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Relationship Between Organisational Culture and Customer Focus on Operational Performance: An Agile Manufacturing Approach

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ABSTRACT

This paper aims to empirically test the relationships between organizational culture and customer focus, and their impact on operational performance in shipbuilding companies in the context of agile manufacturing. This research used a quantitative PLS-SEM method, with 155 respondents from 27 shipbuilding companies in Indonesia, collected via an online survey using random sampling. The results showed that organizational culture does not directly influence operational performance. Meanwhile, customer focus significantly affects operational performance, and it also mediates the relationship between organizational culture and operational performance. This study fills a gap in manufacturing strategy by adopting an agile manufacturing approach to improve the operational performance of shipbuilding companies, which is measured by indicators of construction time, quality, construction cost, and sales revenue. Besides, this study contributes empirical evidence on the relationship between organizational culture and customer focus, and their impact on operational performance in shipbuilding companies.

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1. Introduction

An imbalance between supply and demand, driven by shipyard capacity exceeding customer demand, poses an essential challenge in the shipbuilding industry (Wada et al., 2022). In addition, the shipbuilding market characteristic is highly volatile, making it challenging to plan human resource capacity and leading to delivery delays (Alfnes et al., 2021). Timely delivery is an essential concern of both shipyards and customers. Delays in handing over to customers cause a domino effect, increasing the risk of overproduction, higher costs, and poor quality. So, this situation causes many shipyards to struggle to maintain operational performance.

Various manufacturing strategies and approaches are implemented to improve operational performance, such as lean production, six sigma, continuous improvement, smart production, and total quality management (Tripathi et al., 2022). There are extensive studies on the link between customer focus and operational performance from a quality management approach. Nevertheless, little research has examined the link between organisational culture and customer focus on operational performance in shipbuilding companies through an agile manufacturing approach.

Therefore, this study aims to fill the gap by examining the relationship between organisational culture and customer focus on operational performance from an agile manufacturing approach. Hence, the hypotheses of the research are developed as follows:

H1: Organisational culture (OC) positively influences operational performance (OP)

H2: Customer focus (CF) positively influences operational performance (OP)

H3: Organisational culture (OC) positively influences customer focus (CF)

H4: The relationship between organisational culture (OC) and operational performance (OP) is moderated by customer focus (CF)

This research provides an empirical contribution to practitioners, suggesting that they develop an agile manufacturing strategy to improve corporate operational performance. At the same time, this study introduces a set of indicators for organisational culture, customer focus, and operational performance, thereby reinforcing the agile manufacturing model appropriate for the shipbuilding company.

2. Literature Review

Agile manufacturing is the ability to respond quickly and effectively to customer-driven market changes, enabling organisations to survive and grow in an unpredictable competitive environment (Gunasekaran, 1999). In agile manufacturing models, customer focus is an essential factor for increasing operational and business performance (Dubey & Gunasekaran, 2015; Kumar et al., 2019). The customer focus approach is one of the dimensions of total quality management, an effective way to improve a company's operational performance (Niyi Anifowose et al., 2022). Customer focus is an essential indicator of total quality management, ensuring that the products meet customer needs and expectations for long-term sustainable business (Pham, 2020). However, improving operational performance through managing customer satisfaction remains a significant challenge for the shipbuilding companies in Indonesia.

Customer focus, oriented towards meeting customer needs, is an essential factor in enhancing company performance. A company with high efficiency, effectiveness, and focus on customer satisfaction is superior to its competitors (Rathore & Elwakil, 2020). In the shipbuilding industry, customers have many options for selecting a shipyard to meet product specifications, achieve higher quality, and secure more competitive prices, as customer demand is lower than shipyard capacity. Therefore, a quick response is key to addressing market fluctuations (Abubakar & Wang, 2019). Speed in responding to customer needs affects customers' perception of the company’s responsiveness. The company with differentiation in faster response, excellent service, and complaint resolution will be more profitable (Mandal, 2022).

Meanwhile, the correlation between organisational culture and operational performance is inconsistent, whereas 92.5% of studies show that other variables moderate organisational culture’s impact on operational performance (Rhaimini et al., 2022). The moderators most often tested are TQM, innovation, and organisational commitment, with organisational culture functioning as an enabler rather than a direct determinant of performance. It aligns with the findings of Victoria et al. (2021), who found that organisational culture enhances operational performance through shared values, commitment, regularity, flexibility, and effective interaction. A strong organisational culture creates a corporate identity, increases employee loyalty, and improves productivity. The organisational culture contributes to operational performance as a social and behavioural process rather than a structural one.

On the other hand, Tulcanaza-Prieto et al. (2021) stated that corporate accomplishment is significantly influenced by organisational culture. The involvement dimension is the strongest determinant, followed by adaptability, consistency, and mission. Organisational culture is a stronger predictor of non-financial performance than of financial performance. Besides, Barends & Rousseau

(2022) argue that there is no consensus on the definition or measurement of organisational culture. The relationship between organisational culture and operational performance tends to be positive, but with a small to medium effect size. Evidence of causality is weak due to the dominance of cross-sectional studies and self-reported data. The impact of organisational culture is more consistent on operational performance, innovation, and employee outcomes than financial performance.

The dimensions of organisational culture, customer focus, and operational performance are compiled from previous research using comparative analysis on prominent agile manufacturing frameworks. The organisational culture dimension is measured using six key indicators: organisational structure (OC1), internal and external cooperation (OC2), top management support (OC3), and nature of management (OC4). The customer focus dimension is measured using six key indicators: product quality (CF1), customer response (CF2), customer satisfaction (CF3), product life cycle (CF4), long-term relationship (CF5), and customer-driven innovation (CF6) (Sutrisno et al., 2024). Meanwhile, the indicators of operational performance consist of four key indicators: quality (OP1), construction cost (OP2), construction time (OP3) (Floriano et al., 2009), and the company's sales revenue (OP4) (Gavalas et al., 2022). The indicator of quality in a shipbuilding company is not limited to product quality but also includes compliance with technical specifications, warranty service, and the quality of the production process. Construction costs include materials, labour, and design. Construction time is the duration from the effective contract until ship delivery to the customer. Meanwhile, sales revenue is calculated as the increase or decrease in sales from new ship orders placed by customers during a specific period.

3. Methodology

To obtain valid and reliable research results in testing the hypothesis of the relationship between organisational culture and customer focus on corporate operational performance, this study uses a quantitative PLS-SEM method and a conceptual research model that aligns with the hypotheses as shown in Figure 1.

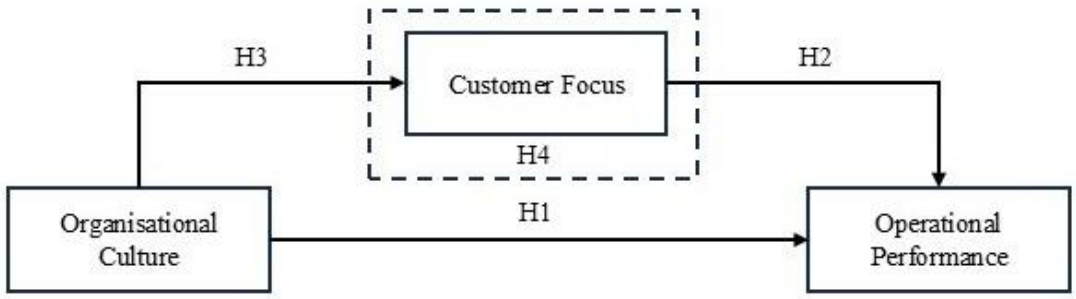

Figure 1. Conceptual model of research
Source: Author's proposal

The target population of this research is the shipyard population in Indonesia, comprising 235 shipyards: 51 per cent repair shipyards, 35 per cent new-building shipyards, 11 per cent fibreglass shipyards, and 3 per cent small new-building shipyards. In line with the objective of the research to examine the relationship between organisational culture and customer focus on operational performance in the shipbuilding companies, the scope of the sample chosen is new shipbuilding shipyards due to the construction of new building is more complex than repair works in terms of management at all stages of the production process, to maximize output and minimize costs (Senturk, 2011).

The cluster random sampling is used with three steps: (1) the cluster group at the sample scope is divided into two clusters: Batam and the outside Batam areas, (2) the number of shipyards from each cluster is taken proportionally; 21 shipyards in the Batam area (25%) and 62 shipyards outside the Batam area (75%), and (3) randomising the sample until the number of respondents is filled according to the cluster grouping.

The number of samples is determined by calculating the minimum sample size required for PLS-SEM analyses, using G*Power software (Faul et al., 2007, 2009). Calculating data input of 6 predictors, 95% power, and 5% margin of error, using G*Power 3.1.9.4 software, resulting in a minimum of 146 samples. An online questionnaire was distributed and obtained 155 valid responses from 27 shipyards. Profile respondents are executives who occupy managerial positions, such as directors, general managers, and managers. Population and sample data are shown in Table 1.

Table 1. Population and sample

Cluster	Shipyard Population (New-build & Repair)		Shipyard Scope (New-build)		Sample / Data Collected			
					Shipyard		Respondent	
	Number	%	Number	%	Number	%	Number	%
Batam	56	24	21	25	7	26	39	25
Outside Batam	179	76	62	75	20	74	116	75
Total	235	100	83	100	27	100	155	100

Source: Data processing

4. Results and Discussion

The assessment was conducted in a two-stage approach using PLS-SEM, including measurement and structural model testing, with SmartPLS 4, version 4.1.0.0.

Measurement model test

The purpose of this test is to assess the validity and reliability of constructs and items. The output of the measurement model test is shown in Table 2.

Table 2. Construct reliability and convergent validity

Construct	Item	Loading (>0.60)*	VIF (<5)**	Reliability		AVE) (≥0.50)***
				Alpha (≥0.70)***	CR (≥0.70)***	
Organisational Culture (OC)	OC1	0.823	2.006	0.844	0.896	0.683
	OC2	0.873	2.371			
	OC3	0.747	1.711			
	OC4	0.857	2.159			
Customer Focus (CF)	CF1	0.805	2.350	0.905	0.927	0.680
	CF2	0.901	4.003			
	CF3	0.854	2.752			
	CF4	0.724	1.674			
	CF5	0.855	2.991			
	CF6	0.797	2.452			
Operational Performance (OP)	OP1	0.805	1.463	0.798	0.866	0.619
	OP2	0.775	1.715			
	OP3	0.865	2.370			
	OP4	0.693	1.524			

* (Chin, 1998); ** (Becker et al., 2015); *** (Hair et al., 2019; Henseler et al., 2016)

Source: Data processing result

The interpretation of the measurement model test is as follows:

(1) The lowest loading value is 0.693, indicating that all items are valid. A loading value over 0.6 indicates that the item explains at least 50% of the latent variation in the variable (Chin, 1998).
(2) The highest variance inflation factor (VIF) value was 4.003. A VIF value below 5 indicates no multicollinearity issues among items (Becker et al., 2015).
(3) The Cronbach's Alpha and CR coefficient are over 0.70, indicating reliable internal consistency (Hair et al., 2019).
(4) An average variant extracted (AVE) value of 0.50 or higher indicates acceptable convergent validity (Hair et al., 2019).

Table 3 shows the validity discrimination test results, where HTMT value below 0.9 indicates validity (Henseler et al., 2015).

Table 3. Discriminant validity – HTMT

Construct	CF	OC	OP
CF			
OC	0.854		
OP	0.648	0.536	

Source: Data processing result

Structural model test

The structural model, shown in Figure 2, was assessed using bootstrap resampling to test the research hypotheses. The hypothesis testing results are shown in Table 6, where the p-value for (OC -> OP) = 0.650 is greater than the alpha coefficient of 0.050, implying the hypothesis that organisational culture (OC) positively affects operational performance (OP) is rejected. In contrast, the p-values of (CF->OP) and (OC->CF) = 0.000 are smaller than the alpha value of 0.050. Therefore, the hypothesis that customer focus (CF) positively affects operational performance (OP) and organisational culture (OC) positively affects customer focus (CF) is accepted. Additionally, the path coefficients for (CF->OP) and (OC->CF) are 0.581 and 0.755, respectively, both > 0.35, indicating substantial relationships (Hair et al., 2019).

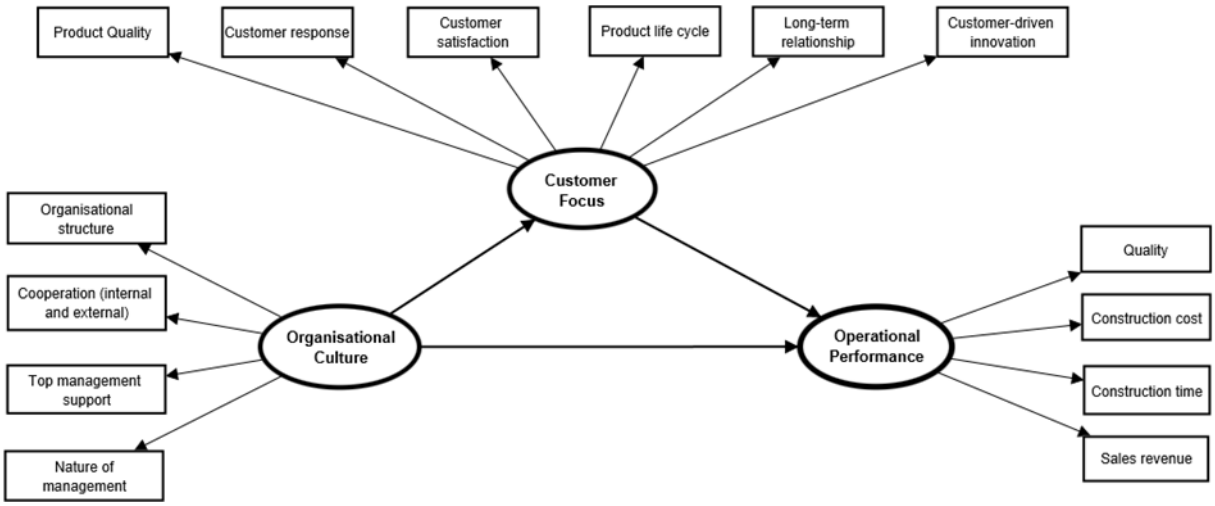

Figure 2. Structural model
Source: Author's proposal

Table 4. Hypothesis test

Hypo-thesis	Relationship	Original Sample	Sample Mean	Standard Deviation	T-statistic	P-value	F-square	Decision
H1	OC -> OP	0.049	0.045	0.107	0.454	0.650	0.002	Rejected
H2	CF -> OP	0.581	0.588	0.061	9.475	0.000	0.189	Accepted
H3	OC -> CF	0.755	0.754	0.043	17.475	0.000	1.323	Accepted
H4	OC->CF->OP	0.408	0.413	0.090	4.556	0.000		Accepted

Source: Data processing result

Furthermore, the model's robustness was tested using R-square and f-square (Henseler & Chin, 2010). The R-square test output is shown in Table 5, where the R-square values of 0.569 and 0.334 are both > 0.33, indicating a moderate relationship with the endogenous construct (Chin, 1998; Henseler et al., 2009). Meanwhile, the f-square for (CF->OP) = 0.189 > 0.15 indicates that customer focus moderately affects shipyard performance, and the f-square for (OC->CF) = 1.323 > 0.35 indicates that organisational culture significantly affects customer focus (Cohen, 1998).

Table 5. R-square test

Construct	R-square	R-square adjusted
CF	0.569	0.567
OP	0.334	0.325

Source: Data processing result

Discussion

This research result aligns with many previous studies, which show that operational performance is influenced by customer focus (Zhao, 2022). Customer response is a key factor of customer focus that enhances operational performance. Speeding up the customer response requires comprehensive alignment between planning activities and business activities to maintain competitiveness amid intensifying global market competition (Stanivuk et al., 2020). Fast and effective customer response is necessary for the shipyard, as the shipbuilding business's characteristic is the customisation of job orders, predominantly driven by the buyer.

Long-term customer relationships are the next important customer focus factor affecting a company's operational performance. According to Papen et al. (2019), improving organisational performance through customer relationship improvement, including relationship trust, commitment, satisfaction, and relationship investment, should be supported by a good service culture from frontline employees who deal directly with customers. From an agile manufacturing view, a partnership with a customer is part of a strategic partnership that plays an essential role in quickly responding to market needs (Gunasekaran, 1998). The shipyard must continue building cooperative relationships with the customer, with a long-term orientation and mutual trust, because this will benefit both parties.

Customer satisfaction is an essential indicator of the implementation of customer focus, encouraging better shipyard operational performance. Customer satisfaction with the quality of the products received and the service during the shipbuilding process is essential for creating customer loyalty and driving repeat orders. Customer satisfaction is seen as the result of the congruence between perceived product characteristics and customer expectations (Islamgaleyev et al., 2020). Therefore, the shipyards must develop integrated systems and procedures in customer service to achieve customer satisfaction.

The acceptability of new ships is determined by meeting the agreed ship-quality standards set out in the contract. In the context of new shipbuilding, product quality includes meeting material and

equipment specifications, ensuring the ship's speed and stability, and controlling fuel consumption. The quality of ships determines their service life and operating costs, which in turn impact the profitability of the ship operator. Improving product quality will increase customer satisfaction and promote repeat orders. In contrast, poor quality will negatively affect the organisation's competitiveness (Shah et al., 2022).

Meanwhile, organisational culture affects agile manufacturing, thereby further improving shipyard operational performance (Sutrisno et al., 2024). Where internal and external cooperation indicators make a huge contribution, followed by the implementation of management principles properly and consistently, including planning, organising, actuating, and controlling. An adequate organisational structure and top management support also significantly contribute to establishing a company culture.

The indicators of operational performance for shipbuilding companies are construction time (OP1), quality (OP2), construction cost (OP3), and sales revenue (OP4). This result aligns with a study of 350 manufacturing companies in Puducherry, India, which identified the three highest-ranked company competitiveness dimensions: delivery, quality, and cost (Prabhu et al., 2020). Building time is an important requirement for the customer and the shipyard. For the customer, timely delivery is critical to business sustainability. Similarly, on-time delivery indicates the efficiency and effectiveness of the management processin the shipyards. From the point of view of quality performance, according to Rosak-Szyrocka et al. (2022), there are three perspectives related to quality and value: (1) the value of the product equals the quality; (2) quality is the product meets the specific needs of the customer; and (3) quality is the efficiency which is the ratio between the value of the product and its production cost.

5. Conclusion

The implementation of agile manufacturing in shipyards can improve operational performance by strengthening customer focus, including customer response, long-term customer relationships, customer satisfaction, product quality, customer-driven innovation, and product life cycle. Meanwhile, fostering a strong organisational culture, including cooperation, the implementation of management principles, an appropriate organisational structure, and top management support, will promote customer satisfaction, achieve on-time delivery, enhance quality, and increase cost effectiveness, thereby increasing company revenue.

References

Abubakar, M. I., & Wang, Q. (2019). Key human factors and their effects on human centered assembly performance. *International Journal of Industrial Ergonomics*, *69*(May 2018), 48–57. https://doi.org/10.1016/j.ergon.2018.09.009

Alfnes, E., Gosling, J., Naim, M., & Dreyer, H. C. (2021). Exploring systemic factors creating uncertainty in complex engineer-to-order supply chains: Case studies from Norwegian shipbuilding first tier suppliers. *International Journal of Production Economics*, *240*(June 2020), 108211. https://doi.org/10.1016/j.ijpe.2021.108211

Barends, E., & Rousseau, D. (2022). Organisational culture and performance: an evidence review. *Scientific Summary. London: Chartered Institute of Personnel and Development, July*.

Becker, J. M., Ringle, C. M., Sarstedt, M., & Völckner, F. (2015). How collinearity affects mixture regression results. *Marketing Letters*, *26*(4), 643–659. https://doi.org/10.1007/s11002-014-9299-9

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *Management Information Systems Quarterly (Society for Information Management and The Management Information Systems Research Center)*, *22*(1). https://typeset.io/journals/management-information-systems-

quarterly-125psa3b

Cohen, J. (1998). Statistical Power Analysis for the Behavioral Sciences. In *The SAGE Encyclopedia of Research Design*. SAGE Publications, Inc. https://doi.org/10.4135/9781071812082.n600

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Floriano, P., Lamb, T., & Souza, C. (2009). Shipbuilding performance benchmarking. *International Journal of Business Performance Management*, *11*(3), 216–235. https://doi.org/10.1504/IJBPM.2009.024372

Gavalas, D., Syriopoulos, T., & Tsatsaronis, M. (2022). Assessing key performance indicators in the shipbuilding industry; an MCDM approach. *Maritime Policy and Management*, *49*(4), 463–491. https://doi.org/10.1080/03088839.2021.1876939

Gunasekaran, A. (1998). Agile manufacturing: Enablers and an implementation framework. *International Journal of Production Research*, *36*(5), 1223–1247. https://doi.org/10.1080/002075498193291

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Henseler, J., & Chin, W. W. (2010). Structural Equation Modeling : A Comparison of Approaches for the Analysis of Interaction Effects Between Latent Variables Using Partial Least Squares Path Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *17*(1), 82–109. https://doi.org/10.1080/10705510903439003

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management and Data Systems*, *116*(1), 2–20. https://doi.org/10.1108/IMDS-09-2015-0382

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, *20*(2009), 277–319. https://doi.org/10.1108/S1474-7979(2009)0000020014

Islamgaleyev, A., Petrova, M., Kurenkeyeva, G., Shalbayeva, S., & Kadirbergenova, A. (2020). Increasing customer focus in metal trading. *Entrepreneurship and Sustainability Issues*, *8*(1), 604–617. https://doi.org/10.9770/jesi.2020.8.1(42)

Mandal, P. C. (2022). Service Excellence in Marketing for Firms: Strategies and Initiatives. *International Journal of Service Science, Management, Engineering, and Technology*, *13*(1), 1–22. https://doi.org/10.4018/IJSSMET.290331

Niyi Anifowose, O., Ghasemi, M., & Olaleye, B. R. (2022). Total Quality Management and Small and Medium-Sized Enterprises' (SMEs) Performance: Mediating Role of Innovation Speed. *Sustainability (Switzerland)*, *14*(14). https://doi.org/10.3390/su14148719

Papen, M. C., Niemand, T., Siems, F. U., & Kraus, S. (2019). The effect of stress on customer perception of the frontline employee: an experimental study. *Review of Managerial Science*, *13*(4), 725–747. https://doi.org/10.1007/s11846-017-0258-8

Pham, T. M. D. (2020). On the relationship between total quality management practices and firm performance in Vietnam: The mediating role of non-financial performance. *Management Science Letters*, *10*(8), 1743–1754. https://doi.org/10.5267/j.msl.2020.1.005

Prabhu, M., Thangasamy, N., & Abdullah, N. N. (2020). Analytical review on competitive priorities for operations under manufacturing firms. *Journal of Industrial Engineering and Management*,

13(1), 38–55. https://doi.org/10.3926/jiem.2876

Rathore, Z., & Elwakil, E. (2020). Hierarchical fuzzy expert system for organizational performance assessment in the construction industry. *Algorithms*, *13*(9). https://doi.org/10.3390/A13090205

Rhaimini, E. R., Maryama, H., Centre, C., Ph, C. K., & Centre, C. (2022). Relationship between organizational culture and performance : literature review of the mediating and moderating effects Relation entre la culture organisationnelle et la performance : revue de la littérature des effets médiateurs et modérateurs. *Revue Du Contrôle de La Comptabilité et de l'Audit*, *6*, 129–146.

Rosak-Szyrocka, J., Żywiołek, J., & Mrowiec, M. (2022). Analysis of Customer Satisfaction with the Quality of Energy Market Services in Poland. *Energies*, *15*(10). https://doi.org/10.3390/en15103622

Senturk, Ö. U. (2011). The interaction between the ship repair, ship conversion and shipbuilding industries. *OECD Journal: General Papers*, *2010*(3), 7–36. https://doi.org/10.1787/gen_papers-2010-5kg6z7tm3b42

Shah, S. A. R., Jamaludin, K. R., Talib, H. H. A., Shah, J., Yusof, S. M., & Qadeer, A. (2022). Quality management implementation and their impact on operational performance of Pakistan's food processing SMEs. *International Journal for Quality Research*, *16*(3), 669–688. https://doi.org/10.24874/IJQR16.03-01

Stanivuk, T., Šundov, M., Mikuličić, J. Ž., & Mišura, A. (2020). Logistical activities in the function of development of the shipbuilding industry. *Transactions on Maritime Science*, *9*(1), 51–62. https://doi.org/10.7225/toms.v09.n01.004

Sutrisno, S., Suef, M., & Ma'ruf, B. (2024). A conceptual model of agile manufacturing in the shipbuilding industry for improving shipyard performance. *Int. J. Agile Systems and Management*, *17*(2), 246–268.

Tripathi, V., Chattopadhyaya, S., Mukhopadhyay, A. K., Sharma, S., Li, C., Singh, S., Saleem, W., Salah, B., & Mohamed, A. (2022). Recent Progression Developments on Process Optimization Approach for Inherent Issues in Production Shop Floor Management for Industry 4.0. *Processes*, *10*(8), 1–33. https://doi.org/10.3390/pr10081587

Tulcanaza-Prieto, A., Aguilar-Rodriguez, I. E., & Artieda, C. (2021). Organizational Culture and Corporate Performance in the Ecuadorian Environment. *Administrative Sciences*.

Victoria, O., Olalekan, U., & Evangeline, N. (2021). Organizational Culture and Organizational Performance : A Review of Literature. *International Journal of Advances in Engineering and Management*, *3*(1), 361–372. https://doi.org/10.35629/5252-0301361372

Wada, Y., Hamada, K., & Hirata, N. (2022). Shipbuilding capacity optimization using shipbuilding demand forecasting model. *Journal of Marine Science and Technology (Japan)*, *27*(1), 522–540. https://doi.org/10.1007/s00773-021-00852-8

Zhao, X. (2022). Customer Orientation: A Literature Review Based on Bibliometric Analysis. *SAGE Open*, *12*(1). https://doi.org/10.1177/21582440221079804