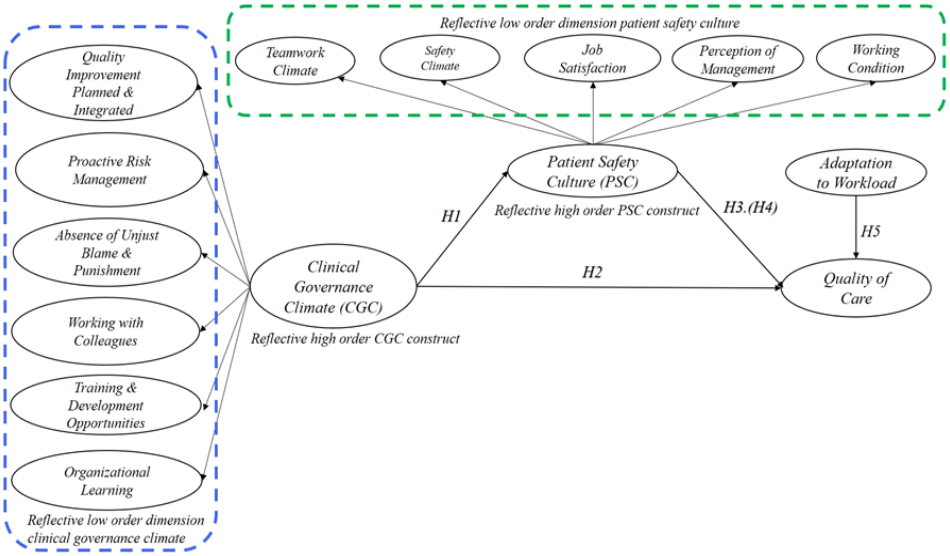

Figure 1. Research framework

The data analysis method in this research uses a multivariate approach with PLS-SEM in regard to the model complexity [35], [36]. PLS-SEM with reliable smart PLS is used to measure models with HOC dimensions, as we see in Figure 1. Dimensionality in this study was measured by a new method, namely two stages method. In this methode, there are outer and inner model. Another name for outer model is measurement model. This dimension measurement method is considered more valid than repeated orders. In this two-stage research, in the first stage, the low order constructs (LOC) is directly connected to the dependent variable, it is call disjoint first stage outer model, as we see in Figure 2 [37]. After that, in the second stage, a data file is created with latent variable (LV) scores. And then, LV scores become the indicators for the HOC, which are CGC and PSC [37]. In regard to determine whether the indicators are reliable and validity to measure constructs, there are four parameters in the measurement using PLS-SEM analysis, namely indicators of reliability, construct reliability, construct validity, and discriminant validity. The second stage (inner model) measures the quality of the model and its significance and the inner model is done through bootstrapping. In PLS-SEM, a predictive model is also carried out using a new method, namely cross-validated predictive ability test (CVPAT).

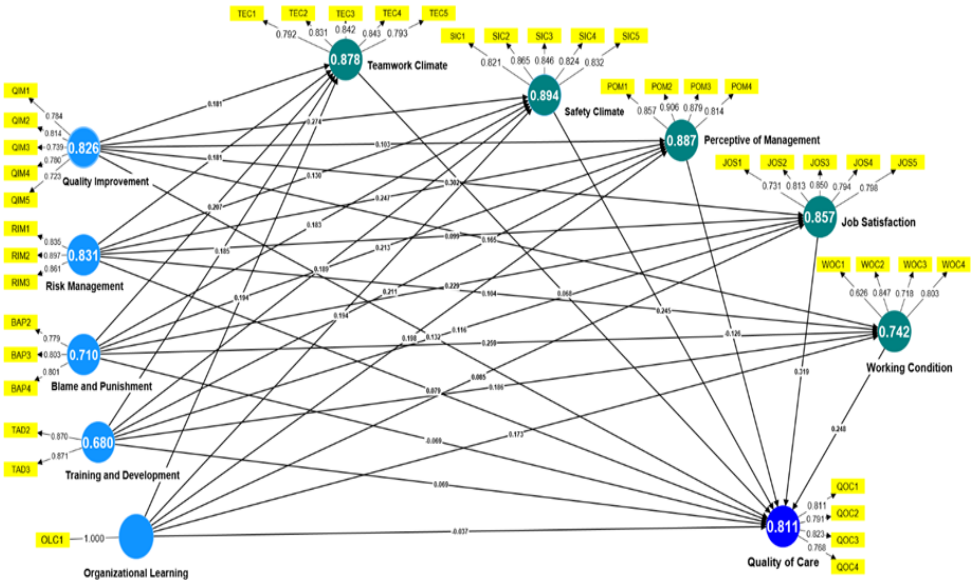

Figure 2. First stage outer model

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Respondent's demographic result

Summary data from the demographics of the respondents are shown in Table 1 respondents profile. There are 207 (50%) of the respondents aged between 18-<35 years and 209 (50%) of the respondents were aged between 35-57 years. Respondents were dominated by females as much as 74% (307) and 26% (109) were male. And from marital status, as much as 76% (315) of respondents with married status, and 24% (101) are still single, with tenure dominated in the range 3->5 years as much as 84% (351), followed by tenure>1-<3 years as much as 16% (65). The composition of the respondents based on their profession was dominated by nurses with 58% (242), followed by allied healthcare with 29% (120) and doctors with 13% (54).

Table 1. Respondents profile

Description	Categories	Sample (n)	Percentage (%)
Age	18-<35 years old	207	50%
	35-57 years old	209	50%
Total		416	100%
Sex	Male	109	26%
	Female	307	74%
Total		416	100%
Maritaltatus	Married	315	76%
	Single	101	24%
Total		416	100%
Length of work	>1-<3 years	65	16%
	3->5 years	351	84%
Total		416	100%
Profession	Medical Doctor	54	13%
	Nurse	242	58%
	Allied health professional	120	29%
Total		416	100%

3.1.2. Measurement model

To assess the indicator of reliability, the outer loading was measured, and several indicators were eliminated that were not in accordance with the recommended set value limit, which was 0.600. If the value of the indicators was greater than 0.600, then the indicators were considered reliable to measure each research item [38], [39]. There were 41 research indicators that met the outer loading criteria. The results of the reliability and validity tests can be seen in Table 2 (see Appendix) first stage reliability and validity analysis [40].

The final step in evaluating the measurement model was to test its discriminant validity through heterotrait-monotrait (HT/MT) ratio, which was believed to detect discriminant ability more accurately [41]. The calculation results of first stage discriminant validity with HT/MT ratio were presented in Table 3 first stage discriminant validity, where all indicators were specified to measure their respective construct, the recommended value was below 0.9, so it was concluded that all the indicators in this research model had been well discriminated against, so they could measure their respective constructs.

Table 3. First stage discriminant validity (low order construct)

Dimension	BAP	JOS	OLC	POM	QIM	QOC	RIM	SIC	TEC	TAD	WOC
Blaming and Punishment											
Job satisfaction	0.759										
Organizational learning	0.566	0.486									
Perceptive of management	0.816	0.862	0.651								
Quality improvement	0.837	0.731	0.466	0.707							
QOC	0.724	0.850	0.503	0.762	0.767						
Risk management	0.788	0.666	0.616	0.803	0.815	0.719					
Safety climate	0.806	0.847	0.621	0.880	0.773	0.847	0.758				
Teamwork climate	0.801	0.790	0.625	0.837	0.725	0.772	0.765	0.899			
Training and Development	0.817	0.693	0.720	0.804	0.715	0.729	0.808	0.808	0.780		
Working condition	0.863	0.777	0.630	0.901	0.724	0.842	0.742	0.840	0.766	0.818	

QIM: Planned and integrated quality improvement, RIM: Proactive risk management, BAP: Absence of unjust blame and punishment, TAD: Training and development, OLC: Organizational learning, TEC: Teamwork climate, SIC: Safety climate, JOS: Job satisfaction, POM: Perception of management, WOC: Working condition, QOC: QOC

After the first stage of analysis (reliability, validity, and HT/MT) was accomplished, the second stage was established. In this second stage, LV scores dimension or LOC become indicators for high order constructs (HOC), namely CGC and patient safety climate [37]. An evaluation of the outer model of the second stage and the outer model of the second stage was carried out with LV scores and the result was depicted in Figure 3 second stage outer model. All outer loading values at the second stage were above 0.708 as required, so it could be said that this model had reliable indicators [41]. The test results are shown in Table 4 second stage outer loading.

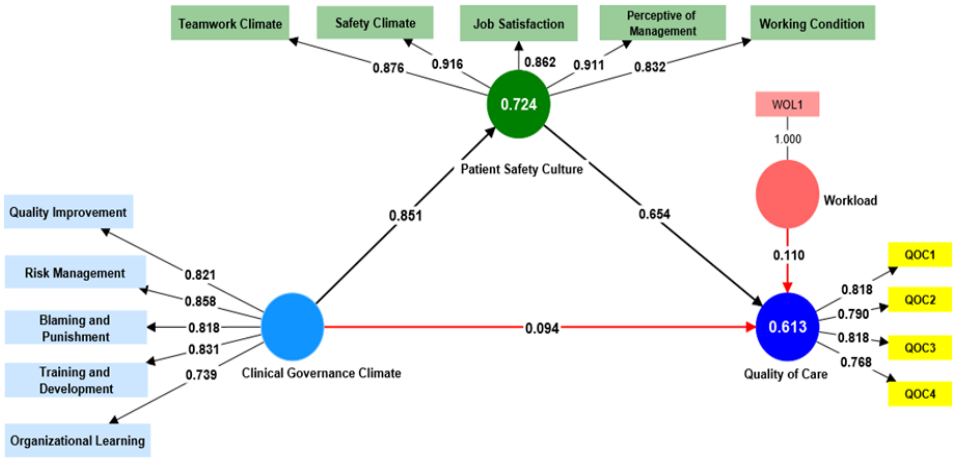

Figure 3. Second stage outer model. Blue boxes LV scores for HOC CGC, green boxes LV scores for HOC PSC

Table 4. Second stage outer loading

Variabel (High order)	Indicator	Outer loadings	Result
CGC	LV scores quality improvement	0.821	Reliable
	LV scores risk management	0.858	Reliable
	LV scores blaming and punishment	0.818	Reliable
	LV scores training and development	0.831	Reliable
	LV scores organizational learning	0.739	Reliable
	LV scores teamwork climate	0.876	Reliable
	LV scores safety climate	0.916	Reliable
PSC	LV scores job satisfication	0.862	Reliable
	LV scores perceptive of management	0.911	Reliable
	LV scores working condition	0.832	Reliable

Note: LV scores= latent variable scores

Furthermore, Cronbach's alpha, composite reliability, and point estimated (rho_a) values were used to examine LV scores for realiability consistency. For validity was used average variance extracted (AVE). As seen in Table 5 second stage construct reliability and validity, showed the outcomes of analysing this study.

Table 5. Second stage construct reliability and validity

Variable	Cronbach's alpha	Composite realiability	Point estimated (rho_a)	AVE
CGC	0.872	0.907	0.876	0.663
PSC	0.927	0.945	0.928	0.774
QOC	0.811	0.876	0.815	0.638

According to the findings of this test, all LV scores fell between 0.7 and 0.95 as the lowest and upper limits. As the result, all LV scores for this variable were reliable and met their respective constructions. The AVE value of the LV scores in this study model may be found to be greater than 0.50 [37]. The highest AVE value is 0.774, while the lowest is 0.638. As a result, the LV scores in this research model could be considered legitimate for jointly measuring their respective constructs.

As explained above, validity tests were carried out to determine whether a construct or variable had indicators that had been discriminated against to measure the construct specifically. The method used was to assess the HT/MT. The test results at the second stage as in Table 6.

Table 6. Second stage discriminant validity

Variable	CGC	PSC	QOC	Workload
CGC				
PSC	0.946 CI 95% (0.921-0.969)			
QOC	0.813 CI 95% (0.756-0.866)	0.889 CI 95% (0.846-0.927)		
Workload	0.367 CI 95% (0.265-0.464)	0.37 CI 95% (0.274-0.464)	0.421 CI 95% (0.324-0.515)	

CI: confidence interval

After the outer model analysis, the inner model analysis evaluates the model's ability to explainatory power the variables' relation using R-square (R2) and path coefficients. The path coefficients would estimated the relationships' power and direction, ranging from 0 to 1. The bigger the number, the greater explanatory power it had. In general, it could be divided into three categories: significant was 0.75, moderate was 0.5, and weak was 0.25. The model should next be tested for out-of-sample prediction potential by running PLS-predict under the premise that the sample size is sufficient [35].

Table 7. R-square

Variable	R^{-2}
PSC	0.724
QOC	0.613

As we saw in Table 7 the R2 value for the QOC variable was 0.613, we concluded the dependent variable of this research was moderate explanatory power, while the QOC variable with R2 value of 0.724 as a mediating variable, could be classified in the moderate explanatory power [37]. This showed that this mediating variable could be explained by 72.4% of the independent variable, while the remaining 61.3% was an explanatory path without going through the mediating variable. From this analysis test, it could be concluded that the independent variable could increase its explanatory power if the PSC mediation variable was used to lead to the dependent variable QOC. With these results, it could be said that the variables in this research model could moderately explanatory power the dependent variable in this research model. It could be concluded that this research model could be used or replicated in further studies with different populations. Moreover, this research model is also capable of being further developed by testing larger or more specific samples, and by adding variables or mediations.

Bootstrapping (inner model) analysis could be used to assess hypothesis testing, as illustrated in Table 8 and Figure 4. Four of the five hypotheses were accepted, with a positive standard coefficient that was consistent with the proposed hypothesis and both the p-value and corrected p-value of 0.05 with CI 5% and 95%. Out of all, CGC had the most substantial relation to PSC (0.724), followed by the relation of PSC on QOC (0.613). This study meant if there was a positive CGC, it would increase PSC (safety attitudes) and improve QOC.

Table 8. Hypothesis test results

	Hypothesis	Standardize coefficient	p-values	Corrected p-value	Confidence Interval		Result	f^2
					5.00%	95.00%		
H1	CGC-> PSC	0.851	0.000*	0.000**	0.822	0.878	Supported	2.624
H2	CGC-> QOC	0.094	0.118^{NS}	0.118^{NS}	-0.032	0.232	Not Supported	0.006
H3	PSC -> QOC	0.654	0.000*	0.000**	0.518	0.783	Supported	0.300
H4	CGC-> PSC -> QOC	0.557	0.000*	0.000**	0.441	0.667	Supported	N/A
H5	Workload-> QOC	0.110	0.003*	0.003**	0.046	0.178	Supported	0.127

*Corrected p-value based on Bon-Feroni, in which this value is calculated from p-value (0.05)/total path hypotheses studied in this study [0.05/4=0.0125]. There are four of the five hypotheses that empirically tested facts can support.

In addition to R2, as the explanatory power, the model predictive power could be determined through a newer approach called the CVPAT. This method is preferable since R2 only captures in-sample, while CVPAT is carried out of sample comparison approach. CVPAT was a predictive approach based on multiple cross-validation procedures. Table 9 presented the overall CVPAT data that average indicators (IA) and linear models had negative values [42]. Hence, this model was assumed to have a strong predictive ability, hinting that replication could be done in other hospitals with other varied populations [43].

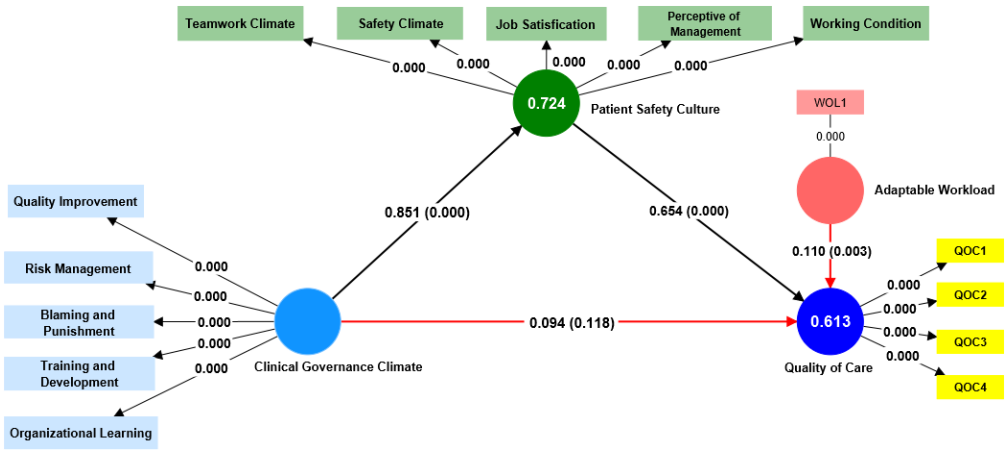

Figure 4. Second stage inner model

Table 9. CVPAT

Variable	PLS-SEM vs Indicator average (IA)		PLS-SEM vs Linear model (LM)	
	Average loss difference	p-value	Average loss difference	p-value
PSC	-0.559	0.000	-0.005	0.309
QOC	-0.117	0.000	-0.001	0.642
Overall	-0.363	0.000	-0.003	0.324

PLS-prediction-oriented segmentation (PLS-POS) was an analysis method that didn't have assumptions about data distribution and algorithms, implemented with three features, namely, i) formation of homogeneous segments, ii) considered the appropriate distance size for PLS paths with reflective and formative measured for identified unobserved heterogeneity and iii) measured the continuous increase in the estimated value of the objective criteria during algorithm iteration [35], [44]. The purpose of grouping homogeneous segments was to strengthen the predictive power or R2 value of endogenous latent variables compared to the model with the sample as a whole [35]. The focus of the PLS-POS approach was the model with the largest R2 value between certain segments compared to the R2 value obtained from bootstrapping processing. From this test, a model with greater predictive ability could be obtained due to a collection of samples in certain segments with specific characteristics that could be analyzed post hoc for further understanding.

Table 10. PLS-POS

Segmentation	Segment 1	Segment 2	Total
Sample (n)	278	138	416
Percentage (%)	67	33	100
	R^2 Comparison		
Variable	POS Segment1. R^2	POS Segment 2. R^2	Original Sample R^2
PSC	0.763	0.619	0.724
QOC	0.686	0.912	0.613

PLS-POS: Partial least squares-prediction oriented segmentation

PLS-POS results could be seen in Table 10. In the first part of the table you could seen the number of samples in each segment. From a total of 416 samples, 278 samples were obtained in Segment 1 and 138 samples in Segment 2. This number had exceeded the minimum number of samples calculated with an f2 of 0.15 and a power of 80%. In addition, the number of samples in the PLS-POS segmentation results had met the minimum sample requirements for the post hoc test with α=0.05 and ß=90%.

The importance-performance map analysis (IPMA) highlights critical features or indicators managers should prioritize for improvement using mean values of the whole relation and performance [40]. The IPMA could be divided into four quadrants; the top right quadrant displays the aspects to be maintained with relation to the QOC, and the bottom right quadrant highlights the most important areas to concentrate on boosting performance as shown in Figure 5 [40].

The management must have focused first on the quality improvement indicator, followed by active risk management, and indicator for unjust blame and punishment. A positive CGC had a relationship to the QOC and would result in improved clinical outcomes since cultural mediation was connected to PSC.

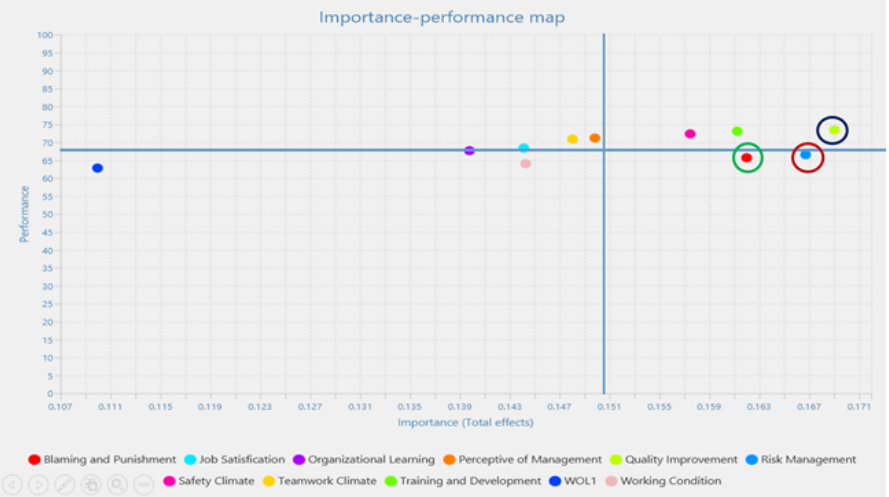

Figure 5. Importance–performance map analysis of indicators

3.2. Discussion

This study aimed to analyze the relationship between CGC on QOC in private hospital settings. This relation was mediated by a PSC as a subset of organizational culture with a patient-centric orientation. To measure the relationship based on the healthcare worker's perspective, the adaptable workload was deployed as a control variable.

The first hypothesis indicated that the CGC variable had a significant and positive relation with PSC. If the perception of the CGC increased, it would also increase the perception of the implementation of PSCby all healthcare workers in the hospital services. These results aligned with previous study [1]. However, that study did not measure by dimensions. Therefore, this study was new contribution to understanding the relationship through the dimensions.

The second hypothesis that stated CGC had a positive relation to QOC, could not be supported by strong evidence to conclude significance since the p-value was greater than >0.05, although it showed a positive direction (β=0.118). This finding is different from previous research with more homogeneous respondents [4], [5]. It might happen regard to the heterogenous respondents in this study related to the background of respondents. This unobserved heterogeneity may contribute the different perspective on CGC. To cope with this heterogeneity, posthoc analysis should be deployed in future study.

The third hypothesis, PSC relation to QOC, confirm supported by this study. Data analysis found significant (β=0.654; p-value 0.000*), these results aligned with the previous study [29]. It concluded that the PSC variable had a significant and positive relation on QOC. If the perception of PSC got stronger among healthcare workers, it would make implementation got better in healthcare services, and significantly increased the QOC in hospital services. From second stage outer model result as shown in Figure 3 explains the dimensionals of PSC that hospital management should be focused are safety climate and perception of management. In regard of safety climate dimension, hospital managers need to create a dashboard of incident report data which is evaluated and monitored regularly. The results of the evaluation benefited for future improvements. In practice, the culture of blaming and punishment must be avoided in that process. According to perception of management dimension, hospital management must provide the employee support base on their need and facilitate them according to their competency.

The findings of this study, the fourth hypothesis was supported, indicating the role of PSC which significantly mediates the relationship between CGC and QOC (β=0.557; p-value 0.000*). When healthcare workers' perceptions of CGC improve, so will their perceptions of PSC, and thus their QOC. From this analysis, it concluded that PSC fully mediated CGC on QOC which mean CGC only established the relation to QOC through PSC. This results was align with the previous study [1]. Fully mediated, it meant the CGC relationship must go through PSC [45]. This finding is very beneficial to extend knowledge the implementation of CGC should be carried by the spesific organizational culture such as PSC.

The fifth hypothesis regarding adaptable workload as variable control on QOC, was confirm supported (β=0.110; p-value 0.003*), this result aligned with previous study [34]. However, this previous study not yet measure adaptable workload as a control variable. Therefore, this result provides the new inside that adaptable workload should be consider as a meaningful control variable ini assessing the relation CGC and PSC on QOC. Future study could use the adptable workload as a moderation variable or convert

adaptable workload as adaptive performance. In particuraly, respondent could be separate in groups who have high adaptable workloads and low adaptable ones. This will be benefit to hospital management by utilize the high adaptable workload employees as role models for other healthcare workers.

The importance performance map analysis (IPMA) found there were quality improvement, risk management, and blaming and punishment dimensions should hospital management be focused on achieving a higher QOC in the hospital services. The implications of the research can be beneficial in increasing positive climate of clinical governance by continuously focused on risk management (clinical risk), training and development, and quality improvement could increase QOC. It is necessary to pay attention to implementation PSC in daily services by healthcare workers. Implementation PSC must on conducive safety climate to make healthcare worker feel safe in reporting incidents.

The next analytical test was a test of predictive ability analysis by CVPAT; the results of this test must have a negative result to be declared to have the predictive ability by cross-validation test [43]. From this study, the CVPAT analysis result was the average value for both constructs and overall was found to be negative with p-value<0.05; therefore, it can be concluded that this research model already had a strong predictive ability, so this study can be tested on other populations for further research. Nevertheless, this study has identified certain limitations. Firstly, it was conducted by distributing online questionnaires to respondents, which could have influenced their answers. With this method, it was not feasible to directly monitor the questionnaire filling process. It implies that the respondents' questionnaire completion process lacks direct control over external factors that may have influenced their concentration or understanding of the questions. These external factors could be distractions or environmental conditions. Secondly, the sample in this study was found to be heterogenous, hence needing a post-analysis to identify the problem's cause and create respondents' criteria to ensure better homogeneity. The third limitation is this study did not evaluate the medical committee's performance quality indicators, which is important for effective clinical governance. Future studies should determine the hospital's clinical governance performance first.

4. CONCLUSION

This study had the result that clinical governance as measured by five dimensions and mediated by PSC which is also measured by five dimensions and adaptable workload control variable can significantly relation to QOC. The findings in this study are also in line with the findings of previous studies which state that clinical governance fully mediated by a PSC, thereby increasing QOC in hospitals.

This study emphasizes the importance of hospital management, focusing on proactive risk management, integrated and planned quality improvement, training and development, safety climate, and perception of management. These efforts can positively impact CGC and promote a culture of the absence of unjust blame and punishment. By prioritizing these themes, a healthy CGC can be established and maintained, ultimately leading to high standards of care.

APPENDIX

Table 2. First stage reliability and validity analysis

High order construct	Low order construct (dimension)		Indicators	Outer loading	Result	CA	CR	AVE
Clinical governance climate	Quality improvement	QIM1	In my opinion, in this hospital many ideas and innovations are made to improve the quality of service to patients.	0.784	Reliable	0.826	0.878	0.591
		QIM2	In my opinion, the process for quality improvement is the current focus of the hospital.	0.814	Reliable	0.826	0.878	0.591
		QIM3	In my opinion, quality improvement activities are carried out continuously in this hospital, not only when an incident occurs.	0.739	Reliable	0.826	0.878	0.591
		QIM4	In my opinion, this hospital has a clear vision of what the organization wants to achieve.	0.780	Reliable	0.826	0.878	0.591
		QIM5	In my opinion, this hospital understands that achieving quality improvement requires time and process.	0.723	Reliable	0.826	0.878	0.591

Table 2. First stage reliability and validity analysis (*continue*)

High order construct	Low order construct (dimension)		Indicators	Outer loading	Result	CA	CR	AVE
	Risk management	RIM1	In my opinion, in preparing a list of clinical risks, a systematic assessment is carried out in this hospital.	0.835	Reliable	0.831	0.899	0.748
		RIM2	In my opinion, this hospital has routinely carried out clinical risk register information in making decisions in patient care.	0.897	Reliable	0.831	0.899	0.748
		RIM3	In my opinion, this hospital has already socialized the policy regarding clinical risk management in all units.	0.861	Reliable	0.831	0.899	0.748
	Blaming and Punishment	BAP2	In my opinion, if an incident occurs in this hospital, to prevent the incident from happening again, the improvement focuses on flow/procedure.	0.779	Reliable	0.710	0.837	0.631
		BAP3	In my opinion, in this hospital work assessment is given to provide feedback to staff and directions for improving it.	0.803	Reliable	0.710	0.837	0.631
		BAP4	In my opinion, in this hospital staff are given the opportunity to speak or argue openly among other professional staff.	0.801	Reliable	0.710	0.837	0.631
	Training and Development	TAD1	In my opinion, in this hospital, training is given according to the priorities and needs of the staff.	0.888	Reliable	0.730	0.881	0.787
		TAD2	In my opinion, in this hospital, staff development needs are regularly assessed.	0.887	Reliable	0.730	0.881	0.787
	Organizational Learning	OLC1	In my opinion, in this hospital, teams from various units exchange the good practices they have.	1.000	Reliable	1.000	1.000	1.000
PSC	Teamwork climate	TEC1	In my opinion, the advice given by clinical staff is well received in this hospital.	0.793	Reliable	0.878	0.911	0.673
		TEC2	In my opinion, in this hospital, disagreements between clinical staff can be resolved properly.	0.830	Reliable	0.878	0.911	0.673
		TEC3	In my opinion, in this hospital all staff work together in providing care services to patients.	0.842	Reliable	0.878	0.911	0.673
		TEC4	In my opinion, in this hospital the staff help each other and support each other when there are problems.	0.843	Reliable	0.878	0.911	0.673
		TEC5	In my opinion, in this hospital doctors and nurses work together and have good coordination as a team.	0.793	Reliable	0.878	0.911	0.673
	Safety climate	SIC1	I think that if I am treated as a patient in this hospital, I feel safe.	0.820	Reliable	0.894	0.922	0.702
		SIC2	In my opinion, in this hospital if an incident occurs, it is handled according to applicable standards.	0.865	Reliable	0.894	0.922	0.702
		SIC3	In my opinion, this hospital already has a clear reporting system regarding patient safety.	0.846	Reliable	0.894	0.922	0.702
		SIC4	In my opinion, in this hospital if I do an incident report, I get clear feedback and directions.	0.824	Reliable	0.894	0.922	0.702
		SIC5	In my opinion, this hospital values every incident reporting related to patient safety.	0.833	Reliable	0.894	0.922	0.702
	Job Satisfaction	JOS1	I am satisfied with the results of my work in this hospital.	0.731	Reliable	0.857	0.897	0.637
		JOS2	In my opinion, this hospital has a family-friendly working atmosphere.	0.812	Reliable	0.857	0.897	0.637
		JOS3	I feel comfortable working in this hospital.	0.850	Reliable	0.857	0.897	0.637
		JOS4	I feel proud to work in this hospital.	0.794	Reliable	0.857	0.897	0.637
		JOS5	I feel that my co-workers are enthusiastic about providing services to patients at this hospital	0.799	Reliable	0.857	0.897	0.637
	Perceptive of management	POM1	I feel that the management at this hospital gives full support to the staff.	0.857	Reliable	0.887	0.922	0.748
		POM2	I feel that the management at this hospital has carried out its role in accordance with their respective fields.	0.906	Reliable	0.887	0.922	0.748
		POM3	I feel that the management at this hospital, in dealing with problematic staff, complies with applicable regulations.	0.879	Reliable	0.887	0.922	0.748

Table 2. First stage reliability and validity analysis (*continue*)

High order construct	Low order construct (dimension)	Indicators	Outer loading	Outer loading	Result	CA	CR	AVE
		POM4	In my opinion, in this hospital I get accurate information about patient safety incidents that occur in my unit or from other units whose incidents are related to my unit area.	0.814	Reliable	0.887	0.922	0.748
	Working condition	WOC1	In my opinion, in this hospital the composition of the number of staff in the inpatient room area is in accordance with the number of patients being treated.	0.626	Reliable	0.742	0.8381	0.5672
		WOC2	In my opinion, this hospital provides training in accordance with applicable standards, to new staff who join.	0.846	Reliable	0.742	0.8381	0.5672
		WOC3	In my opinion, in this hospital all information related to diagnosis and treatment plans is easy to find in the patient's medical record.	0.717	Reliable	0.742	0.8381	0.5672
		WOC4	In my opinion, every new employee is supervised (on probation) in this hospital.	0.804	Reliable	0.742	0.8381	0.5672
QOC		QOC1	In my opinion, in this hospital in general, the services provided by health workers to patients are in accordance with the needs and expectations of patients.	0.811	Reliable	0.811	0.876	0.638
		QOC2	In my opinion, the quality of service I provided at my last work service met the quality standards of hospital services.	0.791	Reliable	0.811	0.876	0.638
		QOC3	In my opinion, in this hospital the standard of service quality is increasing from year to year.	0.823	Reliable	0.811	0.876	0.638
		QOC4	In my opinion, when I provide education to patients, it is adequate so that patients understand and are able to repeat it.	0.768	Reliable	0.811	0.876	0.638

QIM: Planned and Integrated Quality Improvement, RIM: Proactive Risk Management, BAP: Absence of Unjust Blame and PunishmentI, TAD: Training and Development, OLC: Organizational Learning, TEC: Teamwork Climate, SIC: Safety Climate, JOS: Job Satisfaction, POM: Perception of Management, WOC: Working Condition, QOC: Perceived QOC, CA: Cronbach's Alpha, CR: Composite Reliability, AVE: Average Variance Extracted

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