DEVELOPMENT OF MIF (*MUTIARA'S INVOICE FORM*) TENANT BILLING SYSTEM AT MUTIARA SIS AL-JUFRI AIRPORT PALU

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ABSTRACT

At Mutiara SIS Al-Jufri Airport, non-tax state revenue (PNBP) from the aviation industry is generated by offering a range of services to patrons, including refreshments and food for tenants. The tenant billing system at Mutiara SIS Al-Jufri Airport is still manual, so an organized billing system is required. Tenants can use the Mutiara's Invoice Form, a Google form for the MIF tenant billing system, to report bill payments that have been made. The MIF system was organized using the ADDIE method (analysis, design, development, implementation, and assessment). The MIF system's development was effectively finished, and the material validation assessment classified it as "very feasible." Furthermore, during interviews, the tenants provided affirmative answers to a limited number of tests.

Keyword: Concessionaire, Tenant Invoice System, MIF (Mutiara's Invoice Form)

1. INTRODUCTION

An airport is a specific area on land or water (including buildings, installations, and equipment) designated in whole or in part for the arrival, departure, and movement of aircraft. Airports are part of the transport infrastructure present in every country. It has a very important role in encouraging economic growth. This is because the flow of air traffic to and from the airport from within and outside the country at any time means that there is economic activity. In the structure of the Ministry of Transportation, Mutiara Sis Al-Jufri Airport acts as a task implementing unit with a classification as a Class 1 Airport. And regarding UPBU Mutiara Sis Al-Jufri is designated as a BLU Satker based on Decree Number 273/KMK.05/2017 dated 13 March 2017.

According to Taufik Ismail as an employee of the commercial services of Mutiara SIS Al-Jufri Palu airport during the interview activity, 'The funding of SIS Al-Jufri Palu Airport depends on two main sources, namely Pure Rupiah (RM) or the State Budget (APBN), and also Non-Tax State Revenue (PNBP)'. Increased revenue has occurred at Mutiara SIS-Al Jufri Airport in Palu due to developments in the era of BLU (Public Service Agency) status in the non-aeronautical or commercial sector.

A written agreement between the Central Government and the Airport Business Entity regarding the concessioned activities at the airport is called a concession agreement. The form of concession cooperation also includes lease, utilisation, and provision of infrastructure, including space rental for food and beverage tenants. There are 30 food and beverage tenants at Mutiara SIS Al-Jufri Palu airport.

Of course, as an airport with a new status to become a BLU, effective supervision of the revenue data collection system that has been formed is difficult. And in its application, data collection in financial reporting of food and beverage tenant revenues at Mutiara SIS Al-Jufri Palu airport is still not well systematised or arguably still conventional. For this reason, it is important to make a simple system or temporary monitoring system in systematic financial reporting before the process of making applications that will actually be made to manage aeronautical and non-aeronautical revenues. Therefore the author raised the research 'Development of the MIF (Mutiara's Invoice Form) Tenant Billing System. And based on the author's observations in the field found several problems, namely the needs analysis and design of the MIF tenant billing system. And the results of the validation of the MIF tenant billing system, as well as the results of the implementation of the MIF tenant billing system at Mutiara SIS Al-Jufri Palu airport.

Some previous studies have been many previous researchers who focus on website-based billing information systems, with examples of research by Surya, Pramartha, & Putra entitled Development of Website-Based Invoice Information Systems at PT. XYZ and Irfansyah, Mutia, & Oktaviani entitled Designing Information Systems for Payment of Rent Bills and Making Invoices for Mall Area Living World Alam Sutera Tangerang which focuses on designing information systems for payment of rent bills and making website-based tenant invoices.

So that this research is not too broad or deviates from its title, the author focuses this research on Mutiara SIS Al-Jufri Palu airport. This is due to the implementation of the MIF (pearl invoice form) tenant billing system at this airport. Then the data taken is sourced from food and beverages tenant partners and the airport that oversees tenant revenue billing issues. And from expert academics and practitioners. The google form-based tenant billing system only focuses on revenue bills sourced from food and beverages tenant rental partners.

2. METHODE

The research method is the process used by researchers to conduct research. The research method can be interpreted as a scientific way to obtain data with specific purposes and uses (Sugiyono, 2019). So in simple terms, the research method is a process or method used in research both in the process of data collection, data processing, data analysis and presentation of research data. In this research process, the research methods outlined in this chapter include research design, instrument design, data analysis techniques, and place and time of research.

Research and development (RnD) is a research and development method used in automated billing systems through Google Form. RnD is a research method used to design new products, test the performance of existing products, and develop and make new products.

The development of an automated billing system using Google Form, researchers need information related to the obstacles experienced by airport management and also the inconvenience of tenant partners in conducting a billing system that is still conventional or manual in payment and recording transactions to tenant partners. So that researchers conduct research for the purpose of changing the previous manual system to automation so that it can create effectiveness in work. The existence of an automated billing system can save time and costs and minimise delays in payment and recording transactions

from tenant partners to airport management so that it affects the airport's cash flow.

3. RESULT

A. Development of MIF (Mutiara's Invoice Form) Tenant Billing System at Mutiara SIS Al-Jufri Airport Palu

1. Needs Analysis Results

Analysis of system needs was carried out through a questionnaire distributed via google form distributed to 30 tenants as validation that a tenant billing system was needed to facilitate airport management work. As a calculation of this research using a Likert scale with scores and percentages as follows:

No	Needs Analysis	Score
1.	Strongly Agree	5
2.	Agree	4
3.	Undecided	3
4.	Disagree	2
5.	Strongly Disagree	1

By using the percentage calculation formula based on the score of the predetermined scale, namely :

$$P_s = \frac{S}{N} \times 100\%$$

With the interpretation of the assessment of the questionnaire instrument with a Likert scale:

SCALE ASSESSMENT

0 - 20% Very Unnecessary

21 - 40% Not necessary

41 - 60% Quite necessary

61 - 80% Need

81 - 100% Very necessary

After collecting data on the analysis of the needs of the tenant billing system needed at Mutiara SIS Al-Jufri Palu airport through questionnaires that have been distributed to tenants and interviews with airport management along with observations that have been made, the results of the analysis of system requirements using PIECES analysis are obtained:

1. Performance with data results of 82.65%. In this aspect the respondent stated 'very necessary' with the statement:

- Throughput: tenant billing system that can present data for future report making

- Response Time: tenant billing system that can present temporary reports / reports that can still be changed.

2. Information with data results 84.22%. In this aspect the respondent stated 'very necessary' with the statement:

- Accuracy: tenant billing system that is able to present data evidence or transfers automatically related.

- Information relevance: a tenant billing system that can help present financial reports that can be used at that time (real time) and a system that can find out information from external parties (for example bills).

3. Economy with data results 58.33%. In this aspect the respondent stated 'quite necessary' with the statement:

- Business benefits: a tenant billing system that can be a support in decision making and support in achieving targets.

4. Control with data results 67.56%. In this aspect the respondent stated 'necessary' with the statement:

- Control: a tenant billing system that can present information for policy changes from information obtained by the system to the conclusion of tenant performance evaluation.

- Security: as a system that helps find out functions related to the impact of an event.

5. Efficiency with data results 86.67%. In this aspect the respondent stated 'very necessary' with the statement:

- Efficiency: as a system that can present financial reports on time and to present summary reports by section within the specified or desired time period.

6. Service with data results 74.00%. In this aspect the respondent stated 'necessary' with the statement:

- Time: a tenant billing system that can help complete several reports within one year and a system that can present a summary of the overall report within the specified time period.

2. Design Results

From the conclusion of what features are needed in making the expected tenant billing system, there are 3 throughputs, namely the first system for the part of getting data from tenants and the second is a system that can be seen, managed and can be used as a collection of important data to become a tenant billing report. From this, the first system is made in the form of a google form as a system that can collect data from tenants. And the second system is the output results obtained from google form in the form of spreedsheets / excel data which can

later become the data needed to make tenant billing reports. For the third system is notification of information that there are tenants who have filled out the MIF google form system. The following features are contained in the MIF (Mutiara's Invoice Form) tenant billing system:

a. MIF google form system

This MIF (Mutiara's Invoice Form) tenant billing system in the form of a google form collects billing data from tenants to facilitate the input of data or transactions that have been carried out by tenants. The following features or functions are in the MIF tenant billing system in the google form system:
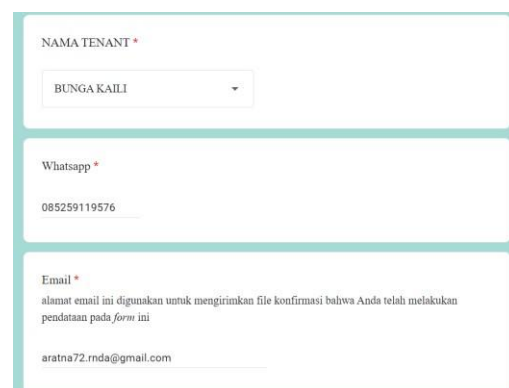
[1] Tenant Name

In this feature the tenant owner or tenant administrator who fills in will choose the name of his tenant. There will be several tenant names that have been attached in a drop-down and the tenant owner only needs to select the tenant name. This feature or function is required by the tenant owner.

[2] Whatsapp

The tenant owner in this feature will enter the active whatsapp number of the tenant owner who is easy to contact. In this case, it is easier if there is a problem in billing transactions, the airport management will immediately inform the tenant concerned. And this feature or function has information or notes on how to write the whatsapp number that should be 'Example: +6281xxxxxxxxx' but if the writing starts from "0871xxxxxxxx" or "+6287-2xxx-xxxx" it will not be a problem. However, this function or feature must be filled in as a condition for submitting billing transaction reporting in this google form.

[3] E-mail

The e-mail address in question is the tenant owner's e-mail. The main purpose of this function or feature is to be used to send a confirmation file that the tenant owner has made data collection on this google form. And also serves as another address if the tenant owner's whatsapp number is problematic or cannot be contacted. This feature is mandatory.

Picture 1. Fiture system MIF

[4] Payment Date

This feature is the date of payment of transactions that have been made by the tenant. The date entered must also match the proof of payment transfer that has been made. This makes it easier for airport management to cross-check transactions that have been made. This feature is mandatory.

[5] Payment Type

The type of payment selected by the tenant in accordance with the transaction will be presented. There will be a choice of payment types for rent, concession money, and others. Another option function in this feature is if the tenant wants to pay the existing fine bill or other pending payments. And this feature is a mandatory feature.

Picture 2. Fiture System MIF

[6] Billing Period

In this case, a drop-down of the payment period will be presented which will be made at the beginning of each month on the 5th. The payment period can be made for any type of payment, whether rent, concession or other. This feature is a mandatory feature.

[7] Rent

Charging rent is made in accordance with the nominal agreement between the tenant and airport management or in accordance with the billing letter that has been sent. Filling this feature by typing the nominal that has been done (example: 20 million written '20000000') is not mandatory, therefore if you still have not made a rental payment, it can be not filled in first or left blank.

Picture 3. Fiture System MIF

[8] Income/Month

Revenue / month is intended specifically for the results obtained by tenants every month. And for revenue per month filled in according to the terms of the agreement agreed upon by the tenant and airport management. Filling in revenue / month is filled in if you want to make a concession payment, for filling it is not mandatory and writing nominal only without a dot (example: 15000000)

[9] Concession Money

Payment of concession money in accordance with the agreement, namely 5% of income / month. If the concession is paid in instalments, it should be written in the remarks column in the payment type option that the concession paid is the first term. Writing concession money is only nominal and if you want to not make a payment or are making other types of payments then you can leave it blank.

[10] Attach Proof of Payment

Attach proof of transfer or payment uploaded through this feature and in the form of jpg, jpeg or png files, with a maximum file size limit of 1 GB. Upload proof of transfer as proof and validity of the transaction.


Picture 4. Fiture System MIF
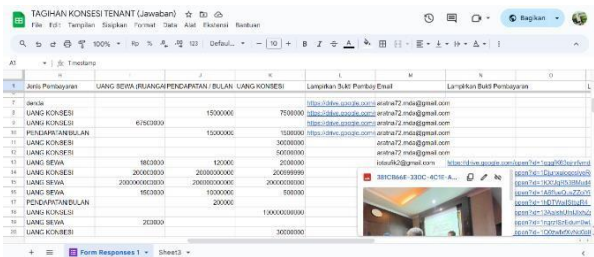
B.   MIF spreadsheets system

The spreadsheets system referred to in the mif system is a form of output from the google form used to collect tenant billing data. The output results that are displayed will be available data that will be managed again for the needs of making tenant billing reports. For the output results can also display evidence of transfers that have been made by the tenant. Later, if there are tenants who have filled out the google form, the airport management will cross-check the data that has been entered.
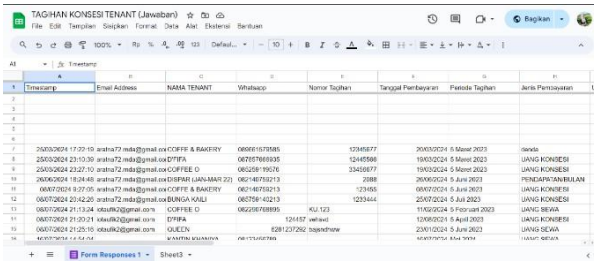
Picture 5. Spreadsheets system MIF
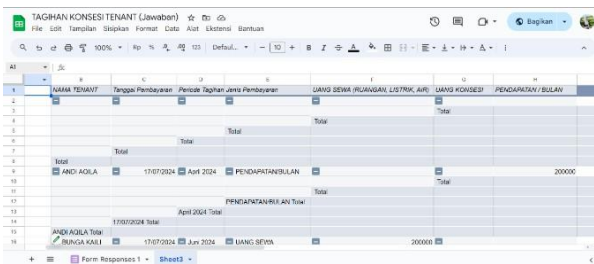

Picture 6. Spreadsheets system MIF

Picture 7. Spreadsheets system MIF

C.   MIF System Message Notification

Notification or notification via message to the airport management administrator informing that there are tenants who have filled out the mif google form. The purpose of creating a message notification-based mif

system through whatsapp is to inform and notify airport management administrators to check incoming transactions. The whatsapp number used is an active whatsapp number belonging to the airport management administrator who handles tenant bills. The message contains the type of payment, date of payment, proof of payment, the name of the tenant owner and the active whatsapp number of the tenant that has been entered in the mif google form.
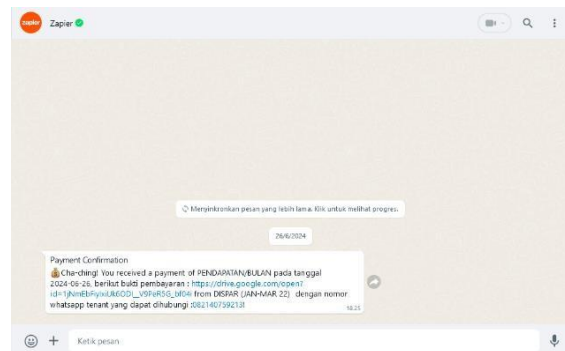
Picture 8. Fiture System MIF

B. Results of validation of the MIF (Mutiara's Invoice Form) tenant billing system at Mutiara SIS Al-Jufri Palu airport

1.   Expert Validation Results

After testing to experts, namely 3 academics and 3 stakeholders, the following is a description and analysis of the data using the Likert scale formula collected:

Functional Aspects:

No.	Aspects	Hasil	Description
1.	Interface View	87,50%	Very Decent
2.	Appropriate features	94,09%	Very Decent
3.	Usability of the system	100%	Very Decent
4.	System management	96,67%	Very Decent
5.	Overall function	100,00%	Very Decent

Interface Aspects :

No.	Aspects of	Hasil	Description
1.	Ease of use of the system	91,67%	Very Decent
2.	Easy to understand features	100%	Very Decent
3.	Ease of viewing data information	91,67%%	Very Decent
4.	The system is suitable as a tenant billing system	100%	Very Decent

And also obtained suggestions and input from experts, namely:

1. Taufik Ismail Husain Processor as a Cooperation Material with suggestions and input, namely that it might be able to be applied immediately after the prototype test.

2. Kur'anil as a Cooperation Material Processor with sufficient advice and input.

3. Sasli Rahmat as a Processor of System Cooperation Materials with suggestions and input is quite good.

4. Rahma Dini Maghfirotul Laily, S.Kom as First Expert Computer Technician It is hoped that in the future if there is further development, the results of data management can be made. Can also see which tenants have not / have paid.

5. Yudhis Thiro Kabul Y., M.Kom as a Research Manager with suggestions and input, namely that the filling address is replaced with bit.ly/.

6. Khoirina Wulan Nurbianti, S.Tr.T. as a First Expert Computer Technician with suggestions and input the system made is quite good and clear both the procedures and the flow of filling. But maybe a notification can be added that the tenant has successfully sent the data filled in.

C. Implementation of the MIF (Mutiara's Invoice Form) tenant billing system at Mutiara SIS Al-Jufri Palu airport.

In this study, due to the limited time owned by the author and its application in reality will take a long time to determine its impact on airport commercial management and there is no permission from the tenant of Mutiara SIS Al-Jufri Palu airport, the research only took 5 respondents to be

interviewed, stopping at the implementation stage, which is only up to the validity test from experts and tenants who state whether or not the system can be used properly. From the results of the interview it was found that:

1. Activeness with active subaspects in participating in using the MIF system as reporting payment transaction data that has been paid and the results of the interview are that tenants feel no objection to the existence of the MIF tenant billing system in the form of a google form.

2. Ease with the subaspect of ease of using the google form system in MIF with the results of the interview, namely the ease of using the MIF google form system is included in the very easy category because it only enters the bill that has been paid and uploads proof of bill payment transfer.

3. Use of the system with subaspects to find out whether the MIF system can make it easier for them to report transactions that have been made to the services and services of Mutiara SIS Al-Jufri Palu Airport with the results of the interview, namely usually in collecting payment data that has been made by tenants, the services and services come to the tenants, but now if the MIF system is implemented, after paying the bill, you can send proof of transaction data via mobile phone.

4. Interest with subaspects To find out how interested it is to learn the MIF system as a tenant billing system at Mutiara SIS Al-Jufri Airport Palu with the results of the interview that they are very interested in using it because it makes it easier for them if they want to confirm the payment of bills for the past period without having to go to the service and service office via mobile phone.

D. Benefits of MIF (Mutiara's Invoice Form) Tenant Billing System Development at Mutiara SIS Al-Jufri Airport Palu

After collecting and analysing the data, it can be concluded that the MIF (Mutiara's Invoice Form) tenant billing system is needed in the commercial management side of Mutiara SIS Al-Jufri Palu airport. Because the system really helps the work of commercial management. It can be seen from several aspects that have been carried out research, namely aspects of PIECES analysis. In the Performance aspect, namely the billing system that can process ready data for tenant income data, tenant rent, concessions and fines with clear dates and proof of payment without spending energy coming to tenants.

In the aspect of Information, the tenant billing system presents evidence of tenant

transaction data that has made bill payments, and can present data from google forms which include data on rent, concessions and income and others. In the aspect of Economy in the MIF system, the output results can be a support in decision making and support in achieving future targets. The Control aspect in this case from the data presented in the output results the management can evaluate the performance of tenants from their payments. The Efficiency aspect in this aspect is very effective in presenting data for financial reports. The Service aspect is the benefit of the MIF system in this case the data obtained or the excel output results later after filling in the google form can present data or summary data in a short period of time.

For its application in the application of the MIF system at Mutiara SIS Al-Jufri Palu airport tenants get a positive response from the tenants because the system is easy to use and makes it easier for them to report billing payment transaction data that has been done both past and present periods.

The following are the advantages of the MIF tenant billing system:

1. MIF Tenant Bill System google form: In use it is very easy to use, only by entering the link https://bit.ly/SistemTagihanTenantMIF and in use only entering the bill data that has been paid and uploading proof of payment. Compared to the application in the system which in its use is required to enter a user account or password not yet with features to enter other data. And in terms of economics, Google Form is cheaper or free compared to applications that use the system and must be maintained and updated per period of use.

2. MIF Tenant Billing System spreadsheets In this system the data is ready to be managed as material for financial reports that are ready in the future and in its use data in spreadsheets that can be stored or backed up both data and proof of payment. And in terms of effectiveness in use, namely very effective in data management and very economical in its use because to add the desired features google form spreadsheets can be connected to other features using add-ons in spreadsheets.

3. MIF Tenant Bill System whatsapp notification Indeed, in its use, the tenant bill system through google form is very vulnerable to misuse, but the presence of whatsapp notifications addressed to the admin of the service and cooperation is intended to recheck the data that has been entered into google form whether it is true that the data has made a payment. When compared to the application, sometimes if the internet is unstable, it is an error in using or downloading data and must update the

application so that it does not error. And in terms of economics using the *zapier* website system which is connected via google form and in its use does not require financing.

E. Obstacles faced in the development of the MIF (Mutiara's Invoice Form) Tenant Billing System at Mutiara SIS Al-Jufri Airport Palu

During the research process starting from the analysis, design, development and implementation stages, there are several obstacles experienced by the author and can be material for evaluating the process in further research. The following is an evaluation of the research process:

No.	Process	Evaluation
1.	*Analysis*	In the analysis process, there are obstacles in finding the results of past tenant income data so that only 2024 data is obtained and proof of past transactions is not found because it is still collective in its withdrawal.
2.	*Design*	In the design process, it is only constrained by making the whatsapp notification feature must use an additional website to connect it.
3.	*Development*	In this process, the expert assessment was carried out by 3 academic parties and 3 people from stakeholders, for data collection from stakeholders it was a little difficult because it was via whatsapp message in collecting the data. And documentation cannot be carried out due to the limited time of the researcher and uses the signatures of the validators to show the authenticity of the expert validator.
4.	*Implementation*	For the application of the MIF system at Mutiara SIS Al-Jufri

		Airport in Palu, it cannot be carried out widely due to the limited time of researchers and can only be carried out limited tests. And in its use can only help until the billing system monitoring process as long as the PNBP system is still not running optimally.

4. CONCLUSION

After carrying out research related to the title 'Development of the MIF (Mutiara's Invoice Form) Tenant Billing System at Mutiara SIS Al-Jufri Palu Airport' and the problems that have been written and resolved in the previous chapter, conclusions can be drawn, namely:

1. Based on the needs analysis that has been done, the tenant billing system needs a system that can collect data on rental payments, concession money and others without having to go to tenants or collect manual collective transaction evidence. After knowing that it is important to make a systematic collection of bill payment transactions, the researcher makes a MIF (Mutiara's Invoice Form) system in the form of google forms, spreadsheets, and notification notifications via whatsapp.

2. Based on the expert validity test, it is found that the system is 'very feasible' to be used as a tenant billing system at Mutiara SIS Al-Jufri Palu airport.

3. And for the implementation of the MIF system at Mutiara SIS Al-Jufri Palu airport tenants due to the limited time the researcher has for its implementation, a limited trial was conducted using interviews with 5 tenant representatives. And for the results of the interview show a positive response from the tenants, which is very easy to use, and helps them in reporting payment transaction data that has been done.

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