FACTORS AFFECTING THE SUCCESS OF THE BUILDING PERMIT LICENSING SERVICE IN DENPASAR CITY, BALI PROVINCE

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ABSTRACT

This study aims to identify the success factors involved in improving the building permit, or *Izin Mendirikan Bangunan* (IMB), licensing service in Denpasar City, Bali Province. These permits play an important role in providing legal assurance when owning or altering a building. However, in reality most of the buildings in Denpasar do not have such permits. There are various obstacles to their acceptance, such as society's perception that applying for one is expensive, troublesome and takes too much time. Therefore, it is necessary to conduct research on two related stakeholders, namely the community and the employees who work in the licensing service. Investigation was made by distributing a questionnaire survey to both the community and the officials. After conducting validity and reliability tests, the collected data were analyzed using factor analysis to determine the success factors. The study found that the factors influencing the IMB service in Denpasar City are: (1) transparency, (2) employees' ability, (3) convenience, (4) time, (5) employees' performance, and (6) employees' responsibility. Amongst these, transparency was shown to be the dominant success factor for improving IMB services, as indicated by the highest eigenvalue value (15,085) and variance (47.142%). The discriminant analysis results show that there is no difference in perception between the service employees and the community.

Keywords: Building permit; Community; Employees; Service

1.   INTRODUCTION

Building permits in Indonesia show approval from the local government to construct a building. They are granted to building owners to undertake a new development, as well as to alter, extend, reduce or maintain an existing building in accordance with the applicable local regulations. The licensing authority is part of local/regional government implementation, while building permits with a special function need to be authorized by the Central Government (Ministry of Public Works in Republic of Indonesia, 2007).

In the European Union (EU), building regulations are used to set minimum requirements for safe, healthy, energy-efficient and accessible buildings. These requirements are applied to provide a building control system, which is indispensable. A study by Pedro et al. (2011) compares the building permit procedures adopted in the 27 EU countries, using a statistical method to collect data from building regulatory systems in each country and reviewing the major legal documents. There is a clear trend towards construction products and services, which justifies a better insight into building control systems in the European Union (EU) (In the study,

no major differences were found concerning the procedures on how to obtain a building permit. Most of the procedures involved in undertaking construction work were covered: pre-consultation, the possibility of phasing, submission demands, checks carried out and maximum procedure time for planning approval, the possibility and time to object to a building permit being issued, the start of construction works, the frequency and timing of site inspections, fees, and completion of construction work.

The community expects good service, which nowdays has become a necessity. Especially in the globalized economic era, construction firms worldwide are encouraged to provide acceptable quality levels to ensure their position in the emerging international markets, especially those in developing economies such as Indonesia. Therefore, the need for an appropriate system that ensures quality control is critical (Hiyasat, in Berawi et al., 2013)

To ensure that the community's expectations are in line with existing conditions, the government should ensure that the needs of society for excellent service are met. Government agencies, especially the Integrated Licensing Services Agency *(Badan Pelayanan Perijinan Terpadu Kota Denpasar)* of Denpasar City need to develop a licensing service that is easy, quick and accountable. One of the tasks for this agency is to take into account IMB, or building permit, assessment.

As of 2015, there were 240,682 housing units in Denpasar, including 17,344 units (7.20%) of residential houses that already had an IMB. The remainder, 223,348 units (92.80%), did not have an IMB, according to the data available (Denpasar City Government, 2016).

The reason why the IMBs issued in Denpasar are at a very low level is due to misperceptions amongst the community, who perceive the IMB process as expensive, that it takes too much time and is troublesome. Furthermore, people usually prefer to use intermediary (middle agent) services to manage the IMB process, believing that it is a very inconvenient procedure to follow themselves. In general, the assumption is made that the IMB process is too expensive and complicated (Indonesian Ministry of National Development Planning, 2008). This situation may also be an obstacle to Denpasar's infrastructure development as discussed in Mandi (2015), problems resulting from obtaining authorization or license for a construction project from the government/related institution – in this case IMB – were found to be an unacceptable risk, which act as an obstacle that need to be dealt by contractors.

In a study by Amirbeigi (2012) on a European region (Stockholm), the building permit process was shown to take a great deal of time. The study showed that there was a lack of construction projects for residential buildings in the Stockholm region, with criticism of the municipalities for having a long processing time for reviewing building permits. The study was concerned with ways of optimizing the processing time of building permits. Accordingly, important parameters were investigated in order to maximize quality and efficiency. The time frame was also considered, since this often acts as one of the restricting factors in urban development; optimization of the processing time in issuing construction permits can be one of the elements of quality in service-oriented business organizations in a municipality such as Stockholm. The aim of the study was to analyze the building permit processing time, and to investigate different factors that have an influence on it. The results showed that using a Total Quality Management (TQM) strategy in the organization could help the municipality to continuously optimize its processing time. This implies that quality improvement leads to long-term customer satisfaction. A functional team developing solutions to problems using a TQM approach often shortens the time taken to produce services. Berawi et al. (2013) found that understanding of quality and its perceived processes can be used to deliver more added value and efficiency in building construction projects, such as Energy Efficient Buildings.

In addition, in developed countries such as in Europe and the USA, electronic building permission systems have been used since the early 1970s (e.g. in Italy, France and the Netherlands). In the USA, several components and sub-modules of the system had already started in the early 1930s. In Europe, electronic application for building permission has been defined as one of the 20 primary e-Government services and most of countries were obliged to deliver online services by 2005 under e-Europe strategies (eEurope 2003). However, Greece and several other European countries failed to address this challenge, therefore the electronic building permission system across Europe was extended, first until 2010, and then again until 2020. Bellos et al. (2015) had examined several factors which influence the success or failure of such cases by investigating what happened in Greece. The results of the investigations into the framework of building permission e-services in Greece showed the following benefits: (a) effective public management administration by simplification of licensing procedures; (b) a reduction in corruption; and (c) environmental benefits by reducing bureaucracy.

Furthermore, it is necessary to find best practices on how to define typical professional procedures that are accepted or prescribed as being correct or most effective. This is an interesting area, since noteworthy practices are being taken into account by local government, especially on building permits (IMB) to consider the specific areas of planning reviews, inspections, permits, management/administration, legal issues, customer services and information technology. In order to obtain guidelines, some procedures for reference and study can be found within publications such as AC251—the IAS Accreditation Criteria for Building Code Regulatory Agencies and Third-party Service Providers, which is the global standard for building department accreditation (IAS & MJC, 2017).

Based on the background previously described, investigation has been conducted in order to find solutions to the problem. This was based on how to manage building permit licensing services so that they are convenient and easy to follow. Therefore, the purposes of this study are: (1) to determine what factors affect IMB services, viewed from the perception of the community and the employees who provide the services and (2) to determine the dominant factors in the management of building permits (IMB) in Denpasar City. Special attention has been paid to the most dominant local government factors in order to optimize the services of IMB management. In this study, the perceptions of the community and of employees are analyzed separately, as the factors established may not necessarily be the same from the point of view of each group

2. RESEARCH METHODS

2.1. Factors that Determine Success

According to Horngren et al., cited in Fransisca (2015), there are four factors which influence the success of a project and need to be taken into consideration:

1) Quality
   Quality is an attempt to satisfy the customer at the time of purchase and during use, in terms of the total form and characteristics of the product or service, in order to to compete with other products or services. Good quality products or services are:
   a) Ones that meet or exceed customer expectations on a continuous basis.
   b) Able to provide satisfaction to customers.

2) Time
   This is the time required to respond to customer expectations of a product or service by an organization so that the target service time can be achieved.

3) Cost and Efficiency
   These relate to the cost of the product or service as per customer expectation. It is necessary to conduct research to ascertain this cost in accordance with customer expectations and to achieve efficiency.

4) Innovation
   Companies should always make innovations to products and services to be successful.

2.2. Factors that Determine the Quality of Services

To determine the quality of services, some studies have provided guidelines on how to manage better quality services. According to Moenir (cited in Mansur, 2008), good service is determined by factors such as: (1) awareness from leaders and officers; (2) rules that serve as a reference for service work; (3) organizational factors; (4) officer skills; and (5) support service facilities. Wolkins (cited in Mansur, 2008) stated that there are six factors which determine the quality of service on an ongoing basis. These are leadership, education, planning, review, communication, and awards and recognition. Quality public services, according to Atmaja (cited in Ihsanuddin, 2014), are achieved by: (1) organizational structure; (2) Employee's ability; and (3) the service system. According to Adnyana et al. (2015), there are six defining factors for success in government-society cooperation (KPM) in the development of the tourism infrastructure in Bali, namely: (a) consortium and risk factors; (b) socio-cultural factors; (c) legal factors; (d) technical factors; (e) economic factors; and (f) marketing factors.

An example of quality services provided in the tourism sector, which can be used to support this study, are critical success factors (CSFs). Nine CSFs of Public-Private-Community Partnership (PPCP) in the development of the tourism infrastructure are socio-cultural factors (value diversity 29.914%); legal factors (14.198%); procurement factors (5.330%); risk factors (4.956%); consortium factors (4.312%); technical factors (3.391%); economic factors (3.634%); financial factors (3.241%); and technological factors (3.224%). These factors can be influenced by typical Public-Private Partnerships (PPPs). In this way, the factors can be used to question financial support, consortia, technical issues, government guarantees, conditions of the project, and risk sharing. A study was conducted by Bing et al. (2005) which discussed the identification of CSF in Public-Private Partnerships (PPPs) in the UK. Tiong (1995) discussed the identification of CSF in Build-Operate-Transfer (BOT) projects, while Zhang (2005) discussed the identification of CSF in infrastructure development.

2.3. Statistical Theory

In this study, statistical tool analysis and some theoretical approaches were used to ascertain the dominant factors and to determine the success of licensing services for building permits in Denpasar. Initial statistical examination was conducted in order to find reliable data related to the research, such as validity, reliability, factor analysis and discriminant analysis. The determining factors, were analyzed using factor analysis. According to Santoso (2010), this factor is a process to establish the relationship (interrelationship) of certain independent variables between each other, as so to obtain fewer variables than before. By using discriminant analysis, there is a multivariate technique characterized by dependent and independent variables which aims to recognize the differences between groups. Discriminant analysis is typically regression analysis, which has dependent as well as independent variables in the probability model. The difference is in the dependent variable; regression analysis uses data in ratios, while discriminant analysis uses categorial data.

2.4. Literature Review

Some public opinion may against or even prevent project development relating to IMB services, since they found the process and procedure to be difficult; on the other hand, social support has also helped development and the service process to proceed smoothly. An effective observation

on public and private sectors' negotiation need to be done during the service process to obtain realistic assessments of the costs as well as the benefits, with the purpose of finding the potential critical success (Bing et al., 2005). Then, from factors component that had been found, these are factors that might influence the success of service, based from prior (see Table 1).

Table1 Success factors for improving services based on previous studies

No	Factors	KEP/25/M. PAN/2/2004	Horngren et al. (cited in Fransisca, 2015)	Moenir (cited in Mansur, 2008)	Wolkin (cited in Mansur, 2008)	Atmaja (cited in Ihsanuddin, 2014)
			Source			
1	Quality	√	√			
2	Time	√	√			
3	Cost and Efficiency	√	√			
4	Innovation		√			
5	Awareness of Officials/Leadership			√	√	
6	Regulations			√		
7	Organization			√		√
8	Officers' skills	√		√		√
9	Facilities and Infrastructure			√		
10	Education				√	
11	Planning				√	
12	Review				√	
13	Communication				√	
14	Awards and Recognition				√	
15	Service system	√				√
16	Convenience	√				

Notes; √: Factors indicated based on previous research

References from related research, such as the Regulation by the Ministry of Empowerment of State Apparatus, Republic of Indonesia No KEP/25/M.PAN/2/2004 about the general guidelines for the compilation of a community satisfaction index, government's service agency., (The Government of Republic of Indonesia, 2004), (Horngren et al., cited in Fransisca, 2015), (Moenir, cited in Mansur, 2008), (Wolkinin, cited in Mansur, 2008) and (Atmaja, cited in Ihsanuddin, 2014) have been reviewed to find the success factors for services. Based on the references in question, it was hoped to find factors related to IMB services in Denpasar City to be used to obtain the relevant dominant factors for this study.

2.5. Methods

Badan Pelayanan Perijinan Terpadu, or the Integrated Licensing Service Agency of Denpasar City, was taken as the object as well as the location of the study, which uses primary and secondary data provided by the agency. The target population consists of civil servants who work at the agency, as well as the community who use the IMB services. Based on data from the Licensing Service Agency, there are an average of 2,799 IMB applications annually. 121 employees work at the agency, so the population is 2,920. The research uses samples according to the Slovin formula, resulted in 97 people to be used as sample.

The research uses a statistical method to make a factor analysis of what influences good practice and successful IMB services for the community, essentially searching for the most

dominant factor. The factors concerned need to be tested based on the differences in perception between the community and employees who provide the services employing the discriminant analysis method.

The study uses a quantitative descriptive approach to establish the factors that influence IMB services in Denpasar City. Further analysis was made to obatin a clearer picture so that problems encountered could be solved. The purpose of descriptive research is to describe or explain a real situation. Data collection in descriptive research is in the form of notes, pictures, writing, tables and behaviors that can be observed and felt during the research (Figure 1).
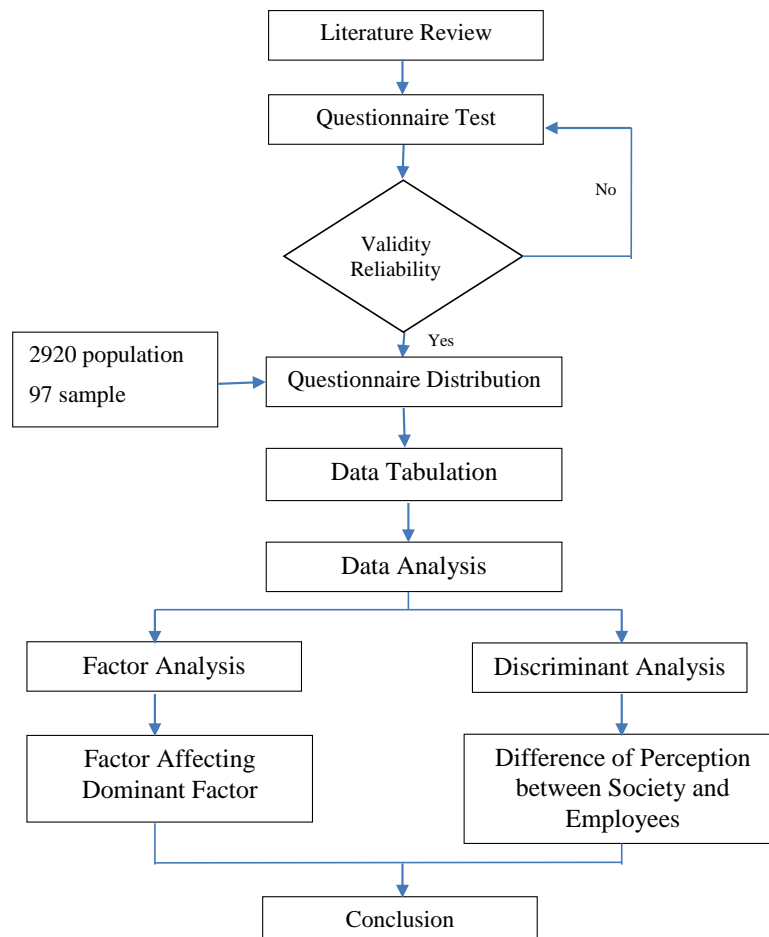

Figure 1 Research stages

Figure 1 shows the steps taken to obtain the success factors for improving IMB services in Denpasar City. These are described in more detail below.

a) Initial study: literature review and pre-survey to ascertain the variables which influence the success of IMB services by involving the employees who provide such services for IMB licenses, and the community who use the services of the agency.

b) Create a research instrument in the form of a questionnaire, on which validity and reliability tests need to be performed in order to provide convenience results.

c) Distribute questionnaires to the respondents identified in Stage (a). Data collection made to validate the initial compiled factors.

d) Perform data processing of the results of the questionnaires distributed with a statistical approach by including factor analysis to obtain the factors that influence IMB services. Subsequently, eigenvalues will be obtained from the variances of the factors.

e) Determine the dominant factor affecting IMB services in Denpasar.

f) Conduct discriminant analysis to find the differences in the perception of factors affecting IMB services in terms of comparable mindsets between the community and employees.

3. RESULTS AND DISCUSSION

3.1. Validity and Reliability Test of the Research Instruments

Based on the validity test using SPSS version 20 with the Pearson Product Moment technique, 24 out of 90 statements have a correlation coefficient value of < 0396 (r table value, 2-tailed with significance 0.05), so the questionnaire used for the subsequent research comprised 66 statements having a significant correlation with the valid declared total score. The test results from the SPSS 20 program showed that the Cronbach's alpha value of the observed variable was 0.971, greater than 0.60, meaning that the questionnaire used was reliable.

3.2. Factor Analysis

Factor analysis aimed to reduce/summarize/classify the factors identified. It was conducted in five phases, using SPSS 20. The results of the factor analysis were justified by indicators, included KMO, eigenvalue and loading factor. These indicators are explained as follows.

The Kaiser-Meyer-Olkin (KMO) test is a measure of how suitable the data are for factor analysis. The test measures the sampling adequacy of each variable to used in the model. The statistic is a measure of the proportion of variance amongst the variables that might be common variance. The lower the proportion, the more suited the data are for factor analysis.

The KMO value of the 66 variables studied was 0.79, with significance of 0.00, indicating a sufficient sample set. The MSA value of all the variables studied is above 0.5, which indicates that the variables can be predicted and further analyzed. The required loading factor value is greater than 0.60. From the results of testing with SPSS 20 there are 27 variables that have a loading factor value of < 0.60, so the sample set must be reanalyzed without using these variables.

3.3. First Retest

The next test was conducted using 39 variables; the KMO value obtained was 0.79 with significance of 0.00, indicating sufficiency of the sample set. The MSA value of all the variables studied is above 0.50, indicating that they can be predicted and further analyzed. From the results of testing with SPSS 20 there are three variables that have a loading factor value < 0.60, P41, P53 and P58, so the sample set must be re-analyzed without using these variables.

3.4. Second Retest

Re-testing is done by omitting the three variables whose loading values were < 0.6. The next test used only 36 variables. The KMO value obtained was 0.89 with significance of 0.00, indicating sufficiency of sample set. The MSA value of all the variables studied is above 0.50, indicating that they can be predicted and analyzed further. From the results of testing with SPSS 20 there are two variables that have a loading factor value of < 0.60, P26, and P3, so the sample set must be reanalyzed without using these variables.

3.5. Third Retest

Re-testing is done by eliminating the two variables whose loading values were < 0.6. The next test used only 34 variables. The KMO value obtained was 0.89 with significance 0.00, indicating sufficiency the of sample set. The MSA value of all the variables studied was above 0.50, indicating that they can be predicted and analyzed further. From the test results using SPSS 20 there is one variable that has a loading factor value < 0.60, namely P25, so the sample set must be re-analyzed without using this variable.

3.6. Fourth Retest

Re-testing is done by eliminating the variable loading value factor of < 0.6. The next test used only 33 variables. The KMO value obtained was 0.90 with significance of 0.00, indicating sufficiency of the sample deck. The MSA value of all the variables studied was above 0.50, indicating that they can be predicted and analyzed further. From the results of the testing with SPSS 20 there was one variable with a loading factor value of < 0.60, namely P21, so the sample set must be re-analyzed without using this variable.

3.7. Fifth Retest

Re-testing was done by eliminating the variable loading value factor of < 0.6. The next test used only 32 variables. The KMO value obtained was 0.90 with significance of 0.00, indicating sufficiency of sample deck. The MSA value of all the variables studied was above 0.50, indicating that the variables can be predicted and analyzed further. From the test results using SPSS 20, all the variables have a loading factor of > 0.60, so analysis can be continued.

3.8. Factor Formation

Factor formation was conducted after the calculation of the correlation of the variables had met the requirements for analysis. The method used was Principal Component Analysis. The two main steps in the formation of factors are the determination of the number of factors and the rotation between the factors that are formed.

3.9. Determination of the Number of Factors

The number of factors (Table 1) to be formed is determined by combining several criteria to obtain the number of factors that best match the research data. Factors having an eigenvalue of more than 1 will be kept and factors with values lower than 1 will not be included in the model. The tests with SPSS 20 obtained eigenvalues greater than 1 which were found in 1 factor, 2 factors, 3 factors, 4 factors, 5 factors, and 6 factors. Therefore, six factors were formed.

3.10. Factor Naming

Factor naming is done after the factors formed have members of the variables studied. It adapts the characteristics of the members from these factors. Based on the factor analysis, the factors influencing the success of building permit services in Denpasar are as follows: (1) transparency, (2) employees' ability, (3) convenience, (4) time, (5) employee performance and (6) employee responsibility (Table 2).

3.11. Factor Rotation

Once we know that the maximum number of factors that can be formed is six, we can then determine which variable will go into which factor.

3.12. Discriminant Analysis

Discriminant analysis has benefits when there are two or more groups based on variable characteristics across the sample. The differences between the groups can be ascertained by using discriminant analysis statistical methods. In this research, it is assumed that there are differences in perception between the employees who provide the IMB licensing services and those who use the services. Testing the differences between the groups was made using Wilks' Lambda. If the Wilks' Lambda number is close to 0, then there are likely to be differences between the group, but if the number is close to 1, there tends to be no difference.

The test results from the SPSS 20 Table of Tests of Equality of Group Means indicate that the Wilks' Lambda number approaches 1, hence there is no tendency towards differences between the groups. Based on this number, the six variables do not make a difference in decision making (Y). Therefore, there is no difference between the perceptions of the employees who provide IMB licensing services and the people who use the service with regard to the factors that affect the success of IMB services in Denpasar City (Table 2).

Table 2 Results of the factor analysis

No	Factor	Eigen	Total Variance (%)	Code	Variable	Loading
1	Transparency	15.09	47.142	P39	The existence of proof of payment (certainty) regarding the cost of licensing services that was paid	0.754
				P38	The fees for paid licensing services of are in accordance with the cost of licensing services that has been set in the provisions	0.728
				P37	Details for the cost of licensing services are openly delivered to the applicants	0.692
				P28	An electronic queue number is available in the licensing service	0.768
				P35	The information regarding the allotment of fees paid by the applicant is very clear and open	0.7
				P29	Receipt of documents as proof in the licensing service	0.736
				P36	The details of licensing service fees are very clear	0.763
				P27	Officers provides standardized treatment to every applicants in licensing services	0.722
2	Employee ability	2.174	6.795	P32	Officers are very friendly to every applicants in licensing service	0.748
				P31	Officers are communicative to every applicants in licensing service	0.679
				P22	Officers patiently serve and answer all applicants' questions.	0.695
				P33	The officers highly appreciates the presence of the applicants	0.665
				P18	The officers' ability to explain the issues consulted by the applicant is very good	0.658
				P20	Officers are able to quickly understand the intentions of the applicant's questions / complaints	0.624
				P66	PPM and IMB Package Permit Innovation speed up the licensing process	0.662
				P7	Requirements required to apply the permit are very clear	0.639
3	Convenience	1.552	4.849	P46	The environment in the office of licensing service is very safe	0.619
				P42	Support facilities related to convenience in licensing services are available	0.652
				P47	The availability of CCTV in maintaining transparent services	0.654
				P43	Availability of public space for breastfeeding related to the comfort of service.	0.674
				P40	The licensing service schedule is clearly informed	0.674
				P49	The use of facilities and infrastructure of licensing services is very safe	0.682
				P48	The licensing service is free from corrupt practices, collusion and nepotism	0.652
4	Time	1.287	4.002	P23	The timing of completion regarding the licensing service is openly delivered by the officers.	0.621
				P24	Standard operational of process time in licensing service is very good	0.631
				P45	Facilities and infrastructure used related to service's convenience are up-to-date	0.756
				P65	Always aim for improvements to comply with applicable regulations	0.713
				P6	The licensing requirements are openly informed	0.653
5	Employee performance	1.12	3.501	P57	A compulsion to always work hard for every employee in carrying out and completing the work to improve the quality of service.	0.681
				P59	Cooperation between BPPTSP employees and PM worker in the work very well	0.672
6	Employee responsibility	1.007	3.146	P13	Every officer has a clear responsibility	0.689
				P1	The current licensing procedures are openly delivered	0.676

The Table of Tests of Equality of Group Means indicates that Wilks' Lambda number approaches 1, hence there is no tendency towards differences between the groups. Based on this number, the six variables do not make any difference in decision making (Y), which means there is no difference between the perceptions of the employees who provide IMB licensing services and those who use IMB services with regard to the factors that affect the success of IMB services in Denpasar. The results obtained from testing the six factors indicate that transparency is the dominant factor. This result does not fully reflect the community's perception, who often complain about the licensing service's effectiveness and efficiency, which should be reflected by making the second, fourth or fifth factor significant. This result might give an idea about the real issues that the Denpasar government is actually facing. The study conducted in Stockholm shows that municipalities need to overcome the problem of optimizing their service time, while in Denpasar it turns out that transparency is the problem. The difference may stem from their socio-cultural aspects, especially in developing countries where the transparency of officials is constantly doubted by the community.

4.   CONCLUSION

Based on the factor analysis of the results of the research, it can be concluded that: (1) The factors that influence the success of building permit services (IMB) in Denpasar are: (a) transparency; (b) employees' ability; (c) convenience; (d) time; (e) employee performance; and (f) employee responsibility. There are no differences in the perceptions of the community and the employees of the factors that influence IMB licensing services in Denpasar; (2) The most dominant factor influencing the success of IMB license services in Denpasar is transparency, which has the highest eigenvalue of 15,085 and is able to explain variance of 47.142%. There should therefore be an effort to improve the building permit (IMB process to make it less complicated and expensive, and especially more transparent. It is known that the service of intermediaries, which is illegal, was a common practice in Denpasar at the time of survey, so mutual cooperation between the intermediaries and employees is required in order for the practice to be conducted, even though it is illegal. This kind of practice will result in more lag time in the actual licensing process, and extra fees (intermediary fees) for the permit, while those who apply for a permit without the services of an intermediary will need to wait longer for their permit to be issued.

5.   ACKNOWLEDGEMENT

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