



Analysis of Passenger Health and Safety Education: A Perception Study on River Transport at the Lower Ampera Jetty

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ABSTRACT

At the beginning of the research, there was a river boat accident in the form of a Speedboat which caused fatalities, injuries and missing. The purpose of this study was to analyze the safety of river transportation passengers at the Bawah Ampera Pier in order to improve the safety of existing river vessels. The analysis was carried out using the gap analysis method, namely by comparing actual conditions with desired conditions using the Importance Performance Analysis (IPA) technique and measuring the level of passenger satisfaction with the Customer Satisfaction Index (CSI). A survey was conducted at the Bawah Ampera Pier on users of long boat and speed boat services operating at the Bawah Ampera Pier with a total of 349 respondents. Data were collected through an instrument in the form of a questionnaire with a Likert scale model. The survey results showed that users of long boat and speed boat services were satisfied but there were still some expectations that needed to be met by the ship operator. There are 2 aspects that are considered important and prioritized to be improved based on the results of a survey of long boat and speed boat service users. Thus, the management or Land Transportation Management Center should carry out a campaign or counseling and evaluation to the operators and ship owners as well as to the users.

Keyword: Safety Education, River Transport, Analysis Passenger

1. INTRODUCTION

1.1 Background

Safety Equipment or safety equipment is any equipment designed to protect the lives of crew and passengers in an emergency[1]. In river transportation with Perdirjen Number: KP.3424/AP.402/DRJD/2020 explains that safety equipment (life) for ships <7 GT equipment in the form of simple lifebuoys and life jackets. While in Ministerial Regulation Number: PM. 61 of 2021 river vessels must have safety and health information at least in the form of stickers and health facilities in the form of lifejackets and lifebuoys, for health facilities, namely first aid equipment for accidents (P3K) with conditions and availability according to the information.

To minimize fatalities in river vessel accidents, operators and vessel owners should equip safety and health equipment and meet safety standards based on existing regulations because the transportation system prioritizes comfort, safety and security and is a form of quality service.

[2] The quality of service or services is seen from the consumer's response to the services consumed or felt, so that in the process of writing this final assignment, the author tried to analyze the perception or point of view of passengers or service users regarding safety equipment and in the end it can be seen what level of performance or level of satisfaction is felt by passengers and see what items must be maintained and improved.

1.2 Problem Formulation

1. What is the level of passenger satisfaction with the safety (life) and health equipment of river transportation at the Bawah Ampera Pier?
2. Is there a gap between expectations and performance of safety (life) and health equipment for river transportation at the Bawah Ampera Pier?
3. What safety (life) and health equipment is a priority for improvement according to passenger expectations?

1.3 Research Objectives

1. To determine the level of passenger satisfaction with the safety equipment (life) and health of river transportation at the Bawah Ampera Pier.
2. Knowing the gap between expectations and performance in safety equipment (life) and health of river transportation at the Bawah Ampera Pier.
3. Knowing the equipment that is a priority to be repaired according to passenger expectations.

1.4 Scope of problem

The problem topic discussed in this research is the safety (life) and health equipment for river and lake transportation in the form of Longboats and Speedboats, which consist of:

1. Safety Information
2. Health Information
3. Health Equipment (P3K)
4. Rescue Suit
5. Life Buoy

2. RESEARCH METHODOLOGY

2.1. Research Location

The location of this research is the Bawah Ampera Pier, 7 Ulu River Port Service Unit, Palembang City, South Sumatra Province.

2.2. Types of Research

The type of research used in this study is quantitative descriptive. [3] Data collected using descriptive quantitative methods is used to provide a picture of the actual situation, and also to answer questions related to the status of the research subjects.

2.3. Data Collection Methods

The type of research used by the author in this study is a questionnaire or survey for service users or river transportation users in the form of Longboats and Speedboats.

2.4. Data Processing Methods

After obtaining the required data, validity and reliability tests were carried out on a minimum sample of 30 respondents [4], after processing the demographic data of respondents to obtain the demographic characteristics of respondents and processing the data using the Customer Satisfaction Index (CSI) method to obtain the satisfaction of service users/passengers, the Gap Analysis method to obtain the gap between performance and expectations of passengers as service users, and the Importance Performance Analysis (IPA) method.

3. ANALYSIS AND DISCUSSION

3.1. Sample Determination

The determination of the sample in this study was carried out using the Issac Michael Table which can be used to determine the number of samples with the total population not known with certainty. Here is the Issac Michael Table.

Table 1. Issac Michael Table

N	s			N	s			N	s		
	1%	5%	10%		1%	5%	10%		1%	5%	10%
10	10	10	10	280	197	155	138	2800	537	310	247
15	15	14	14	290	202	158	140	3000	543	312	248
20	19	19	19	300	207	161	143	3500	558	317	251
25	24	23	23	320	216	167	147	4000	569	320	254
30	29	28	27	340	225	172	151	4500	578	323	255
35	33	32	31	360	234	177	155	5000	586	326	257
40	38	36	35	380	242	182	158	6000	598	329	259
45	42	40	39	400	250	186	162	7000	606	332	261
50	47	44	42	420	257	191	165	8000	613	334	263
55	51	48	46	440	265	195	168	9000	618	335	263
60	55	51	49	460	272	198	171	10000	622	336	263
65	59	55	53	480	279	202	173	15000	635	340	266
70	63	58	56	500	285	205	176	20000	642	342	267
75	67	62	59	550	301	213	182	30000	649	344	268
80	71	65	62	600	315	221	187	40000	653	345	269
85	75	68	65	650	329	227	191	50000	655	346	269
90	79	72	68	700	341	233	195	75000	658	346	270
95	83	75	71	750	352	238	199	100000	659	347	270
100	87	78	73	800	363	243	202	150000	661	347	270
110	94	84	78	850	373	247	205	200000	661	347	270
120	102	89	83	900	382	251	208	250000	662	348	270
130	109	95	88	950	391	255	211	300000	662	348	270
140	116	100	92	1000	399	258	213	350000	662	348	270
150	122	105	97	1100	414	265	217	400000	662	348	270
160	129	110	101	1200	427	270	221	450000	663	348	270
170	135	114	105	1300	440	275	224	500000	663	348	270
180	142	119	108	1400	450	279	227	550000	663	348	270
190	148	123	112	1500	460	283	229	600000	663	348	270
200	154	127	115	1600	469	286	232	650000	663	348	270
210	160	131	118	1700	477	289	234	700000	663	348	270
220	165	135	122	1800	485	292	235	750000	663	348	270
230	171	139	125	1900	492	294	237	800000	663	348	271
240	176	142	127	2000	498	297	238	850000	663	348	271
250	182	146	130	2200	510	301	241	900000	663	348	271
260	187	149	133	2400	520	304	243	950000	663	348	271
270	192	152	135	2600	529	307	245	1000000	663	348	271
								∞	664	349	272

Source:(Sugiyono, 2010)

With an error margin of 5%, the sample size was 349 respondents.

3.2. Questionnaire Planning

The questionnaire was designed with indicators that were felt and known directly by service users/passengers at the Bawah Ampera Pier. The assessment was carried out using a Likert scale (scale 1-5).

Table 2. Likert Scale

Category	Scale
Very satisfied	5
Satisfied	4
Normal/ Neutral	3
Less satisfied	2
Not satisfied	1

Source: (Syofian, Setiyaningsih, & Syamsiah, 2015)

Table 3. Questionnaire Components

4	Criteria	Question	Interest	Satisfaction	Indicator
1	Safety and Health Information	Is the information on the location of safety equipment easy for you to read and see?	X1	Y1	X1Y1
2		Is the information on the location of medical devices easy for you to read and see?	X2	Y2	X2Y2
3	Safety Facilities	Is the evacuation route information easy for you to read and see?	X3	Y3	X3Y3
4		Is the availability of life jackets on board adequate?	X4	Y4	X4Y4
5		Are the life jackets on the ship fit for use?	X5	Y5	X5Y5
6		Is the availability of lifebuoys on board adequate?	X6	Y6	X6Y6
7		Are life buoys on boats suitable for use?	X7	Y7	X7Y7
8	Health Facilities	Are the health facilities on board adequate?	X8	Y8	X8Y8
9		Are the health facilities on board good?	X9	Y9	X9Y9

3.3. Questionnaire Test

1. Validity Test

With a significance level of 5% and degrees of freedom ($df = N$), the r table value is 0.361. After conducting validity testing using SPSS for Windows software, the calculated r is $> r$ table.

Table 4. Validity Test

Criteria	Question Number	Pearson Correlation (R Count) Interest	Pearson Correlation (R Count) Performance	R Table	Validity
Safety and Health Information	1	0.780	0.897	0.361	Valid
	2	0.877	0.910	0.361	Valid
Safety facilities	3	0.813	0.709	0.361	Valid
	4	0.760	0.910	0.361	Valid
	5	0.886	0.688	0.361	Valid
	6	0.787	0.877	0.361	Valid
	7	0.805	0.749	0.361	Valid
Health Facilities	8	0.793	0.377	0.361	Valid
	9	0.740	0.766	0.361	Valid

2. Reliability Test

This test refers to the calculation using the help of SPSS for Windows software for 30 respondents (the minimum number of respondents for validity and reliability tests). Reliability testing is done by looking at the Cronbach Alpha, where a variable can be declared reliable if it has a Cronbach Alpha value > 0.6 . [5]

Table 5. Reliability Test

Number of Questions	Cronbach Alpha (Interest)	Cronbach Alpha (Performance)	Critical Value	Information
9	0.931	0.946	0.6	Reliable

3.4. Respondent Demographic Data Processing

Table 6. Respondent Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	176	50.4	50.4	50.4
	Woman	173	49.6	49.6	100.0
	Total	349	100.0	100.0	

The results in Table 3.6 show that there are 177 male respondents or 50.4%, then the remaining 172 people or 49.6% are female respondents. These results explain that users of transportation services in ship and river services at the Bawah Ampera Pier are dominated by men.

Table 7. Respondent Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<19	67	19.2	19.2	19.2
	>40	116	33.2	33.2	52.4
	19-30	92	26.4	26.4	78.8
	31-40	74	21.2	21.2	100.0
	Total	349	100.0	100.0	

The results in Table 3.7 show that the number of respondents under 19 years old is 67 people or 19.2%. There are respondents who are in the age range of 19 to 30 years old, totaling 92 people or 26.4%, respondents who are in the age range of 31 to 40 years old, totaling 74 people or 21.2%. In addition, there are also respondents over 40 years old, totaling 116 people or 33.2%. These results explain that users of transportation services in ship and river services at the Bawah Ampera Pier are dominated by the age range > 40 years.

Table 8. Respondent's Last Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	36	10.3	10.3	10.3
	Bachelor	21	6.0	6.0	16.3
	Elementary/Middle School	155	44.4	44.4	60.7
	Senior High School	137	39.3	39.3	100.0
	Total	349	100.0	100.0	

The results in Table 3.8 show that there are respondents with an elementary school/junior high school (SMP) education background totaling 155 people or 44.4%, then there are respondents whose educational background is high school totaling 137 people or 39.3%. Respondents who have a diploma education background are 36 people or 10.3%, those who have a bachelor's education

background are 21 people or 6.0%, and these results explain that the majority of users of transportation services at the Bawah Ampera Pier have an elementary school/junior high school (SMP) education background.

Table 9. Respondent's Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	Housewife	54	15.5	15.5	15.5
	Students	52	14.9	14.9	30.4
	Civil Servants/State-Owned Enterprises/TNI	24	6.9	6.9	37.2
	Doesn't work	64	18.3	18.3	55.6
	Self-employed/Entrepreneur	155	44.4	44.4	100.0
	Total	349	100.0	100.0	

The results in Table 3.9 show that the respondents of the study who have a work background as civil servants, state-owned enterprises or the TNI are 24 people or 6.8%. There are also respondents who are private employees/entrepreneurs amounting to 155 people or 44.41%, respondents who are housewives amounting to 54 people or 15.47%, respondents who are students or college students amounting to 52 people or 14.89%, and respondents who do not have a job amounting to 64 people or 18.33%. These results explain that the majority of users of transportation services at the Bawah Ampera Pier have a work background as Private Employee/Self-Employed.

3.5. Data Processing with CSI (Customer Satisfaction Index) Method

The Satisfaction Index analysis was conducted to see the level of passenger satisfaction from the 9 existing indicators to explain the 3 criteria for river boat equipment at Bawah Ampera Pier, Satpel 7 Ulu. The results of the CSI analysis conducted on the 9 indicators are in Table 3.10

Table 10. CSI Count

Question	Average Importance (MIS)	Average Performance (MSS)	Weighted Factor (WF)	Weighted Score (WS)
1	4.26	3.47	0.11	0.40
2	3.73	3.27	0.10	0.33
3	4.16	3.67	0.11	0.41
4	4.25	3.48	0.11	0.40
5	4.32	3.67	0.12	0.43
6	4.02	3.27	0.11	0.35
7	4.15	3.58	0.11	0.40
8	4.14	3.25	0.11	0.36
9	4.19	3.31	0.11	0.37

Average	4.14	3.44	0.11	0.38
Amount	37.24	30.97	1.00	3.45
Weighted Total (WT)				3.45
Customer Satisfaction Index (CSI)				68.91 %

Based on the final calculation results of the Customer Satisfaction Index (CSI) method, it can be seen that the User Satisfaction Index (CSI) was obtained at 68.91%. This indicates that users are SATISFIED with safety (life) and health equipment based on the satisfaction level criteria which shows that the CSI value with a range of values between 66-80.99% has a satisfied description.

3.6. Data Processing with GAP Analysis Method

GAP analysis was conducted to compare the performance of 9 existing indicators to explain 3 criteria on river vessel equipment with the interests or expectations of passengers at Bawah Ampera Pier, Satpel 7 Ulu. The results of the GAP analysis can be seen in Table 3.2.

Table 11. Gap Analysis

Criteria	Question	Mean Interes (X)	Mean Performanc e (Y)	GAP (YX)	Information
Safety and Health Information	1	4.26	3.47	-0.79	Not satisfied
	2	3.73	3.27	-0.46	Not satisfied
Safety facilities	3	4.16	3.67	-0.49	Not satisfied
	4	4.25	3.48	-0.77	Not satisfied
	5	4.32	3.67	-0.64	Not satisfied
	6	4.02	3.27	-0.75	Not satisfied
	7	4.15	3.58	-0.57	Not satisfied
	8	4.14	3.25	-0.89	Not Satisfied
Health Facilities	9	4.19	3.31	-0.88	Not satisfied

As seen from Table 4.12, the overall gap value on 9 indicators is negative. This indicates a gap between interests and performance according to passenger perception.

3.7. Data Processing with the IPA (Importance Performance Analysis) Method

The Cartesian diagram maps the equipment that falls into quadrants I, II, III, and IV in Figure 1.

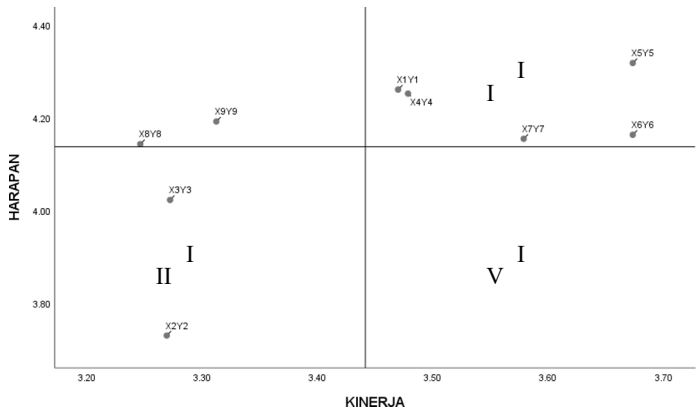


Figure 1. Science Quadrant Mapping

Based on the results shown in the diagram, it is known that there are 2 indicators included in quadrant 1, then 5 indicators included in quadrant 2, 2 indicators included in quadrant 3, and no indicators included in quadrant 4. The priority for improvement according to the results of the quadrant mapping are:

1. Quadrant I

In quadrant I, it is necessary to get top priority to be handled first in order to provide satisfaction to users and this quadrant shows performance that is not yet in accordance with expectations, but has the main interest to support the safety provided. The equipment in this quadrant is as follows:

X8Y8 : Availability of health facilities on board ship X9Y9 : Condition of health facilities on board ship

2. Quadrant II

In quadrant II, there are indicators that need to be maintained. These results explain that the five indicators are important factors but have performance that has also met the expectations of service users, so they need to be maintained. The equipment in this quadrant is as follows:

- X1Y1 : Information on the presence of safety equipment is easy to read and visible.
- X4Y4 : Availability of life jackets on board
- X5Y5 : Life jacket on the ship
- X6Y6 : Availability of lifebuoys on board ship X7Y7 : Lifebuoy on board ship

3. Quadrant III

Quadrant III is an indicator that has low priority. The equipment in this quadrant is as follows: X2Y2 : Information on the location of medical devices is easy to read and visible.

X3Y3 : Evacuation route information is easy to read and visible.

4. Quadrant IV

Quadrant IV is considered less important by users but the level of service provided has satisfied users, so the attributes in this quadrant can be said to be excessive. From the analysis results, there is no equipment included in this quadrant

4. COMPETING INTERESTS

4.1. Conclusion

Based on the results of the analysis that have been explained and the discussion description, the conclusions of this study can be explained as follows:

1. Based on the results of the analysis of the level of user satisfaction with regard to safety (life) and health equipment on longboats and speedboats operating at the Bawah Ampera Pier, a satisfaction index of 68.91% was obtained or the satisfied criteria.
2. Based on the results of the GAP analysis that has been carried out, it was found that all indicators relating to safety and health services on longboats and speedboats operating at the Bawah Ampera Pier have a gap between expectations and performance with a gap value of -0.89, namely regarding the availability of health facilities on board.
3. Based on the results of the IPA analysis that has been carried out, it was found that there are 2 service indicators for users of long boat and speed boat services that are included in quadrant I, namely the availability and condition of health facilities on board the ship (at least P3K) which is a priority indicator for improvement.

4.2. Suggestions

Referring to the conclusions of the research that have been explained, the recommendations that can be given through this research are for the Regulatory Agency Management to be able to carry out evaluation activities for safety equipment (life) and health on river transportation, which is the main priority for improvement, then implementing socialization of training on the use and utilization of good and correct safety equipment for ship operators, and routinely carrying out river and lake ship safety campaigns for all service users with the aim of increasing knowledge and awareness of each operator and user of river and lake ship services so that there is an improvement in the quality of service on river and lake ships at the Bawah Ampera Pier.

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