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Service Quality Measurement Model Based on Knowledge Management in Telecommunications Companies Governance Service Division Military & Police Services Segment PT. Telkom

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Abstract

The business environment is dynamic, and every change significantly impacts the industry. Therefore, a company is required to always be adaptive to every environmental change that occurs in order to survive in an increasingly fierce competitive climate. Service quality is determined based on the level of importance of service dimensions. This research aims to contribute to an overall understanding of service quality relationships with knowledge organizational factors, including culture, structure, human resources, information, and technology, by examining the role of knowledge management as a mediator variable in correlations, which consists of the conception, able to share, and implementation of knowledge. This study aims to determine the impact of these factors on service quality in the Governance Service Division and Service Delivery Assurance (SDA) Division in the process of issuing a Service Contract that oversees the work process, Delivery Contract Subscription Process (KB) until the issuance of a Service Contract (KL). or work orders (SPK) to subsidiaries and related partners. This research paper used an empirical survey study was used by distributing questionnaires to employees at the Telecommunications Company Division of Governance Service Segment Military & Police Services PT. Telkom in Indonesia. Data from 100 surveys were collected and measured using the Smart Partial Least Squares (PLS) technique. The principles results indicate that knowledge management supporters, such as culture, human resource support, information, and technology support, have a significantly larger influence on service quality than intermediary factors (KM processes), while other supports, namely structure, do not affect service quality without knowledge management mediating role. The results of further research using the simplex method which produces an optimization model for solving existing problems. This research can be useful for academics who should understand the relationship between service quality and knowledge management support in companies, and this research can be useful for other researchers to find more other mediating factors in this relationship; Thus, this new intermediary can be adopted to improve service quality for other companies.

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INTRODUCTION

The business environment is dynamic, and every change significantly impacts the industry. Therefore, a company is required to always be adaptive to any environmental changes that occur in order to survive in an increasingly fierce competitive climate. The telecommunications industry in Indonesia is no exception, which is a clear example of a very radical change in the business environment. Initially, the Indonesian telecommunications industry was controlled by government companies and in the company's operations, the business environment strongly supported the company's monopolistic actions. However, in line with developments in the business world, regulations revoked monopoly rights, impacting other business environments and changing the overall map of the national telecommunications industry. This is stated in Chapter 3 of the Draft Director General of Services concerning Provisions for Obligations of Telecommunications Service Operators, one of which discusses the Provisions for Obligation to Meet Service Quality Standards by Telecommunications Service Operators. The plan to stipulate provisions regarding the obligation to comply with Service Quality Standards by Telecommunications Service Operators, was submitted by the Ministry of Communication and Information Technology (KOMINFO) by inviting Telecommunications Service Operators, academics, and more sources for additional information or viewpoints, particularly with regard to penalties in the form of fines on the delivery of high-quality telecommunications services. In carrying out its business PT. Telkom has several service management divisions and business products including the Government Service Division which is one of the functional divisions under the Enterprise and Business Service Directorate which is positioned to manage services for Government segment customers. However, the current problem is the delay in issuing a Service Contract or Work Order which has resulted in fulfilling service needs for telecommunication service customers of PT. Telkom becomes less effective. Meanwhile, in the company providing good service is the main obligation for service users. In addition, a company must be able to manage and apply knowledge assets or what is known as Knowledge Management so that a company can run effectively in achieving its goals.

literature review

Knowledge Management

Knowledge management has recently gained importance as a conversation topic. Organizations with knowledge power can increase worker skills, creativity, and competitive advantage. Knowledge management implementation efforts are very helpful in the generation, transfer, and application of knowledge in organizations, despite the fact that some academics have viewed it as an important organizational resource (Alhawari, 2016) and an important business tool in today's firms (Wiig, 2000). Knowledge can therefore be viewed as a crucial source of advantage as an outcome of all the benefits of knowledge management listed above (Obeidat et al., 2015).

By separating and defining knowledge from information with the goal of minimizing the negative effects of information overload in organizations, it can improve innovation and creativity capabilities (Maruta, 2014). This can do so by improving an environment in which employees can gain explicit knowledge, which can be evolved into individual knowledge. Contrarily, tacit information can be successfully shared amongst employees, leading to the creation of new knowledge on the part of those employees (Ramadan et al., 2018).

Application of Knowledge Management Model

Knowledge management has been thought to apply by a number of elements, as evidenced by the resources and literature available on the subject. For instance, Lee & Choi (H. Lee & Choi, 2003) employed people, culture, and organizational structure to provide social perspectives, and information technology to apply technical perspectives. Additionally, Lawson (Lawson, 2003) included culture and climate as knowledge management enablers in his model of innovation and capability, which put an end to innovative performance. A review of this application from several perspectives, including management leadership, culture, motivational aids, and IT, is also provided by Chin (Ho, 2009). Similar to the study by Yu et al. (Yu et al., 2007), Woong (Wong, 2005) considers team activity, learning orientation, and reward as KM enablers. According to the summary, all knowledge management academics place KM enablers into one of four major categories: strategy and leadership, business culture, people, and information technology.Further Research by (Alkhaffaf et al., 2018) examining the functioning of knowledge management processes, which include the creation, sharing, and codification of knowledge, as mediating factors. his research contributes to a general understanding of the relationship between organizational creativity and enabling knowledge management, including culture, structure, people, and information technology. The aim is to find out how these characteristics affect organizational creativity.

Knowledge Management Process

The conclusion that there is currently no reliable classification for these processes in various disciplines may be obtained from a study of the research in the field of knowledge management practices (Ho, 2009). there are still many shortcomings in applying the knowledge management process at the level of data and information

verification to the stage of the knowledge creation process. Although the effect of using knowledge management processes has been tested, it can be emphasized that we can improve employee performance and satisfaction to increase the level of creativity in knowledge work (Sharabati & Hawajrwh, 2012).
Knowledge production, knowledge acquisition, knowledge organization, knowledge sharing, and knowledge implementation are some of the different ways that knowledge management processes can be broken down. The research conducted by (Fattahiyan & ali Siadat, 2012), have also presented a different classification of knowledge management processes while taking organizational structure, knowledge acquisition, knowledge application, and knowledge protection into account. The study discovered a noteworthy correlation between these processes and organizational performance. Information obtaining, knowledge sharing, and openness to knowledge are all explored in research (Ooi, 2009) which discusses knowledge management activities.
These processes are also identified by Lee et al. (K. Lee et al., 2005) as knowledge accumulation, information sharing, knowledge use, and knowledge internalization (Carmeli & Paulus, 2014). By defining KM processes as including knowledge identification, knowledge acquisition, knowledge transfer, knowledge integration, knowledge implementation, archival/retention, and transfer/dissemination, S. Loke et al. (Loke et al., 2011) give the assurance that the loss of critical knowledge has been acknowledged as one of the primary problems in any organization. Knowledge production, sharing, and codification are the most often utilized and prevalent processes, according to analysis of the knowledge management processes literature which the three knowledge processes are included in this research model (Nonaka. I., Takeuchi, 1995).

Quality Of Services

According to (Gallifa & Batallé, 2010), one of the most important research areas over the past three decades has been service quality. For businesses to compete, thrive, and satisfy their customers on the market, improving service quality is crucial. It follows that it is apparent that low-quality services provided to clients and their unhappiness are top priorities for businesses (Habidin et al., 2015).
Investigating the relationship between service quality and the various activities that organizations carry out is a common and accepted method of demonstrating the value of funding those activities. The mindset is the same when it comes to knowledge management infrastructure. Although knowledge management infrastructure is becoming more and more common, standardized methods for evaluating it have been slower to catch on. There are two important perspectives when it comes to measuring knowledge management infrastructure. According to one group of authors, the knowledge management infrastructure field is not yet sufficiently developed to accurately quantify potential results and connect those results to knowledge management infrastructure operations like knowledge development, transfer, and utilization. Nevertheless, (Madžar, 2018) expect on the significance of assessing knowledge management infrastructure and list three reasons for doing so: to establish a foundation for valuation, to encourage management to concentrate on what matters, and to support investments. Knowledge management infrastructure can and should be recognized as a tool to gain competitive advantage, achieve long-term success on the market, and subsequently benefit. Although organizations shouldn't expect to see a significant return on investment from knowledge management infrastructure too quickly, as organizations are turning to management of the knowledge and skills their employees possess as a means of survival and success in today's knowledge economy.

PT. Telkom Indonesia Tbk

The Telkom Group uses an operational company and business strategy that is focused on customers as it transitions to being a digital telecoms firm. The goal of this transformation is to streamline the Telkom Group organization so that it would be leaner and more adaptable to the rapidly evolving telecoms sector. This new company should be able to work more efficiently and effectively to provide customers with a high-quality experience.
The activities of Telkom Group expand and alter as new technologies, information, and digitalization develop, but they still fall under the umbrella of telecommunications and information technology. This is evident from the recently created line of business, which enhances the legacy business of the corporation.
To support business operations, Telkom implements AKHLAK's Core Values as its Work Culture which is a culture derived from the Ministry of BUMN. A for "Trustworthy" which represents the value of holding a given mandate, K for "Competent" which represents the value of continuing to learn and developing abilities, H for "Harmonious" which represents the value of mutual care and respect for differences between others, L for "Loyal" which represents the value of dedication and prioritizing concern for the Nation and the State, A for "Adaptive" which represents the value of remaining innovative and enthusiastic in dealing with change, and K for "Collaborative" which represents the value of building synergistic collaboration.
When it comes to research on PT. Telekomunikasi Indonesia, it is first necessary to look at a number of service products that are thought to pay little attention to network, service, and price quality. As a result, research on strategies for maintaining competitive advantage for already-offered services is required. The goal of this study is to evaluate product quality, service quality, and price for Indihome PT Telkom Indonesia Witel Medan's competitive advantage. The study's findings show that product quality, service quality, and price all have a positive and significant impact on competitive advantage. When a result, IndiHome's advantages will become even more competitive as these factors increase (Budhiman et al., 2021).

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Further research is carried out (Lintang Kamulyanisa Hadi & Rifki Hanif, 2022) examines that the Company will always work to improve executive performance in order to meet its objectives. It is difficult to obtain personnel who perform well for the company since numerous criteria, such as job engagement and organizational citizenship behavior, must be provided by employees. The outcomes of the data analysis show that organizational citizenship behavior, which affects job engagement, affects employee performance. While this is the case, employee performance is not directly impacted by the work engagement variable.

PT Telkom Indonesia. As one of Telkom's main project programs, several services have shown rapid growth since they were just launched. That way, Telkom can keep abreast of developments and remain agile with all changes (Yusuf, 2022).

Governance Services Division (DGS)

As a division that manages government customers, DGS certainly cannot be separated from operationalization that is bureaucratic and protocol in nature, especially in dealing with customers who are categorized in the VVIP and VIP groups. Telkom as a customer-focused company, of course, must adjust its way of working with the protocols that generally apply in customer operations, especially in the implementation of events that involve customers. Parties included in the VVIP and VIP categories in customer management at DGS are as follows:

Figure 1: Customer Leveling DGS 7

The governance that is regulated regarding protocol for escorting events attended by VVIP and VIP officials includes Telkom officials who also attend the event, the person in charge of the event, the signatory of the invitation (if the event is held by Telkom), escort regarding Telkom services that must be provided, and etc.

KM INTEGRATION MODEL OF SERVICE QUALITY

The researchers propose a study model by selecting the most prevalent and extensively used characteristics from past studies that were relevant to the topic of this work. In order to determine the impact of these characteristics on organizational creativity when merged in one model as well as while KM Processes were employed as a mediating factor as in prior studies, this study integrated four models: Lawson's model (Lawson, 2003), Lee & Choi Model (H. Lee & Choi, 2003), Allameh Model (Allameh et al., 2011) and Alkhaffaf Model (Alkhaffaf et al., 2018). There is a need for additional research in this area, according to Alkhaffaf (Alkhaffaf et al., 2018).

According to an analysis by Saulais and Ermine (Saulais & Ermine, 2012), the relationship between knowledge management and innovation increases the value of intellectual capital, which is recognized as an evolutionary process by Al-Khalil et al (Al-Khalil et al., 2014). Gurteen (Gurteen, 1998) created a framework to talk about issues with using and producing new knowledge that involve creativity and innovation.

Figure 2 shows the three dimensions of the Integrated model. First, independent variables known as knowledge management application, which are composed of five elements (culture, structure, human resource and information technology), with the last ingredient (information technology) coming under a technical perspective and the first four elements falling under a social perspective. The knowledge management process is the second mediating factor. Quality of service has been identified as the last dependent variable.

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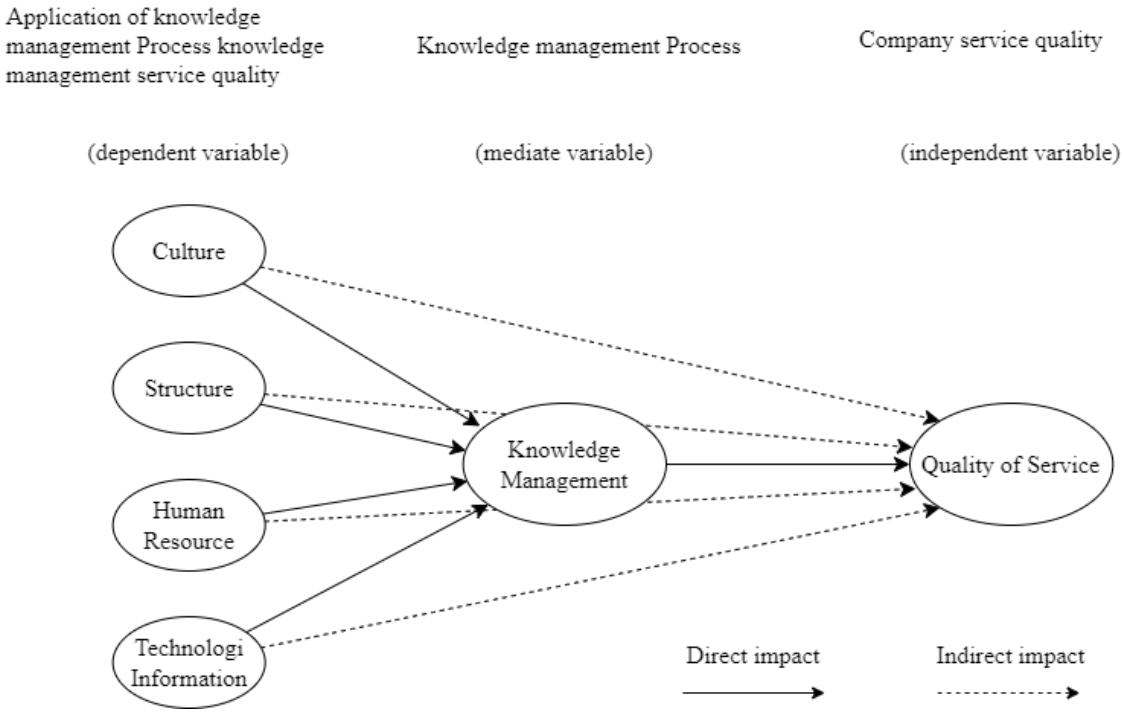

Figure 2: [Study Integrated Model] From the application of knowledge management to

RESEARCH METHODOLOGY

Reports Survey research is the method employed, and it involves taking samples from a population and using a questionnaire as a tool to get the primary data. This study was carried out in order to gather unbiased information that could be used to conduct in-depth interviews with telecommunications company workers in the Military & Police Governance Services Segment of PT. Telkom.

The research was conducted at a Telecommunications Company, Division of Governance Service, Military & Police Services Segment, PT. Telkom. The research time is from November 2021 to June 2022.

The online questionnaire was distributed via Google form to 5 work units of the Company's Governace Service Division and Service Delivery Assurance Division which were selected as the study population.

The population of this research is the all units and subsidiaries involved in the process of issuing Service Contracts to PT Telkom Governance Service Division's Subsidiaries and Partners. Based on data obtained from the Governance Service Division and Service Delivery Assurance Division, the number of active staff in each service unit is 3,202 people consisting of 5 Work Units as shown in Table 1.

Table 1: Active Staff of Governance Service Division, Service Delivery Assurance Division and related Partners.

No.	Work Unit	Amout
I.	Divisi Governance Service	643
II.	Divisi Service Delivery Assurance	658
1	Outbound Logistic (Divisi SDA)	208
2	Legal (Divisi SDA)	334
3	Offering Segment (Divisi Governance Service)	204
4	Account Manager (Divisi Governance Service)	314
5	Mitra (Anak Perusahaan)	420
6	Mitra (Non-Anak Perusahaan)	421
Total		3202

Survey Size

In this study, researchers used non-probability sampling with a purposive sampling technique. Purposive Sampling is a sampling technique with certain considerations. Considerations for samples in certain considerations. The considerations for the sample in this research are respondents with the following criteria:

a) Governance Service Division and Service Delivery Assurance Division at PT. Telkom.

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b) All Work Units of the Governance Service Division and the Service Delivery Assurance Division involved in Issuing Service Contracts.

In this study, the sample size was determined using the Slovin formula. The Slovin formula is as follows:

$$n = \frac{N}{1+N(e)^2} \qquad (1)$$

Where:
n = Sample Size
N = Population Size
e = Standard Error 10%

In the Slovin formula there are the following provisions:
The value of e = 0.1 (10%) for a large population
The value of e = 0.2 (20%) for a small population

Based on the Slovin formula, the sample size is obtained as follows:

$$n = \frac{3202}{1+3202\ (0{,}1)^2}$$

$$n = \frac{3202}{24{,}02} = 95{,}8\ 7$$

By using the Slovin formula, the number of samples that will be used as respondents in this study is 96 respondents. However, at the discretion of the researcher, due to time and cost constraints, the sample used was 100 respondents.
As for the tools that help analyze the way PT Telkom companies apply knowledge and knowledge management processes to improve service quality, namely using the Partial Least Square (PLS) method to examine the data collected during this study; this statistical method is used because it is considered the most suitable for the influence of independent factors on dependent factors in the presence of mediating factors (knowledge management processes). In addition, PLS has parameters that are recognized as the latest and most practical in the literature, written in the same type of study (Alhawari, 2016).

Data analysis and result

Descriptive Analysis

The data obtained in the research and testing of the hypotheses previously proposed. The research sample was taken by purposive sampling method, namely sampling based on certain withdrawals.
All questionnaires that met the criteria were 100 which were then used as samples and further processed. The instrument used consisted of 2 (two) parts, namely the identity of the respondent according to the criteria and statements of the 6 variables used in the study, namely: Organizational Culture, Structure, Human Resources, Information Technology, Knowledge Management and Service Quality. The characteristics of the respondents analyzed in this study include: work unit, position, gender, last education, and length of service.
Based on the results of research conducted on 100 respondents in the governance service division (DGS) ad service delivery assurance (SDA) division, there are several parts of the work unit in issuing service contracts. these work units include account team work units, segment units, partners (AP/Non-AP), DGS legal units, SDA legal units and outbound logistics units (OBL). in this study, the most work units from the sample obtained were 46 people in the account team unit, while the lowest work units from the sample were obtained by 2 people in the outbound logistics unit (OBL).
From the research results, the characteristics of respondents based on position are visible, Support is as many as 55 respondents or as much as 55%. This shows that positions in the Governance Service (DGS) and Service Delivery Assurance (SDA) Division are positions that deal directly with customers and provide information about the company's products. Then the characteristics of the respondents were male as much as 71%, meanwhile female respondents as much as 29%. This shows that in terms of human resources in the issuance of service contracts, the male sex is more dominant so that satisfaction with the quality of services performed at the time of issuing service contracts is felt more by men.
Most of the respondents had a bachelor's degree (S1), namely as many as 86 respondents or as much as 86%. This shows that education in the Governance Service Division (DGS) and Service Delivery Assurance (SDA) Division has good and qualified resources in the company. Furthermore, the largest percentage of respondents' length of service in the Governance Service Division (DGS) and Service Delivery Assurance (SDA) Division is 6-10 years, namely 32% and the lowest is at 16-20 years, namely 8%. Based on the length of service, it can be

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concluded that employees in the Governance Service Division (DGS) and Service Delivery Assurance (SDA) Division have sufficient experience and know and play a very important role in the progress of the organization.

Construct Measurements Analysis

The Smart Partial Least Square-Structure Equation Modeling (PLS-SEM) tool has been used in this work to examine and analyze the data leading to all hypotheses.

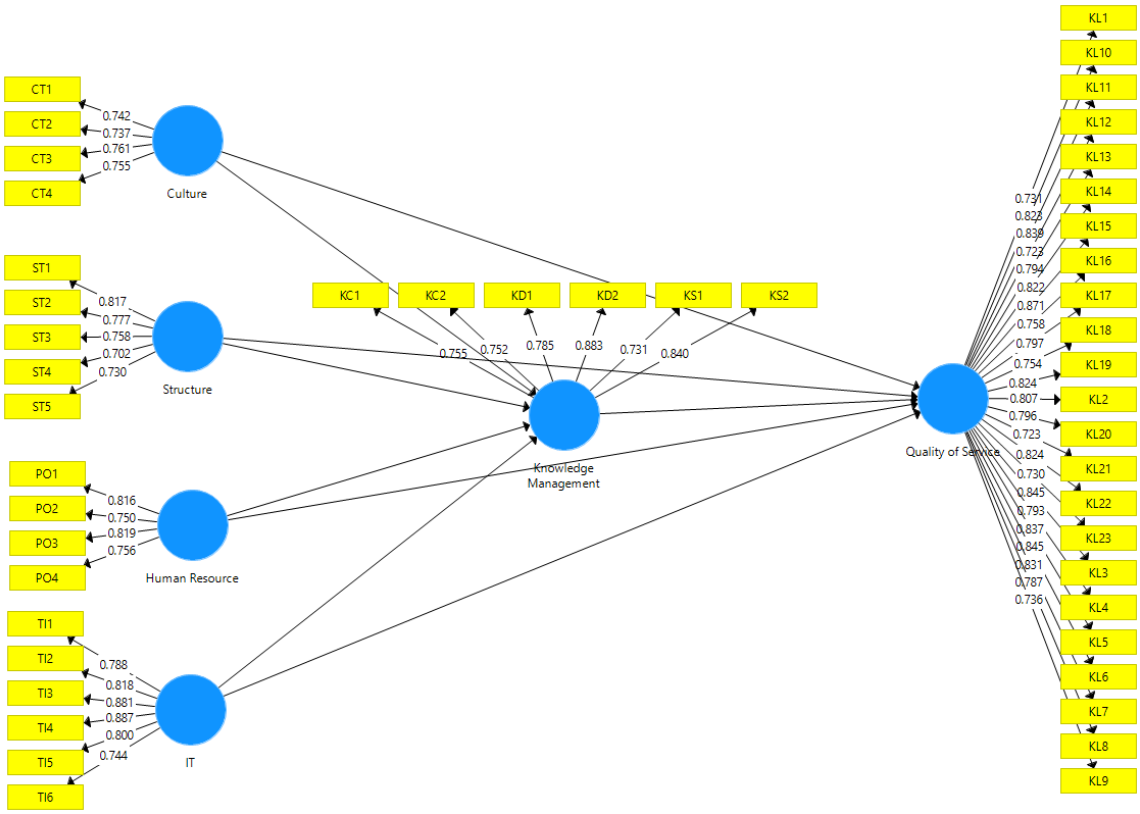

Figure 3: Integrated Model of Path Loadings

As a result, the expert data analysis and testing carried out by the researchers through the implementation of two different stages (Anderson & Gerbing, 1988) focused at the content, convergent and discriminant validity of variables, and further implemented data testing in regards to each of the individual hypotheses in accordance with the study framework.

Path Loadings for the Integrated Model

All factor loadings were discovered to be at least > 0,7 in agreement with the preliminary stage, indicating that all factors connected to the study framework were accurate and thus deemed valid for analysis (Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, 2017). Figure 3 presents a summary of the path loadings findings for all variables related to the proposed framework.

The six distinct components, including the knowledge management application of culture, structure, human resource, information technology, and service quality, are shown in Figure 3. A generalized breakdown of the factor loadings for the various research constructs is also provided in Table 2.

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Table 2: Validity Testing based on Loading Factor.

Variables	Item	Factor Loading	Result
Culture	P1	0.742	Significant
	P2	0.737	Significant
	P3	0.761	Significant
Structure	P4	0.817	Significant
	P5	0.777	Significant
	P6	0.758	Significant
	P7	0.702	Significant
	P8	0.730	Significant
	P9	0.817	Significant
Human Resource	P10	0.816	Significant
	P11	0.750	Significant
	P12	0.819	Significant
	P13	0.756	Significant
Technology Information	P14	0.788	Significant
	P15	0.818	Significant
	P16	0.881	Significant
	P17	0.887	Significant
	P18	0.800	Significant
	P19	0.744	Significant
Knowledge Management	P20	0.731	Significant
	P21	0.840	Significant
	P22	0.755	Significant
	P23	0.752	Significant
	P24	0.785	Significant
	P25	0.883	Significant
Quality of Service	P26	0.731	Significant
	P27	0.823	Significant
	P28	0.839	Significant
	P29	0.723	Significant
	P30	0.794	Significant
	P31	0.822	Significant
	P32	0.871	Significant
	P33	0.758	Significant
	P34	0.797	Significant
	P35	0.754	Significant
	P36	0.824	Significant
	P37	0.807	Significant
	P38	0.796	Significant
	P39	0.723	Significant
	P40	0.824	Significant
	P41	0.730	Significant
	P42	0.845	Significant
	P43	0.793	Significant
	P44	0.837	Significant
	P45	0.845	Significant
	P46	0.831	Significant
	P47	0.787	Significant
	P48	0.736	Significant

Due to the fact that all indicators' standardized path loadings were discovered to be more than 0.7, indicating that all are recognized as (Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, 2017) , it is possible to validate and then accept all items according to Table 2.

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Reliability and Validity Test

The survey's overall design has an impact on the reliability and validity determined in any research study. In this spirit, it would be true to say that these are the basic criteria for assessing the study's validity and correctness. Two specific aspects of the study design must be taken into consideration in order to ensure that the likelihood of receiving inaccurate replies is reduced to the greatest practicable extent: reliability and validity.
Two different aspects of the process were focused on to ensure validity: first, different experts and professionals were questioned about how to identify problems and potentially vague research question in order to determine whether or not such questions would be considered reasonable, and second, the general level of understanding in the question phrasing was evaluated. Following expert evaluation, a number of recommendations were made, including the addition, deletion, and modification of a couple of the questions from the initial survey.
Table 3 has been produced to explain the Cronbach Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) results for all model constructs in order to make sure the questions in the questionnaire were recognized as both valid and reliable. Regarding internal consistency dependability, Cronbach's alpha was used as the lower bound, and all CA and CR results were acknowledged as being at least the minimum required value of 0.65 (Thorndike, 1995).
This implies that all variables had satisfactory dependability. The AVE (Fornell & Larcker, 1981) is one of the most frequently used criteria for convergent validity. An AVE value of at least 0.50 is recognized as implying that a construct can rationalize more than half of the variance of its indicators, which indicates good convergent validity. Importantly, it can be noted that the values of all of the AVEs listed in the table range from 0.756 to 0.811, indicating that all of the constructs meet the criteria for convergent validity.

Table 3: Constructs measurement.

Constructs	Cronbach Alpha (CA)	Average Variance Extracted (AVE)	Composite Reliability (CR)
Culture	0,740	0,561	0,836
Structure	0,819	0,574	0,870
Human Resource	0,793	0,617	0,866
Technology Information	0,903	0,674	0,925
Knowledge Management	0,881	0,629	0,910
Quality of Service	0,974	0,634	0,975

Discriminant Validity Test

In order to determine the discriminant validity, latent variable correlations are calculated. According to this method, a construct must share a larger proportion of variance with its measurements than with other constructs described in a certain framework (Fornell & Larcker, 1981). The table below shows the results of the Latent Variable Correlations (discriminant validity), and it is evident that all constructs show a greater degree of variance with their indicators when compared to other constructs.The results show appropriate discriminant validity, where all of the correlation coefficients should not be more than 0.8 to ensure that multicollinearity between components is not included. This is in accordance with Table 4. Any correlation coefficient discovered to be more than 0.80 would ultimately point to a multicollinearity problem (Sparkman et al., 1979). After measurement model testing, the framework can be regarded as both valid and reliable with consideration given to all the parameters as listed above.

Table 4: Discriminant Validity Testing.

	Culture	IT	KM	HR	QS	Structure
Culture	0,749					
IT	0,621	0,821				
KM	0,672	0,781	0,793			
HR	0,622	0,806	0,766	0,786		
QS	0,552	0,572	0,675	0,618	0,796	
Structure	0,608	0,605	0,589	0,653	0,403	0,758

R (Square Test)

The values of the path coefficients offer a clear understanding of the relationship between each construct in accordance with the mediation constructs that were used and those that were not. Therefore, it was acknowledged that using the R (Square) test would be necessary to explain such interpretive abilities. The values of R (Square) are explained in the Table 5 below.

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Table 5: Coefficient of Determination (R-Square)

Relation	R (Square)
Quality of Service is influenced by applying Knowledge Management without being mediated by KM processes	0,499
Quality of Service is influenced by applying Knowledge Management with being mediated by KM processes	0,697

Based on the results in Table 5, the R-Square value of knowledge management is 0.697, which means Culture, IT, People, Structure can influence knowledge management by 69.7%. The R-Square value of quality of service is 0.499, which means culture, structure, human resource, technology information and knowledge management are able to influence quality of service by 49.9%.

Hypotheses Testing

Through the use of the Bootstrapping analysis in Smart PLS software, the researchers applied the logical analysis to finish testing on the recommended framework and present a thorough conclusion regarding the data related to the hypotheses. Finally, by conducting the test, it was possible to determine the rate of (P value) for all elements that Quality of Service is influenced by applying Knowledge Management without being mediated by KM processes.

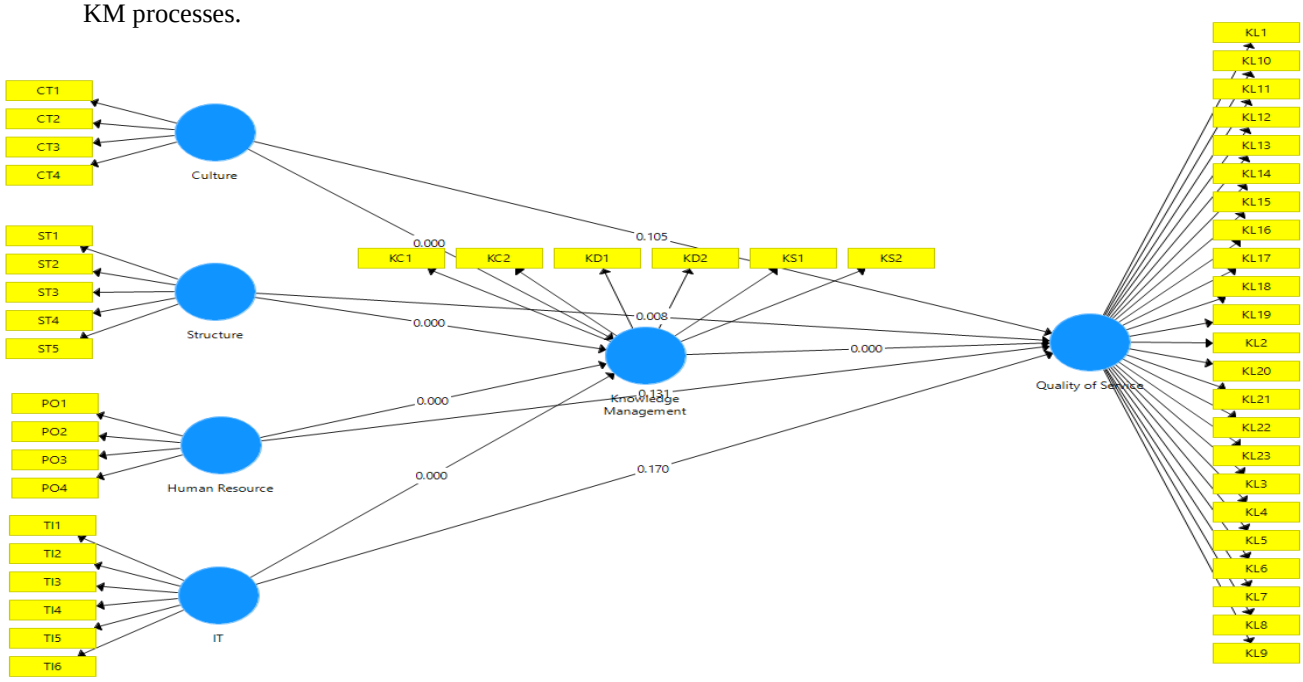

Figure 4: Bootstrapping (P value) for Applying KM s factors on Quality of Service with the mediation of KM Processes

According to Figure 4, the researchers used the Smart Partial Least Square (PLS-SEM), which looked at and assessed all hypotheses related to the Applying KM variables, including culture, structure, human resource, and IT, as well as KM Processes, to determine the (P value). Table 6 gives a brief summary of the findings.

Table 6: Test results for the apply KM Variables and KM processes

Relation	Original Sample (O)	P Values
Culture → Knowledge Management	0,238	0,007
Structure → Knowledge Management	0,018	0,000
Human Resource → Knowledge Management	0,296	0,786
IT → Knowledge Management	0,384	0,000

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This paper's main focus is on the direct effects of knowledge management application on knowledge management processes. In keeping with this, H2 is developed and subsequently divided into four distinct sub-hypotheses, as explained below: For H2.1, the findings in Table 6 give explanation: Culture has a positive effect on Knowledge Management, with a path coefficient value (original sample) of 0.238 and significant, with a P-Values = 0.007 <0.05 (Hypothesis Accepted).

For H2.2, the findings in Table 6 give explanation: Structure has a negative effect on Knowledge Management, with a path coefficient value (original sample) of 0.018 and not significant, with a P-Values = 0.786 <0.05 (Hypothesis Rejected).

For H2.3, the findings in Table 6 give explanation: Human Resource has a positive effect on Knowledge Management, with a path coefficient value (original sample) of 0.296 and significant, with a P-Values = 0.002 <0.05 (Hypothesis Accepted).

For H2.4, the findings in Table 6 give explanation: IT has a positive effect on Knowledge Management, with a path coefficient value (original sample) of 0.384 and significant, with a P-Values = 0.000 <0.05 (Hypothesis Accepted).

Table 7: Test results for the apply Knowledge Management and Quality of Service

Relation	Original Sample (O)	P Values
Knowledge Management → Quality of Service	0,442	0,000

Table 7 clarifies the acceptance of H3.1: The knowledge management process influences service quality at the company PT Telkom, Governance Service Division (DGS) and Service Delivery Assurance Division (SDA).

Optimization Results of Work Contract Completion

The recommendation model for the process of issuing service contracts to fulfill service needs on existing problems, namely the proposed optimization recommendations, especially in the process of issuing service contracts to meet service needs in the Governance Service Division (DGS) and Service Delivery Assurance Division (SDA) using the simplex method.

The Simplex method is a widely used solution algorithm for solving linear programs. An algorithm is a series of steps that will accomplish a certain task (Goldfarb & Todd, 1989),(Arsham, 2020),(Vanderbei, 2020). The initial steps that must be determined in solving the problem with the simplex method are as follows:

a) Determine the decision variable of the problem

X1 = Define Document

X2 = Justification

X3 = See Item Availability

X4 = Contract Determination

X5 = Verify

b) Determine the objective function of the problem.

$$\text{Max } Z = 7\,X1 + 3\,X2 + 1\,X3 + 2\,X4 + 5\,X5 \quad (2)$$

c) Determine the constraints of the problem.

Tools = 2 x1 + 3 x2 + 3 x3 + 3 x4 + 3 x5 = 6

Members = 3 x1 + 4 x2 + 4 x3 + 4 x4 + 5 x5 = 7

Then the optimal results obtained for working on 1 contract require approximately 7 days, 2 tools, and 3 members (for X1), 3 days, 3 tools, and 4 members (for X2), 1 day, 3 tools, and 4 members (for X3), 2 days, 3 tools, and 4 members (for X4), 5 days, 3 tools, and 5 members (for X5). In this case the work has a time limit, which is a maximum of 18 days, and the optimal results obtained are approximately 16 days, of which there are still approximately 2 days remaining in work on X1.

Table 8: Initial Table

	X1	X2	X3	X4	X5	S1	S2	Nk
Z1	-7	-3	-1	-2	-5	0	0	0
S1	2	3	3	3	3	1	0	6
S2	3	4	4	4	5	0	1	7

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Table 9: Iteration 1

	X1	X2	X3	X4	X5	S1	S2	Nk
Z1	0	19/3	25/3	22/3	20/3	0	7/3	16,3
S1	0	1/3	1/3	1/3	-1/3	1	-2/3	1,3
X1	1	4/3	4/3	4/3	5/3	0	1/3	2,3

Then only one iteration is produced because the Z line no longer has a negative value. With the following information:

Z = 16.3 (optimal yield of days needed to work on 1 contract)
X1 = 2.3 (optimal result = there are still days left from the limit)
X2 = 0 (optimal result = days used up)
X3 = 0 (optimal result = days used up)
X4 = 0 (optimal result = days used up)
X5 = 0 (optimal result = days used up)

Constraint:
S1 = 1 (Optimal result = 1 tool used that is rarely used)
S2 = 0 (Optimal result = all members work within the limits)

CONCLUSION AND FUTURE RESEARCH

Knowledge Management has a significant effect on Service Quality in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Culture has no significant effect on Service Quality in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Structure has no significant effect on Service Quality in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Human Resources has a significant effect on Service Quality in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Availability of Information Technology has no significant effect on Service Quality in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Culture has a significant effect on Knowledge Management in the Governance Service Division (DGS) and Service Delivery Assurance (SDA) Division of PT. Telkom. Structure has no significant effect on Knowledge Management in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Human Resources has a significant influence on Knowledge Management in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. The availability of Information Technology has a significant effect on Knowledge Management in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Culture has a significant effect on Service Quality through Knowledge Management as an intervening variable in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Structure has no significant effect on Service Quality through Knowledge Management as an intervening variable in the Governance Service Division (DGS) and Service Delivery Assurance (SDA) Division of PT. Telkom. Human Resources has a significant effect on Service Quality through Knowledge Management as an intervening variable in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Availability of Information Technology has a significant effect on Service Quality through Knowledge Management as an intervening variable in the Governance Service (DGS) Division and Service Delivery Assurance (SDA) Division of PT. Telkom. Results of Knowledge Management Based Service Quality Measurement in Telecommunications Companies Division of Governance Service Military & Police Services Segment PT. Telkom namely: 44.02% stated Very Good 40.94% stated Good, 13.58% stated Enough, 01.27% stated Not Good 0.19%. Generate recommendations for the proposed model of the process of optimizing the issuance of service contracts as an efficiency in fulfilling service needs. For additional investigation, with a focus on identifying additional elements that may have a mediating role in raising service quality. Additionally, PT. Telkom Indonesia and other sizable organizations must put their policies into practice in order to encourage behaviors and moral principles that enhance a culture of creativity, which results in the introduction and adoption of fresh ideas inside the organization. Last but not least, the management of the organization must make sure that their personnel are ready to recognize the development and sharing of knowledge, as well as its definition, through courses or seminars that explain the benefits to be gained in the IT sector in their businesses.

COMPETING INTERESTS

The authors have no competing interests to declare.

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