

Leveraging IT Service Management to Enhance Helpdesk Service Quality in Handling Consumer Complaints

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Abstract. Information Technology Service Management (ITSM) is a collection of responsibilities shared responsibilities, plus interrelated disciplines and processes, that enable organizations to measure, control, and ultimately manage IT infrastructure to deliver high-quality, cost-effective services to meet short-term and long-term needs. This ITSM can involve other supporting business areas, ranging from a single application access to a complex set of facilities spread across several different platforms. This study contributes to knowledge about the use of ITSM in certain organizational contexts because several problems are often encountered in handling problems in company information system support operations. The problem-solving approach is carried out quantitatively using factor analysis methods to look for the factors causing the gap between the targeted service level and the actual service that occurs, then proceed with building a model using the regression analysis method so that an abstraction of the problems that occur from several new factors is formed. formed, so that it can be used to predict the management of information technology services for the future in the company. The results achieved in this research are the existence of new factors *full management maintenance service, human resources, and service process* which greatly influence and need to be considered for optimal information technology service management performance in companies.

Keywords: information technology, service management, factor analysis, performance model, IT infrastructure

1. Introduction

The development of cellular in the digital era allows all telephone users to always want to use a smartphone anytime and anywhere, to stop all transactions on the device. So, a company is required to invest in the procurement of software and hardware to obtain maximum results in achieving productivity (Rudy et al., 2019). PT. XYZ is a company engaged in the telecommunications sector with a focus on the installation of cellular network boosters using feeder cables with Base Transceiver Station (BTS) terminals. Besides doing the installation, PT. XYZ also performs routine maintenance on sites that have been installed and are already operating and transmitting signals to a building by working with several cellular operators to Mall, East Mall, and Menara BCA, which is one of the many sites or buildings that use maintenance services from PT. XYZ. With such a wide coverage area, it certainly requires a lot of BTS in the area, of course, there are often complaints. If a problem occurs, the Information Technology (IT) Helpdesk will provide this information to the technician to make repairs immediately, so that the problem is resolved immediately (Pratomo and Science, 2010). The repair process is carried out as soon as possible according to the standards of PT. XYZ, so as not to cause complaints, limits the time so that it will not cause big losses to both cell phone users and cellular operators. The IT Helpdesk will record every complaint that occurs as a company record so that it can minimize problems in the future assisted by the role of Information Technology Service Management (ITSM) which is considered capable of making the number of complaints adjust to the target (Idena and Eikebrokk, 2013). PT. XYZ, each month must have a total of 10 complaints in a month, but in reality, of course, it does not agree with this target. The following figure 1 is an example of complaints performance in a year

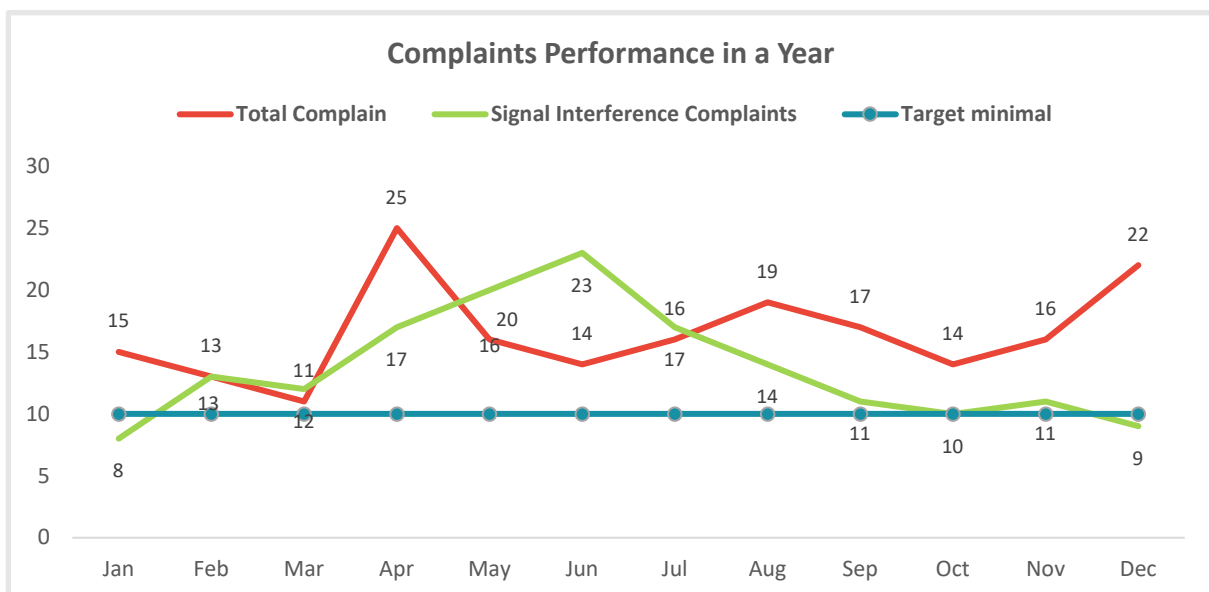


Fig.1: Graph of Complaints Performance in a Year

So, it is necessary to find out what factors cause complaints to occur frequently and how to maintain performance in the future when the complaint problem is on target. Thus, solutions and strategies can be obtained to improve service to customers in handling cases that occur with a Service Level Agreement (SLA) that suits customer needs (Tamm and Brenner, 2005). The IT Helpdesk will record every complaint that occurs as company documentation to minimize future problems assisted by the role of ITSM which is considered capable of making the number of complaints adapt to the target. The company's target, every month, is to have a total of 10 complaints in a month, but, of course, this does not agree with this target (Wahlen et. al., 2011).

2. Literature Review

2.1. Information Technology Service Management (ITSM)

IT Service Management (Bongard and Bouchard, 2013) can be explained as a method for managing all aspects of the information system and technology of an organization, both in terms of infrastructure and the activities involved, as an interconnected process that aims to provide services to the organization (Santoso et al., 2011). The combination of these elements provides the capabilities needed for an IT company to provide quality IT services that meet the company's business needs. However, IT Service Management does not only consist of these elements but is equipped with knowledge, experience, and skills from an industry of professional practitioners which is a method for meeting the needs of these elements. (Santoso et al., 2011). The official definition of IT Service Management describes ITSM as "A set of specific organizational capabilities for delivering value to customers in the form of services". Organizational capabilities are influenced by customer needs and requirements, the existing culture within the service organization and the intangible nature of the output and intermediate products of IT services. (Sugiarto et al., 2015). But IT Service Management consists of more than just these capabilities, complemented by industry professional practices and a wealth of knowledge, experience and skills. The ITSM framework has been developed as a primary source of good practice in Service Management and is used by organizations around the world to build and improve their ITSM practices (Sugiarto et al., 2015). An effective ITSM implementation is carried out by combining three main elements, namely people, process, and technology, into a well-designed system, which is based on the best industry practices. The integration of these three elements in a system ensures that they can build synergy so that each can provide the best (Magdalena, 2011).

2.2. ITSM Component



Fig. 2 Components of ITSM

The following is an explanation of the components or elements of ITSM:

a. People

In every organization, quality people are needed to be able to make good decisions and hopefully find effective ways to face challenges. The service desk reflects the services of the Information Technology Department which acts as a single point of contact in its interaction with users and related departments within the scope of information technology services. The service desk manages incidents and issues from users through coordination with other divisions within the Information Technology department, such as the networks division, and servers' specialists, and represents these work functions in business processes, not infrequently, because they often interact with users, service desk agents can provide a solution to a problem that other divisions in the Information Technology Department don't even know the answer (Hsieh et al., 2012).

b. Process

A well-planned process is needed so that people can work more focused and directed, because a lot of bureaucracy can hinder work and instill disappointment in users, well-defined procedures and plans can make work easier and more productive. The Helpdesk system is a single contact for all related people,

such as customers who experience a problem can contact the Helpdesk, if the Helpdesk can help solve the problem, then the problem will not be closed, but if the Helpdesk cannot solve it, the problem can be assisted by senior management or IT Department (Inostroza et al., 2012).

c. Tools

The presence of IT, plus the Internet, is likely to continue to encourage fundamental changes, both in the way of communicating, managing business, and creating new ways of doing business. However, technology is more of a device and means, but what is more determining is how people use these means appropriately and carefully in responding to their needs. One of them is how to serve customers better, by today's challenges. Tools only make previous elements more effective. Good tools can speed up a process and increase agent knowledge. The combination of good tools with bad people and processes will not work. Bad tools will be useless and will not function effectively. (Magdalena, 2011)

2.3. Advantages of Information Technology Service Management (ITSM)

Modern companies, which face increasingly fierce competition, can hardly avoid the need to utilize IT to increase their competitiveness. Business Service Management (BSM) is a solution compiled from the best practices of IT solutions in the world. In general, ITSM outlines how technology, procedures (processes), and people (HR) can help simplify business processes and efficiency in various areas of the company (Magdalena, 2011). Service support is divided into five parts that provide flexibility and stability in delivering IT services into business processes, namely:

1. *Incident Management*, management that ensures that services in an organization can be returned to their original condition as quickly as possible and minimizes the negative impacts that may arise (Holzinger, 2005). The main responsibilities are:
 - a. Detection and recording of incidents.
 - b. Classification of incidents and initial troubleshooting for users.
 - c. Provide resolutions and solutions.
 - d. Closing the incident
 - e. Tracing Incident
2. *Problem Management*, Management that allows a diagnosis to be made of incidents that frequently occur. Error correction in information technology infrastructure is coordinated and carried out proactively to prevent problems. The main objectives are Detection and recording, Classification of problems, Diagnosis and investigation of problems, Preventive action using trend analysis techniques, review of problems, presenting reports to management based on problems that occur (itSMF, 2013).
3. *Change Management*, Change Management ensures that IT can be evaluated and controlled, while minimizing negative impacts on the business. Responsibilities include improving and recording change requests, assessing the impact, costs, benefits and risks of change requests, producing appropriate workflows for change requests, managing the implementation of a change request, monitoring and reporting the change request implementation process, reviewing and closing change requests. (Magdalena 2011).
4. *Release Management*, Management that promises a point of view regarding impacts and risks before releasing a service or policy to users.
5. *Configuration Management*, Identify, control, maintain and verify elements of an infrastructure or service. His responsibilities are:
 - a. Identify any relevant configuration material.
 - b. Maintain control and configuration.
 - c. Includes the status of the configuration material.

- d. Provides audit information from configuration materials.
- e. Formulate a search.

Service delivery is divided into five parts that support quality and cost efficiency in business, namely:

1. *Service Level Management*, management that ensures and optimizes information technology services in the relationship between service providers and customers. The main objective of service level management is to maintain and improve service quality and improve relationships with customers.
2. *Availability Management*. Management maximizes IT infrastructure and services to ensure that customers use the IT facilities they need whenever they want. To achieve high availability, even the slightest failure cannot be tolerated, and every problem must be resolved quickly.
3. *Capacity Management*. Management is carried out to meet the needs of users of an organization regarding the number of transactions as well as response time.
4. *Financial Management for IT services*. To provide work in a cost-effective manner and use financial and IT assets in Services.
5. *IT Services Continuity Management*. IT services provide a level of quality that can be trusted. To guarantee this quality.

3. Methodology

3.1. Research Instrument Development

Based on a literature study regarding the relevance of the use of information systems in related companies, user and company performance can be linked with a matrix related to Concept-Factors-Indicators as in Table 1.

Table 1. Development of Research Instrument

Factor	Indicator	Reference	Statement
<i>People</i>	<i>Leadership (PL1)</i>	Nur Zahra Afifah, 2021	The highest dominance comes from the leadership readiness indicators in the Company Encourage the formation of knowledge sharing in the environment Company.
	<i>Attitude (PL2)</i>	Abubakar et al., 2017	It is not difficult to understand that the level of absorption is higher will lead to better individual attitudes toward sharing knowledge.
	<i>Sharing (PL3)</i>	Intezari et al., 2017	To facilitate and promote knowledge sharing as a method of transferring information between individuals, organizations must have a strong culture.
	<i>Innovation (PL4)</i>	Lee, M. C. (2016).	Interaction and innovation knowledge, like a community practice
	<i>Skill (PL5)</i>	Abubakar et al., 2017	Skills have Sufficient disciplinary knowledge and know how to work together with others to function as a team
	<i>Teamwork (PL6)</i>	Johnny Chin Fui Chung et al., 2013	Skills have Sufficient disciplinary knowledge and know how to work together with others to function as a team
	<i>Organization (PL7)</i>	Abubakar et al., 2017	Both the business and academic communities believe that by leveraging knowledge, organizations can sustain their long-term competitive advantage.
<i>Communities Standart</i>	Venkatraman, S., & Venkatraman, R.	Resource this human, who can innovate and update knowledge, has potential. To create	

	(PL8)	(2018).	value for the future organization and form the basis to review and renew development community practice.
Process	<i>Integration (PC1)</i>	Lena Magdalena. (2011).	Knowledge and business processes must be integrated and managed throughout their life cycle Fully combined benefits.
	<i>Best Practice (PC2)</i>	Lena Magdalena. (2011).	Employees often won't share information because they feel it will lower the value of their personality to the company if they share secrets or best practices that have been studied for years.
	<i>Incident Management (PC3)</i>	Lena Magdalena. (2011).	Ensuring that services or parts of services within an organization are promptly restored to their initial state while reducing any potential negative effects
	<i>Problem Management (PC4)</i>	Lena Magdalena. (2011).	Management that allows a diagnosis to be made of incidents that frequently occur. So it will correct errors in the information technology infrastructure and be done proactively to prevent problems
	<i>Change Management (PC5)</i>	Lena Magdalena. (2011).	ensuring IT can be evaluated and controlled, while minimizing negative impacts on the business
	<i>Release Management (PC6)</i>	Lena Magdalena. (2011).	a point of view regarding the impacts and risks before releasing a service or policy to users
	<i>Configuration Management (PC7)</i>	Lena Magdalena. (2011).	Identify, control, maintain and verify elements of an infrastructure or service
	<i>Service Level Management (PC8)</i>	Lena Magdalena. (2011).	Management that ensures and optimizes information technology services in the relationship between service providers and customers
	<i>Availability Management (PC9)</i>	Lena Magdalena. (2011).	Maximize IT infrastructure and services to ensure that customers use the IT facilities they need whenever they want
	<i>Capacity Management (PC10)</i>	Lena Magdalena. (2011).	Management is carried out to meet the needs of users of an organization regarding the number of transactions as well as response time
	<i>Financial Management for IT Services (PC11)</i>	Lena Magdalena. (2011).	cost-effectively providing work and using financial and IT assets in Services
	<i>IT Services Continuity Management IT (PC12)</i>	Lena Magdalena. (2011).	Providing a level of quality that can be trusted To guarantee that quality
Tools	<i>Data stores and format (TL1)</i>	Emile Segev (2010)	Most activities Knowledge management is a combination of business processes and information technology.
	<i>Network (TL2)</i>	Hindawi (2015)	Knowledge that is obtained from the source knowledge is socialized via networking inside an organization.
	<i>Internet (TL3)</i>	Santoro et al., 2017	The Internet of Things (IoT), is changing how knowledge is managed within organizations, calling new and inventive knowledge management systems and open approaches, to encourage the flow

<i>Decision Tools (TL4)</i>	Leila Shahmoradi et al., 2017	To convert explicit knowledge into knowledge tacit, data warehousing and information systems are some of the technologies that can be used and for knowledge conversion explicit into tacit knowledge, tools such as decision support systems and electronic performance support systems are used.
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3.2. Data Analysis Method

To determine if the company was prepared to implement a knowledge management system, quantitative research was conducted. The instruments included in the disseminated questionnaires are subjected to reliability tests to determine their suitability for use as research data. We will utilize Cronbach's Alpha value in the reliability test. One coefficient that may be used to characterize the degree of relationship between the components in a set is called Cronbach's Alpha. If the Cronbach's Alpha number is more than 0.60, the reliability test is considered good.

To ascertain whether the data satisfies the conditions for conducting factor analysis, do a validity test using the KMO and Barlet test values. The Measure of Sampling Adequacy approach is employed by KMO in cases where the acceptable or tolerable value is more than 0.5. On the other hand, the Barlet Test (Barlet Tet of Sphericity) employs,

4. Results and Discussion

Respondent demographics related to this ITSM research include length of work, gender, age, highest level of education, and level of understanding of ITSM in the telecommunications sector. This aims to describe the background of all respondents who were sampled in the research. The following is a description of the respondents in the research. In this study, the total of respondents is 100 employees. Based on Table 2, the respondents are dominated by males with 85 respondents (85%), and the rest are 15 female respondents (15%). In terms of age, most respondents are 31-40 years old as many as 40 people (40%), the rest are 20-30 years old (29%), 41-50 years old (21%), and > 50 years old (10%). Regarding the experience of working in the helpdesk unit, most respondents have experience of less than 2 years with 79 respondents (79%), the rest are 2-4 years with 18 respondents (18%), and the above of 5 years with 3 respondents (3%).

Table 1. Demographic Data of Respondents

Variable	Data	Percentage
Gender	Male	85%
	Female	15%
Age	20-30 years old	29%
	31-40 years old	40%
	41-50 years old	21%
	>50 years old	10%
Helpdesk Experience	<2 years	79%
	2-4 years	18%
	> 5 years	3%

4.1. Reliability Test and Validity Test

The Reliability Test is conducted to assess the credibility of the questionnaire instruments used in this research. The test employs Cronbach's Alpha as a coefficient to gauge the interrelatedness among elements within the set. SPSS software is utilized to perform the reliability testing on a sample of 100 respondents. The decisions regarding the reliability are based on Cronbach's Alpha values, where

values > 0.70 are accepted, > 0.80 are considered commendable, and > 0.90 are seen as highly commendable. The Cronbach's Alpha value obtained from 24 indicators is 0.931, signifying that the instrument variables utilized in this research exhibit high reliability as shown in Table 3.

Table 3. Reliability Statistics

Cronbach's Alpha	N of Items
0.931	24

The Validity Test using KMO & Barlett's Test is conducted to ascertain whether the collected data meets the criteria for factor analysis. KMO employs the Measure of Sampling Adequacy technique, where a value above 0.5 is deemed acceptable. On the other hand, Barlett's Test (Barlett Test of Sphericity) uses the significance threshold (Sig.) with a value less than 0.05 to determine the suitability of the data. The outcomes of the KMO-MSA validity test, with a remarkable value of 0.841, and the Barlett's Test value of 0.000. This suggests that the collected data is highly suitable for factor analysis, ensuring its credibility and accuracy in the analytical process. Table 4.

Table 4. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.841
Bartlett's Test of Sphericity	Approx. Chi-Square	1.943E3
	df	253
	Sig.	.000

4.2. Total Variance Explained

The Total Variance Explained value serves as an indicator to ascertain the number of factors that can be determined based on the Initial Eigenvalues, considering those greater than 1. Upon factor extraction from a set of variables, a remarkable outcome unfolds—four novel factors emerge, encompassing the entirety of components with an impressive cumulative extraction value of 65.056% as shown in Table 5

Table 5. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.975	43.370	43.370	9.975	43.370	43.370	7.021	30.526	30.526
2	2.863	12.448	55.818	2.863	12.448	55.818	4.944	21.494	52.020
3	2.125	9.238	65.056	2.125	9.238	65.056	2.998	13.036	65.056
4	1.510	6.566	71.622						
5	.846	3.680	75.303						
6	.742	3.225	78.527						
7	.720	3.128	81.656						
8	.658	2.861	84.517						
9	.531	2.308	86.824						
10	.437	1.899	88.723						
11	.376	1.634	90.357						
12	.367	1.596	91.953						
13	.325	1.413	93.366						
14	.295	1.284	94.650						
15	.257	1.117	95.767						
16	.215	.934	96.701						
17	.182	.790	97.491						
18	.159	.690	98.180						
19	.128	.558	98.739						
20	.097	.424	99.162						
21	.094	.407	99.569						
22	.058	.250	99.819						
23	.042	.181	100.000						

Extraction Method: Principal Component Analysis.

(Source: Author's Analysis Results, 2021)

4.3. Rotated Component Matrix

Upon completion of the factor extraction process, the subsequent stage involves identifying the indicators for each newly derived factor. The robust correlations among these indicators signify their potential for homogenous grouping, thereby facilitating the formation of common factors or construct factors for each indicator as shown I Table 6.

Table 6: Rotated Component Matrix

	Component		
	1	2	3
PC8	.871		
TL1	.837		
PC7	.834		
TL3	.774		
TL4	.766		
PC10	.750		
PC12	.747		
TL2	.739		
PC9	.732		
PC11	.730		
PC6	.695		
PL7		.848	
PC1		.829	
PC4		.824	
PL6		.802	
PL5		.774	
PC5		.734	
PC3		.585	
PC2			
PL3			.859
PL1			.830
PL2			.826
PL4			.668

(Source: Author's Analysis Results, 2021)

The first new factor is Full Management Maintenance Service, which is a representation of several variables consisting of the variables: Service Leve Management (PC8), Data Stores and Formats (TL1), Configuration Management (PC7), Internet (TL3), Decision Tools (TL4), Capacity Management (PC10), Availability Management (PC9), IT Services Continuity Management IT (PC12), Network (TL2), Financial Management for IT Services (PC11), Release Management (PC6) as Shown in Fig. 3.

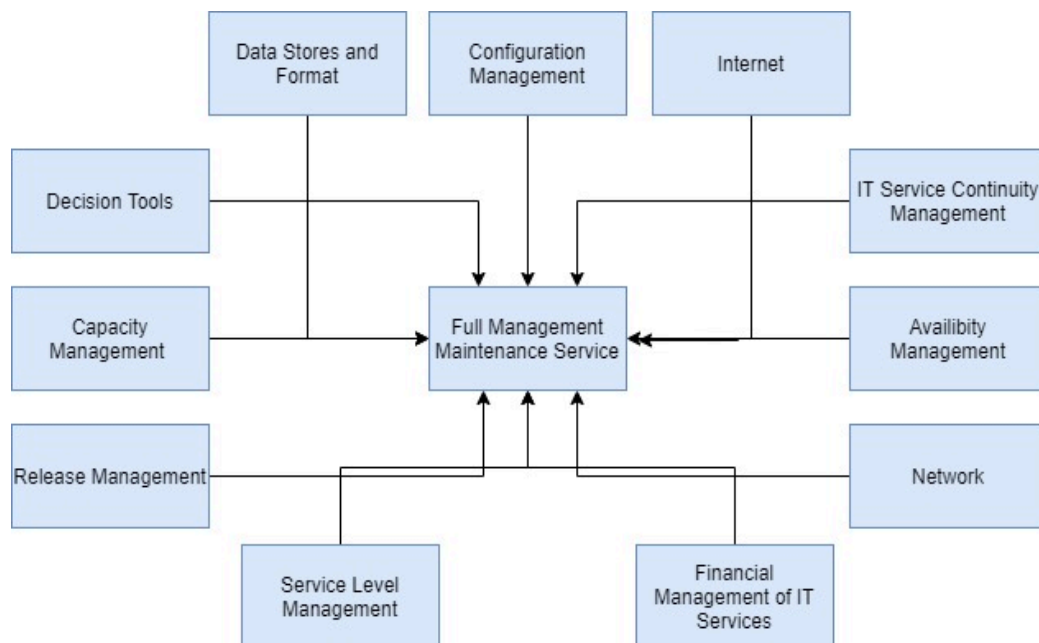


Fig. 3 Indicators of Full Management Maintenance Service Factors

The second new factor is Human Resources, which is a representation of several variables consisting of the variables: Organization (PL7), Integration (PC1), Problem Management (PC4), Teamwork (PL6), Skill (PL5), Change Management (PC5), Incident (PC3).

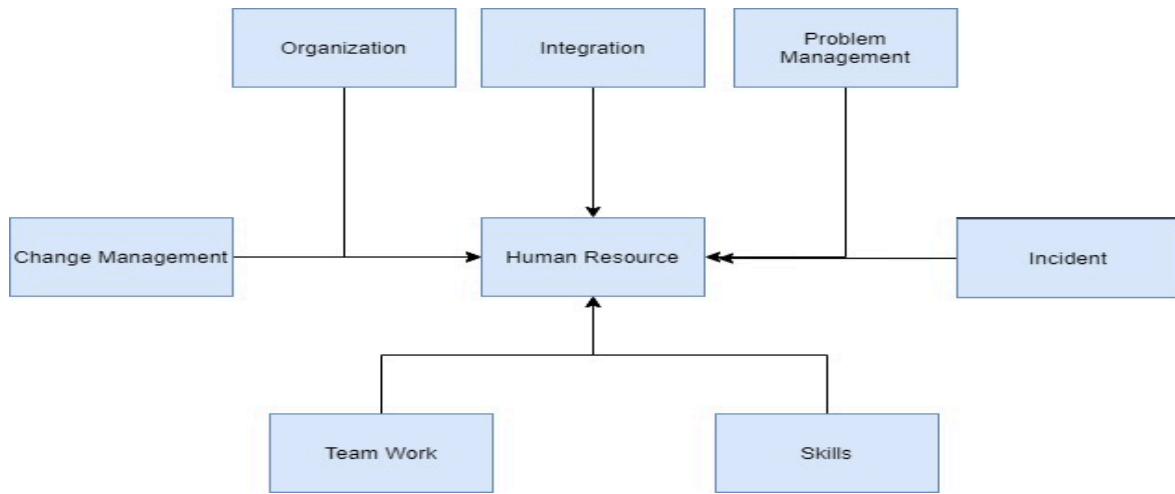


Fig. 4: Indicators of Human Resource Factors

The third new factor is Service Process, which is a representation of several variables consisting of the variables: Sharing (PL3), Attitude (PL2), Leadership (PL1), and Innovation (PL4).

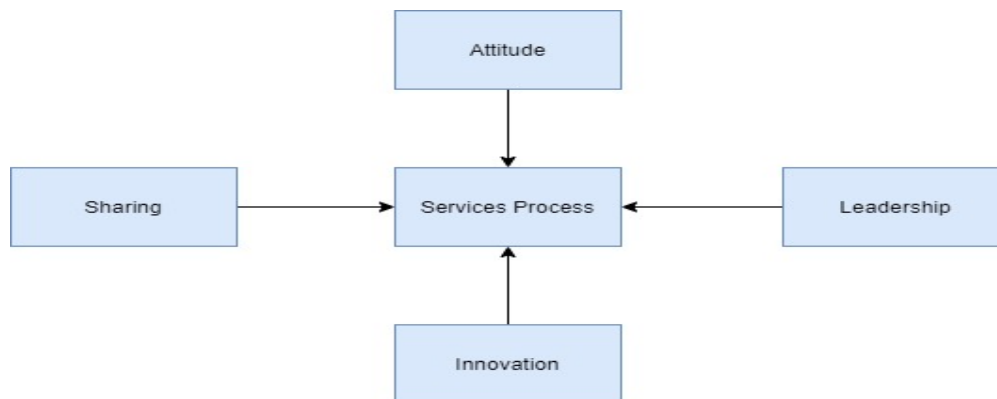


Fig. 5: Indicators of The Services Process Factor

4.4. Regression Analysis

By pinpointing three novel factors derived through factor analysis, these factors will serve as a means to evaluate the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors. These factors are categorized as Full Management Maintenance Service, human resources, and service process. Figure 7 provides an insightful overview of these newly identified components. The culmination of the research has led to the formulation of an equation that can be employed as a formula to gauge the level of organizational preparation for ITSM implementation.

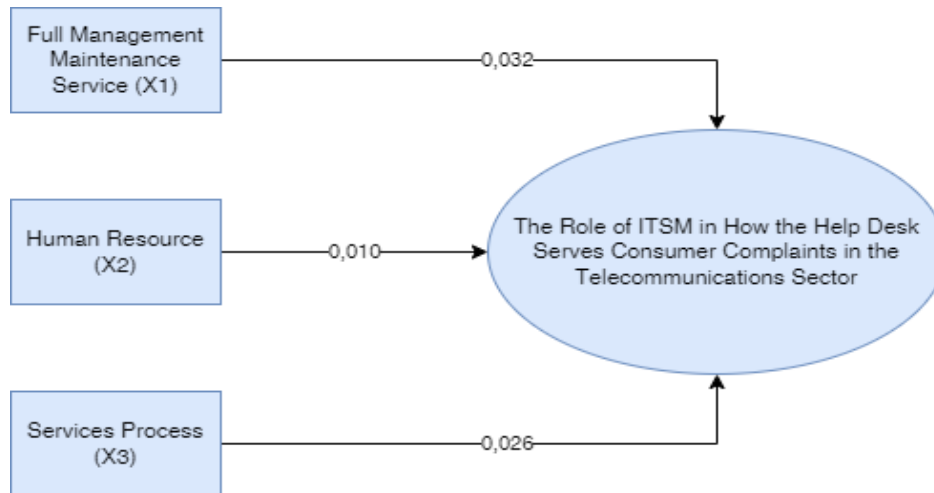


Fig. 6: New Factors Influencing Information Technology Service Management

The model result above shows that:

- 1) The first factor, which is a composite of numerous variables, can contribute 0.032 to respondents' understanding of the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors.
- 2) The second factor has a positive value of 0.010, indicating that decreased indicator quality can raise respondents' understanding of the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors.
- 3) The third factor, has a positive value of 0.026, which may contribute to respondents' understanding of the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors.

The shape of the mathematical equation from the model described above is shown below:

$$Y = 7.949 + 0.032 X_1 - 0.010 X_2 - 0.026 X_3$$

With an explanation of the constraints on the value of X:

$$\begin{aligned} -2.403 &\leq X_1 \leq 2.458 \\ -2.661 &\leq X_2 \leq 2.633 \\ -2.749 &\leq X_3 \leq 2.428 \end{aligned}$$

This study holds theoretical significance in the academic realm, bridging gaps to uncover novel factors that pertain to the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors.

Empirical validation scrutinizes the impact of these factors on organizational readiness, offering fresh perspectives. The study's dynamic capability approach not only probes organizational readiness but also prescribes strategies for optimal ITSM implementation integration. By delineating the dimensions of the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors., this research enriches the literature. Unlike prior studies, which separated ITSM composition and organizational readiness, this study pioneers their conjoined analysis.

Following the simulation of the model, an illustration was obtained to reach the optimum value of the role of ITSM in how the helpdesk serves consumer complaints in the telecommunication sectors

toward applying ITSM is 8.126 on a scale of 1.000 to 10.000. If the requirement is ignored, the degree of organizational readiness falls to 7.928, as indicated in Table 7.

Table 7. Model Simulation

Variabel Condition	Y	β_0	X ₁	X ₂	X ₃
Normal	7.949	7.949	0	0	0
Minimum	7.928	7.949	-2.403	-2.661	-2.749
Maximum	7.942	7.949	2.458	2.263	2.428
Unexpected	7.928	7.949	-2.403	2.633	2.428
Optimum	8.126	7.949	2.458	-2.661	-2.749

4.5. Managerial Implications

After the questionnaire was distributed, the ITSM role value was determined to be 7.949, falling within the categories of Fairly Good and Good. We determined the minimum and maximum values for each component based on the derived factor regression. Table 7. displays the findings of this regression's lowest and maximum values.

In Table 7. The results of ITSM's role in how the helpdesk handles consumer complaints in the telecommunications sector as follows:

1. *Normal Conditions*: The analytical value of respondents' ITSM comprehension in this circumstance is 7.949, which falls into the "quite good" group. The values of the newly discovered components are neither added nor subtracted under this scenario. Each responder has a sufficient awareness of how to utilize ITSM, according to the data above, which makes it crucial when utilizing techniques to enhance complaint services in the telecom industry.
2. *Minimum Condition*: Under this condition, respondents' lowest level understanding of ITSM is analyzable at 7.928; this value falls into the medium category. This minimal requirement can be observed from the lowest value of all newly found factors. It should be mentioned that the understanding analysis value is low. Under normal circumstances, it was previously considered to be fairly good, but under minimum conditions, it drops to less. Training and basic ITSM knowledge are necessary to improve the quality of factors that can lower the level of understanding of ITSM.
3. *Maximum Condition*: By examining each newly found factor's greatest value, all newly discovered factors are enhanced above normal conditions. Under this situation, the respondents' greatest degree of comprehension of IT service management had an analytical value of 7.942. Two of the three new elements have the potential to lower the respondents' degree of ITSM understanding in this scenario, but if one of the factors has a high value, this decline may be managed to raise the caliber of the respondents' current understanding. This maximum condition has somewhat decreased in level when compared to typical situations.
4. *Un-Expected Conditions*: Unanticipated This condition raises the value of factors with negative values to the greatest value while lowering the value of factors with positive values to the lowest value. Following a testing procedure that involved lowering the value of positive variables to the lowest possible level and raising the value of negative components to the greatest possible level, the analytical value indicating the respondents' comprehension of TISM in severe settings was 7.928, falling into the bad group. If ITSM is to be used, businesses must educate employees about ITSM and offer training to raise their level of knowledge.
5. *Optimum Conditions*: Any newly discovered positive factors are raised to the greatest value and any negative elements are lowered to the lowest value. A result of 8.126, which indicates conditions that are much better than normal conditions and maximum conditions, was achieved

after assessing the ideal conditions in the ITSM understanding study. This score of 8.126 falls into the good category, meaning that when ITSM is used in the helpdesk method to handle customer complaints in the telecom industry in the future, potential users (helpdesk) will already be aware of the function of ITSM, allowing it to be used to enhance the performance of the entire maintenance division, including cellular providers, vendors, and subcontractors, in finishing.

5. Conclusion

This study reveals important factors driving the effectiveness of ITSM in enabling helpdesk teams to better serve telecom consumer complaints. The results highlight the need for robust full management maintenance services, human resource capabilities, and optimized service processes. However, future work should integrate data from helpdesk-consumer email communications to uncover more nuanced insights. Overall, the research provides useful empirical evidence on how ITSM principles can be applied to enhance helpdesk operations in the telecom sector. Tailoring ITSM practices to the specific organizational environment is crucial. Further studies could also compare ITSM roles across industries to identify universal versus context-specific effects.

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