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FORESTRY COMPANY SATISFACTION TOWARDS ONLINE INFORMATION SYSTEM IMPLEMENTATION OF FOREST PRODUCT MANAGEMENT (SI-PUHH)

Mangatas Simanjuntak[*)1], Arief Daryanto[**)], and Teddy Rusolono[***)]

[*)] PT. Salaki Summa Sejahtera
Kantor Taman A9 Unit B, Lt.3, Jl. Mega Kuningan Jakarta 12950
[**)] Department of Economics, Faculty of Economics and Management, Bogor Agricultural University
Jl. Kamper, Wing 4 Level 5, Campus IPB Dramaga, Bogor 16680
[***)] Department of Forest Management, Faculty of Forestry, Bogor Agricultural University
Academic Ring Road, Campus IPB Dramaga PO Box 168, Bogor 16680

ABSTRACT

This research was conducted with the aim 1) to analyze gaps that occurs between perception and expectations of the company implementation of SI-PUHH Online, 2) to analyze the level of satisfaction of the company implementation of SI-PUHH Online 3) Formulate a strategy to improve the quality of service implementation PUHH Information System Online. Analysis of the data used is the Importance Performance Analysis (IPA) and the Customer Satisfaction Index (CSI). The results showed that there are five attributes that considered important in determining customer satisfaction. These five attributes are: 1) System Online has a server that is up to date with internet bandwidth that is large so it is not easy down and can be accessed quickly; 2) response rapid administrator/operator; 3) accurate data in accordance with entrian company; 4) There is a backup server; and 5) Officer SI-Online PUHH always willing to help. The fifth attribute is an attribute that has a high level of importance, but in its implementation or performance is still unsatisfactory. Customer Satisfaction Index (CSI) on the implementation of this SIPUHH Online amounted to 72,07%, meaning that customers "satisfied" on the performance of services carried out by the Ministry of Environment and Forestry, but must maintain and improve the performance SERVQUAL PUHH Information System Online is to be able to satisfy the users company PUHH Information System Online.

Keywords: SI-PUHH Online, SERVQUAL, IPA, CSI

ABSTRAK

Penelitian ini dilakukan dengan tujuan 1) menganalisis kesenjangan yang terjadi antara persepsi dan harapan dari pelaksanaan perusahaan SI-PUHH Online, 2) menganalisis tingkat kepuasan dari pelaksanaan perusahaan SI-PUHH online; 3) Merumuskan strategi untuk meningkatkan kualitas pelaksanaan pelayanan Sistem Informasi PUHH online. Analisis data yang digunakan adalah analisis Importance Performance (IPA) dan Customer Satisfaction Index (CSI). Hasil penelitian menunjukkan bahwa ada lima atribut yang dianggap penting dalam menentukan kepuasan pelanggan. Kelima atribut adalah 1) server yang up to date dan tidak mudah down, 2) respon yang cepat dari administrator, 3) data akurat sesuai dengan entrian perusahaan, 4) ada backup server, 5) administrator selalu bersedia membantu. Atribut kelima adalah atribut yang memiliki tingkat kepentingan yang tinggi, namun dalam pelaksanaannya atau kinerja masih tidak memuaskan. Indeks Kepuasan Pelanggan (CSI) pada pelaksanaan SIPUHH online ini sebesar 72,07%, yang berarti bahwa pelanggan "puas" atas kinerja pelayanan yang dilakukan oleh Kementerian Lingkungan Hidup dan Kehutanan, tetapi harus mempertahankan dan meningkatkan kinerja SERVQUAL PUHH Sistem informasi online untuk dapat memuaskan pengguna perusahaan Sistem informasi PUHH online.

Kata kunci: SI-PUHH Online, SERVQUAL, IPA, CSI

[1] Corresponding author:
Email: mjuntak@yahoo.com

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INTRODUCTION

Forests in Indonesia are parts of the largest tropical forests in the world which should be properly managed due to their important role in improving the lives of the nation. One of the forestry products which has high economic value is wood. Its utilization process requires permit procedure, including Business Permit Timber Forest Product Utilization of Natural Forests (IUPHHKHA) in production forest. Forest-usage covers wide range of activities starting from forest planning, harvesting, forest skidding, measuring, wood testing, and transportation. The pressures coming from local and international environmentalists against the practices of forest management in Indonesia, including forest degradation and deforestation through illegal logging practices result in lower global competitiveness of wood raw material- based industries in Indonesia. Consequenlty, the government continues to make effort in improving forest-usage to be conducted by following the principles of Sustainable Forest Management (SFM), supported by online Information Systems Management of Forest (SIPUHH).

Online SI-PUHH is PUHH data transaction technology-based media, and information media of PUHH with realtime implementation which can be accessed at the Central, Provincial, and District-levels and by the company in accordance with Regulation No. IUPHHK P8/Menhut-II/2009, Regulation No. P.45/ Menhut-II/2009 on amendments to the Regulation No. P.55/Menhut-II/2006, stating that PUHH derived from state forests will implement online SI-PUHH starting on September 1, 2009. By online SI-PUHH, the distribution of timber forest products becomes simple, smooth, orderly and safe with the principle of timber tracking/Chain of Custody (CoC), availability of statistical data production and distribution of forest products in real time, optimalization of state revenue; i.e. Reforestation Fund (DR) and Forest Resource Provision (PSDH), increased professionalism of bureaucracy, legal certainty and affirmation of punishment. Online SI-PUHH supports the government policy in the implementation of Timber Legality Verification System (SVLK) as a system to verify the legality of timber as industrial raw materials. SVLK is a response to some countries' attitudes that join the European Union (EU) seeking for an assurance that the exported products to Europe are produced from legal wood raw materials with certification. Overdevest and Rickenbach (2006) argue that the certified wood from sustainably managed forests is crucial in market competition; therefore, the government is expected to give incentives to the forestry companies that have been implementing the principles of sustainable forest management.

Through the Forestry Regulation No. P41/Menhut-II/2014 replacing Forestry Regulation No. P.55/Menhut-II/2006, the Ministry of Forestry urges all companies of IUPHHK-HA to implement online SI-PUHH. Perdirjen BUK No. P.3/VI-BIKPHH/2014 dated June 10, 2014 Article 26 (2) states that IUPHHKHA holders must carry out online SI-PUHH no later than 1 (one) year from the enactment of the regulation. In late 2014, as many as 125 companies had implemented online SIPPUH.

In the online SI-PUHH System, the Ministry of Environment and Forestry is the service provider holding roles as administrators and operators, while companies of IUPHHKHA are the users, and the Online SIPPUH implementation is mandatory to be implemented. As the service provider, the Ministry of Environment and Forestry, should constantly improve the quality of the system, particularly from the aspect of expectations and perceptions of the companies (users). This study aimed to analyze the Forestry Company Satisfaction towards Implementation of Online Information System Management of Forest Production (Online SI-PUHH). The research problems of this study were formulated as follows: 1) How is the gap/inbalance occuring between the perception and expectations of the IUPHHKHA companies to the implementation of Online SI-PUHH?; 2) How is the level of satisfaction of the company with the implementation of Online SI-PUHH?; and 3) How is it to improve the quality of Online SI-PUHH implementation service?

Satisfaction level has a significant effect on loyalty, while it has no significant effect on recommendations. Loyalty has a positive relationship with customer recommendations, which means that loyalty has a significant effect on customer loyalty; thus increased loyalty of customers will contribute to an increase in customer recommendations (Ginting, 2014).

Results of the research conducted by Zuwita (2012) show that the satisfaction value of the users of the investment permit services in PTSP BKPM is equal to 62,84%, and Rosidi (2010) states that satisfaction of the costumers of seeds of PT. SHS is reasonably good with a quite large CSI value that is 64%.

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Romayah (2015) examines the Assessment on e-Government Implementation in the Investment Coordinating Board (Thesis), Management and Business Study Program, Graduate School of Bogor Agricultural University. The study was conducted with a descriptive qualitative method. Based on the analysis of IPA, the quality of the system with low performance and priority of improvements for the BKPM include system reliability, access speed, download system, and system efficiency, while the low performance in the information quality includes attributes of KEKINIAN, punctuality and presented information.

METHOD

The data used in this study were primary and secondary data. The first data were obtained directly from the first source i.e questionnaires from the companies of IUPHHK-HA as the Online PUHH Information System users until the end of 2014. Furthermore, the second data were obtained through literatures, data and documents obtained from the Ministry of Environment and Forestry Research on PUHH, the government policies regarding PUHH in Indonesia, Forestry Statistics Data and information from the internet.

Questionnaires were made based on the attributes of service quality expectations and satisfaction of the company with the implementation of Online SI-PUHH. The distribution of questionnaires was conducted through the Association of Indonesian Forest Concessionaires (APHI). Census data collection was from by companies that have used Online PUHH Information System (125 companies) by the end of 2014 (http://puhh.dephut.go.id). The number of companies returning the data was as many as 63 companies (60 were complete and three were incomplete), while companies that did not return the questionnaire were inactive at the time of the research or rejected to become respondents.

The dimensions and attributes that define the dimensions of the company's service quality satisfaction with the Online PUHH Online Information System were determined based on customer satisfaction research-based information systems of Landrum et al. (2009), Al-Hudhaif (2010), Tryan and Ross (2006), Myerscough & Mark (2002) that is tangible, reliability, responsiveness, assurance, and empathy.

Validity Test of the questionnaire was conducted to test the validity of each attribute, while the reliability test was conducted to test whether the question items contained in the questionnaire as used as a means of collecting such data remained consistent to measure the same conditions of the respondents. The validty was calculated by using Microsoft Excel, while the reliability was calculated by using SPSS 21.0 software for Windows.

Analysis of Imbalance/Gap was done by calculating SERVQUAL Score (IQ) developed by Zeithaml et al. (1990), which represents the difference between the value of the performance (P) and the value of the interest/expectation (E) of each attribute. Negative SQ indicates that there are indications of the quality gap in the quality attributes, whereas a positive indication of SERVQUAL Score shows sufficient quality to satisfy customers.

IPA method introduced by Martilla and James (1977) was used to measure the relationship between the priority of improving the quality of products/services known as Quadrant Analysis and Consumer Perception. This method was used to obtain information about the IUPHHKHA Company's satisfaction level on online SI-PUHH service by measuring the level of interest (expectations) and the level of execution (performance). The importance level of service quality indicates how important a variable service for customers is on service performance. The 5-level Likert scale used to measure the level of interest ranged from very important, important, quite important, less important and unimportant. IPA is a strategic tool that can quickly indicate the needs and desires as well as assess customer satisfaction (Wong et al. 2011). This method can be applied in evaluating and determining business strategies on a small scale (Levenburg et al. 2004), increasing educational technology services (Jairak et al. 2013), and sustaining forest management strategy (Kang et al. 2007). To gain the satisfaction level of consumers, the measurement of Customer Satisfaction Index can be conducted (Eboli and Mazzulla, 2009).

Forest utilization is expected to provide benefits to all stakeholders, including the government, employers and the public with the principles of SFM supported by PUHH. The government improves PUHH services through the application of information technology to the implementation of online SIPPUH. Good perception of service quality is perceived from the users (user-based

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approach) based on five SERVQUAL dimensions by Online SIPPUH users. Companies as online SIPPUH users provide an assessment of the level of interest (expectation) with the level of performance (perception) for the online PUHH Information System implementation. Company satisfaction measurement against online SIPPUH implementation was conducted by the methods of SERVQUAL Score and Importance Performance Analysis (IPA) based on expectations and satisfaction levels of companies towards the implementation of online SI-PUHH. To determine the level of satisfaction, Customer Satisfaction Index (CSI) measurement was conducted. Based on the obtained data analysis, imbalance and gap between expectations and satisfaction can be identified, and CSI and strategies to improve the quality of service of the implementation of online SIPPUH can be also be obtained. Furthermore, priority of the improvement actions for online SIPPUH implementation services can be formulated. The research framework can be seen in Figure 1.

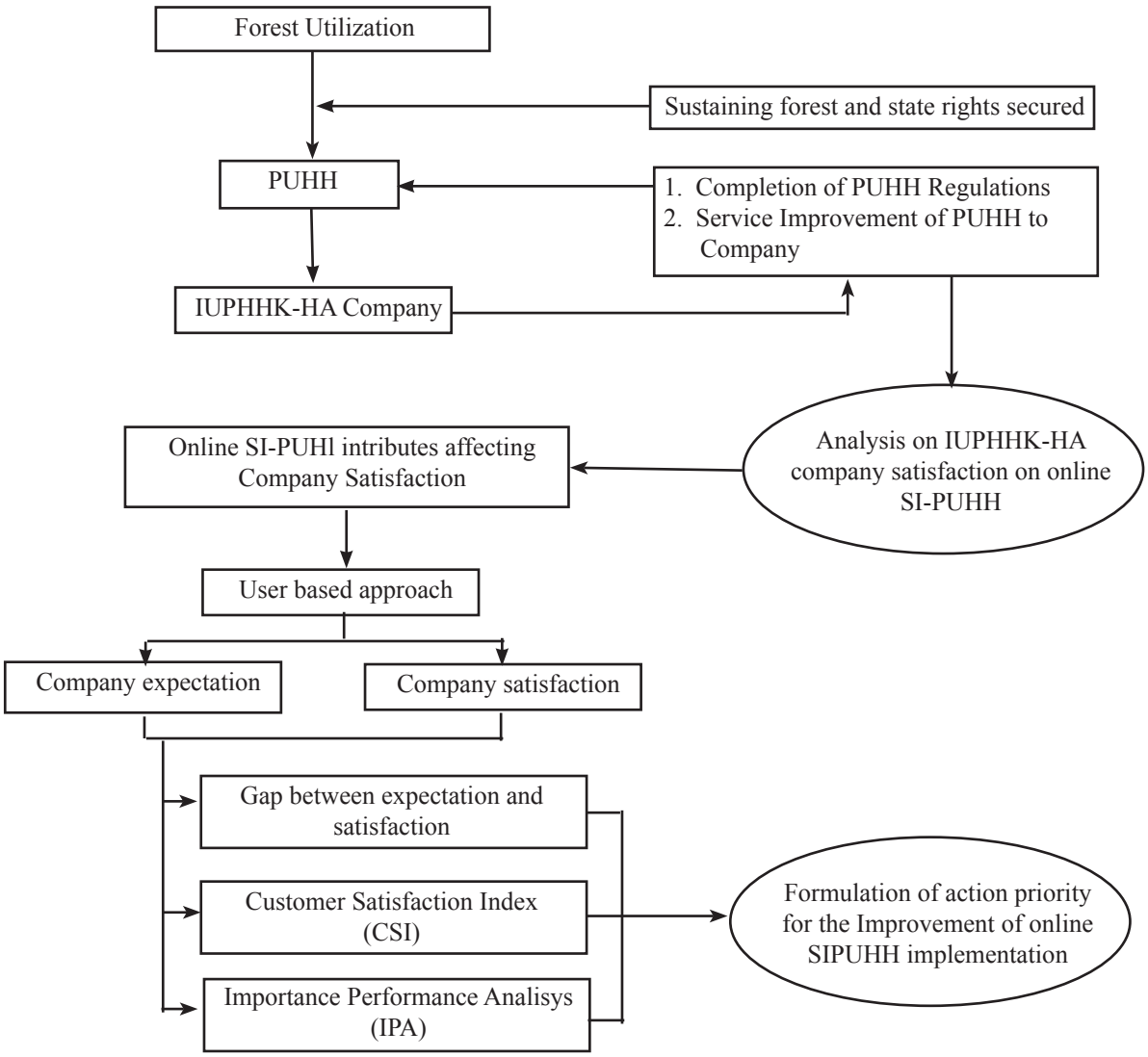

Figure 1. Research framework

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RESULTS

Validity and Measurement Reliability

Based on the test validity of r-count value for the importance-level value that is 0,289–0,843, it can be stated that the measurement is valid because r-count is > table-r (0,289>0,0254). R-count value for satisfaction level is 0,370–0,876, which means that the measurement is considered as valid because r-count is > r-table (0,370 > 0,0254).

The result of Alpha Cronbach value for consumer importance level is that α value equals 0,942, while that of the satisfaction level is 0,955. The data can be considered as reliable if α value is greater than 0,7 (Angelova and Zekiri, 2011). Based on the conditions, the measurement is determined to be reliable.

Expectation and Satisfaction-level Assesment of Online SI-PUHH Service

The average values of levels of importance, performance, and implementation gap of Online SI-PUHH based on 23 attributes of SERVQUAL are presented in Table 1. Service quality is a comparison between expectations and services perceived by the customer, it is necessary to determine the level of expectations and user satisfaction (Jiang et al. 2012). The company hopes that the quality of services provided by the Ministry of Environment and Forestry can meet their needs in the implementation of PUHH, increase the trust of the company on online SI-PUHH and succeed in the program of the Ministry of Environment and Forestry in terms of management of forest products online, even though nothing it has nothing to do with loyalty because online SIPPUH is mandatory.

The average scores of the company's expectation level on online SIPPUH range from 3,56 to 4,83, and the company argues that all SERVQUAL attributes have the scores of "important and very important" for the implementation of PUHH. It is important to meet the company's expectations for all of these attributes as the Ministry of Environment and Forestry serves a service provider. The smallest score is given to the attribute X3 that is the officers of online SI-PUHH should be neatly dressed and wear badges while on duty, and the largest score goes to X8 attribute that is the Administrators of online SI-PUHH master any problems complained by the company i.e. certainty in handling time based on the agreement established.

Problems often occur in online SI-PUHH are caused by maintenance system, internet network disruptions, lack of information as well as competence of the company operator. IUPHHKHA companies assess that the handling of complaints by a competent person and at the right time is the top priority of the company's expectations. In the event of operational constraints in the system, the company operator company will communicate with the officer of online SI-PUHH by phone or email but often does not get a quick response; as a result X8 attribute becomes the top priority of the company's expectations. To that end, the IUPHHKHA companies expect the call center of online SI-PUHH is available for 24 hours so that the constraints experienced can be resolved soon.

The performance level indicates that the performance of online PUHH Information System is at the satisfaction level of 3,02 to 4,13 with an average of 3,6. The members of the company state that they are 'fairly satisfied' and 'satisfied' with the performance of the service of online PUHH Information System based on the 23 attributes of SERVQUAL

The lowest satisfaction level of X11 attribute that is the officers online SI-PUHH always inform the service schedule that will be made to the company amounted to 3,02 of "reasonably satisfied". The company believes that the service schedule notification performed by the Ministry of Environment and Forestry and APHI has the lowest performance compared with the other attributes. Meanwhile, the highest performance score goes to X19 attribute of SERVQUAL i.e. the Ministry of Environment and Forestry gives the user id to the company to access online SI-PUHH with the average score of the performance level of 4,13 or "satisfied". These results indicate that administration of 'user id' to companies of IUPHHKHA by Ministry of Environment and Forests has met the expectations of the company and helps the company to control access to secure data.

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Table 1. Results of calculation of the average level scores of satisfaction, expectation and gap of SERVQUAL from the service attributes

Dimensions/ attributes	Description	Average level scores of satisfaction	Average level scores of expectation	Gap
Tangible				
X1	Website of online SI-PUHH online has an up to date server with large bandwith internet which will not be down easily and can be accessed quickly	3,29	4,62	-1,33
X2	Highly attractive design of online SI-PUHH Sites/website	3,80	3,90	-0,10
X3	The officers of online SI-PUHH are neatly dressed and wear an identity card while on duty	3,43	3,56	-0,13
X4	Website of online SI-PUHH are user-friendly, understandable, and easy to operate	3,80	4,70	-0,90
X5	Online SI-PUHH disseminates information on time and at any time when it is required	3,97	4,73	-0,76
Reliability				
X6	If there is a problem in the operation of online PUHH, the company can obtain quick responses from the administrator/operator	3,46	4,54	-1,08
X7	Website of online SI-PUHH online provides quick and accurate service in entering, downloading, and uploading data	3,53	4,78	-1,25
X8	The administrator of online SI-PUHH masters all problems complained by the company and guarantees that the problems will be handled as scheduled.	3,85	4,83	-0,98
X9	Online SI-PUHH enables the company to control the forest product management and data should not be a problem or damaged and has the slightest error	3,79	4,63	-0,84
X10	There is a backup server of online SI-PUHH in different locations to anticipate the malfunction of the main server at the Ministry Office	3,22	4,72	-1,50
Responsiveness				
X11	The officers of online SI-PUHH always notify the company regarding the incoming service schedule	3,02	4,23	-1,23
X12	The officers of online SI-PUHH provide quick service in accordance with the schedule given to the company	3,30	4,41	-1,10
X13	The officers of online SI-PUHH are always willing to help the company to operate online SI-PUHH	3,30	4,55	-1,25
X14	The officers of online SI-PUHH always provide adequate time in responding the request of the company	3,34	4,43	-1,09
Assurance				
X15	The officers of online SI-PUHH give confidence and improve the professionalism of the company employees.	3,53	4,18	-0,65
X16	Online-SI-PUHH website is not easy to be hacked by the irresponsible parties and provides up to date back up	3,93	4,73	-0,80
X17	The officers of online SI-PUHH are friendly and polite to the company during the consultation session	3,75	4,33	-0,58
X18	The officers of online SI-UPHH are knowledgeable in carrying out their duties	3,53	4,44	-0,91
Empathy				
X19	The administrator of online SI-PUHH provides “user id” to the company to access the online SI-PUHH	4,13	4,80	-0,67
X20	Access to online SI-PUHH by the company must always be successful.	3,65	4,72	-1,07
X21	Online SI-PUHH has a 24 hour service support and it is easy to be contacted when a system error occurs	3,44	4,47	-1,03
X22	Use of online SI-PUHH gives benefits to the company	3,90	4,65	-0,75
X23	Ministry of Environment and Forestry holds trainings and provides regular system updates to the company	3,79	4,59	-0,80

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Gap Analysis

Based on Tables 1, there is a gap between expectations and satisfaction obtained by IUPHHKHA in the implementation of online SI-PUHH where SERVQUAL attribute has the value gap between -0,10 and – 0,150. The negative sign (-) indicates perception (performance) obtained by the company is smaller than expected. This means that the performance of the Ministry of Environment and Forestry as a service provider online SI-PUHH does not meet the expectations of users of online SI-PUHH.

The greatest gap score of SERVQUAL comes from X10 attribute i.e. there are backup servers of online SI-PUHH in different locations to anticipate malfunction of the main server at the Ministry of Environment and Forestry. Improvement to this attribute is the top priority, since the administration of forest products is an activity that is carried out continuously by IUPHHKHA. Consequently, there must be a guarantee that the server remains active. If the main server is not well-functioning (due to maintenance purpose so that the internet does not work or others), it can be immediately replaced with the backup server. The backup server is the lowest in the expectations and perceptions of online SI-PUHH users, and it is the worst attribute of service quality or in other words, it is the most unsatisfactory item for the companies of IUPHHKHA. Since the PUHH activities are mandatory and regular as part of the production, the company expects that the server in the ministry can be accessed at any time by the company.

The attribute with the second largest score gap is X1 attribute i.e. online SI- PUHH website has an up to date server with a large internet bandwidth that is not easily down and can be accessed quickly with a gap score of -1,33. X1 attribute is the second priority that must be addressed by the Ministry of Environment and Forests to ensure that online SI-PUHH has up to date hardware and software and easily accessed online SI-PUHH website, as long as it is connected by internet network and the server is not easily down/out of service when the company accesses it.

Meanwhile, the attribute that has the smallest SERVQUAL gap score is X2 attribute i.e. attractive design of the online SI-PUHH website with a value of -0,10. This indicates that the service in terms of design of online SI-PUHH Website display provided by the ministry to IUPHHKHA is the most satisfactory compared with other attributes.

Thus, the Ministry of Environment and Forestry should improve its performance regarding all service attributes by taking into account the priority scales that start from the attributes that have the largest gap to the smallest gap in order to achieve SERVQUAL which can satisfy the IUPHHKHA companies.

The gap analysis on the 5 dimensions of SERVQUAL dimensions shown in Table 2 shows that the service quality gap ranges from - 0,62 to - 1,28 with a negative sign (-) indicating that online SI-PUHH services have not been able to meet the expectations of the company users. Sequentially, the greatest gap to the smallest one starts from the dimensions of responsiveness, reliability, empathy, assurance to tangible which means handling or improvement in services needs to be prioritized in the dimension of responsiveness followed by reliability, empathy, tangible, and assurance dimensions.

The gap on the responsiveness dimension is greatly influenced by the X10 attribute with a score of -1,50 and by X13 attribute with a score of -1,25. Therefore, to improve performance, especially on the responsiveness dimension, the priority is improving the performance of the existing backup servers of online SI-PUHH at different locations and the SI-PUHH attendants are always willing to help the company operate the online system. The gap is still greater than that of the research finding by James, OM et al. 2012, where each dimension of SERVQUAL i.e. tangible, reliability, responsiveness, assurance, and empathy has the score of -0,11, -0,18, -0,16, -0,18, and -0,23 respectively. Therefore, the Ministry should be able to improve its services in order to meet the expectations of the company.

Table 2. Gap calculations of the five dimensions of SERVQUAL

Indicators	Satisfaction	Expectation	Gap
Tangible	3,58	4,20	-0,62
Reliability	3,72	4,70	-0,98
Responsiveness	3,20	4,48	-1,28
Assurance	3,64	4,42	-0,78
Empathy	3,74	4,61	-0,87

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Importance Performance Analysis (IPA)

Strategy analysis to increase customer satisfaction by Importance Performance Analysis (IPA) is a way to map the attributes of importance and performance. This analysis is used to determine the position of online SIPUHH service quality attributes based on the level of expectation and satisfaction according to the companies of IUPHHKHA applying online SI-PPUH. The attribute position is described in Cartesian diagram in Figure 2.

Quadrant A (high priority) consists of essential attributes whose performance are considered to be unsatisfactorily for IUPHHK-HA companies:

- X1: online SIPUHH Website has an up to date server with a large internet bandwidth that is not easily down and can be accessed quickly.
- X6: if there are problems in the operation of Online SIPUHH, the company will obtain a quick response from the administrator/operator of online SI-PPUH.
- X7: the processes of downloading and uploading data on online SI-PPUH are hardly problematic, and the data are accurate in accordance with the entries by the company.
- X10: availability of Online SI-PPUH backup servers in different locations to anticipate malfunction of the main server at the Ministry.
- X13: SI-PUHH officers of the Ministry of Environment and Forests are always willing to help the company operate its online SIPPUH.

Quadrant B (sustainable achievement) consists of attributes that are considered to be very important and in practice they are considered to have a good performance by the companies of IUPHHK-HA namely:

- X4: menu on online SI-PUHH format has been systematically arranged according to the needs of the company, easily understood, operated and equipped with manuals.
- X5: online SI-PUHH produces timely information whenever it is needed.
- X8: administrators of online SIPPUH can handle any problems experienced by the company well and handle them based on the established schedule.
- X9: online SI-PUHH makes companies easier to control the activities of forest product management and data are never problematic or damaged and the possibility of error is very small.
- X16: online SI-PUHH is not easily damaged by irresponsible parties, and the administrators of online SI-PPUH provide up to date back up data.
- X19: the Ministry of Environment and Forests provides user id/password to the company for online SI-PPUH access.
- X20: every company wants successful access to online SI-PUHH.
- X22: use of Online SI-PUHH is profitable for the company.
- X23: the Ministry of Environment and Forests offers training to companies in applying the online SI-PUHH and sends an easily understood letter to the company regarding SI-PUHH.

Quadrant C (low priority) consists of attributes whose levels of importance are average as assessed by online SIPPUH users and their implementation is also considered to be average, namely:

- X3: the officers of online SI-PUHH are dressed neatly and wear badges while on duty.
- X11: the officers of online SIPUHH always inform the service schedule that will be made to the company
- X12: the officers of SI-PUHH provide services quickly in accordance with a predetermined time to the company
- X14: the officers of online SI-PUHH always provide sufficient time to respond to requests of the companies
- X15: the officers of online SI-PUHH give confidence and improve the professionalism of the company
- X18: the officers of online SI-PUHH have good knowledge in performing their duties.
- X21: the officers of online SI-PUHH know the officers of the online SI-PUHH of the company.

Quadrant D (excessive) consists of the attributes that are deemed to be less important by the users, but their performances are well executed by the ministry and satisfy IUPHHK-HA as the online SI-PUHH users:

- X2: Attractive design of online SIPUHH websites
- X17: The officers of SI-online PUHH behave friendly and politely to the company during the consultation

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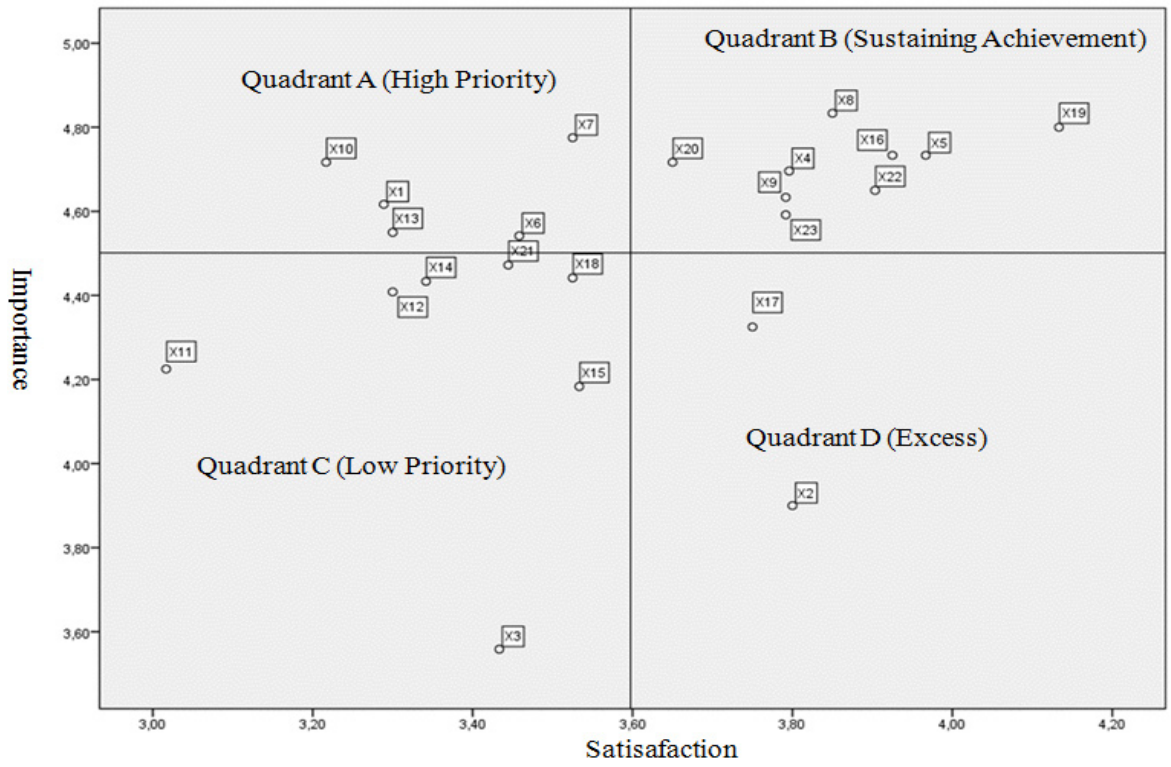

Figure 2. Attribute position in expectation-satisfaction diagram

Customer Satisfaction Index (CSI)

Customer Satisfaction Index (CSI) of SERVQUAL of online SI-PUHH amounted to 72,07%. When compared with the Satisfaction Range Scale (Simamora, 2002), this value is in the interval value of 60–80%, which means that the company of IUPHHKHA is "satisfied" with the performance of online SI-PPUH. However, the performance description shows that there are gaps between the expectations and performances, especially if all IUPHHK-HA and other timber utilization permits will apply online SI-PPUH.

Managerial Implications

There are several things that require attention from the Ministry of Environment and Forests in the service improvement of online SI-PUHH. Building customer satisfaction should start from customer expectations and satisfaction which will occur if online SI-PUHH service provider provides quality services. IUPHHKHA companies are expecting that online SI-PUHH services can function 24 hours a day, indicating that it is expected not to be shut down. The followings are the requirements to support this service:

- Providing up to date servers and infrastructure with sufficient bandwidth (internet connection) so that the company can easily and quickly access online SI-PUHH. Back-up servers ready to use are required to ensure online SI-PUHH services continue to function if the main server is not functioning due to maintenance, faulty, error application or interrupted bandwidth. It is hoped that a back-up server is placed in a location that is different from the main server.
- Providing technical services such as call centers and a message service that can be accessed 24 hours a day and can respond to complaints promptly and appropriately.
- Providing help desk and stand-by officers during office hours at the ministry, for a consultation or complaint if a company experiences difficulties in running the online SI-PUHH.
- Providing training periodically to the company's technical personnel to update their understanding in the systems and laws that are applied in online SI-PUHH.
- Providing solutions to the company if it cannot access online SI-PUHH caused by no connection between its server and that of the ministry or by malfunction of the online SI-PUHH server.
- Due to the rapid development of information technology systems that will affect technology in online SI-PUHH, clarification on a regular basis should be given to IUPHHK-HA regarding the minimum requirement device of online SI-PUHH that must be provided by the company and the technical personnel to run online SI-PUHH well.

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CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the levels of importance and service performance of online SI-PPUH, all service attributes have negative SERVQUAL gap from 0,10 to 1,50. The greatest service attribute gap is X10 attribut that is online SIPPUH backup servers at different locations affect the backups which is included in the reliability dimension.

Based on the analysis of Satisfaction-Expectation results, there are 5 attributes that should gain primary attention including reliable and up to date servers, quick responses from administrators, accurate data in accordance with the entries made by the companies, backup server, the administrators who are always willing to help. There were 9 attributes that should be maintained including the systematic-arranged menu, on-time information, problem mastering by the administrators, practical management of forest product by the company, not easily damaged, user id/ password provision, manageable access, profitable for the company, and training sessions. There are 7 attributes which are considered to be average based on their importance levels assessed by the users including neatly dressed officers, service schedule information, and prompt service, time provision to respond to requests of the company, increase the professionalism of the company, good knowledge, and know the Online SIPUHH officers of the company. There 2 attributes deemed to be less important, and their attention is excessive i.e. interesting display websites and friendly and polite officers.

The level of customer satisfaction reflected by the amount of the Customer Satisfaction Index (CSI), and the IUPHHKHA companies generally affirm their satisfaction with the online SI-PPUH SERVQUAL with CSI of 72,07%.

Recommendations

In regards to to the limitations on the scope of this study, the following assessments which need to be expanded involving all parties include the online SI-PUHH Wasganis (users) in the regions of the Province, Regency and BP2HP level. Therefore, the satisfaction of the companies of IUPHHKHA with the Onlie SI-PUHH implementation can be assessed to be more comprehensive.

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