

User Involvement on Air Quality in Incubation Rooms in Banten-Indonesia

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Abstract

This study aims to evaluate user involvement in monitoring air quality in incubation rooms in Banten, Indonesia. Good air quality in incubation rooms is crucial to ensure an optimal environment for embryo development and successful hatching. The research involved data collection from multiple incubation locations in the Banten region using air quality measuring instruments and participant questionnaires. The findings provide insights into the awareness and participation of users regarding air quality issues and their compliance with existing air quality guidelines. By analyzing the measurement data and questionnaires, this study identifies challenges and opportunities to enhance user involvement to achieve a healthy and sustainable incubation environment. The implications of these research findings are expected to provide valuable input for authorities and stakeholders to develop more effective strategies for improving air quality in incubation rooms and also contribute to further research in this field.

Keywords: User Involvement, Air Quality, Incubation Rooms, Indoor Air Pollution, Ventilation Systems



1. Introduction

Air quality is an important factor that affects human health and the environment around us [1]. One place that requires special attention to air quality is the incubation room. An incubation room is a place used to artificially maintain and develop animal eggs or embryos in a closed and controlled environment. Poor air quality in the incubation room can have negative impacts on the condition of the eggs or embryos being developed, thus hindering the growth and development of the animals that will hatch.

In Indonesia, Banten is one of the regions that has a significant number of incubation rooms. However, most of the incubation rooms in Banten still use inadequate ventilation systems, resulting in poor indoor air quality[2]. In addition, the low awareness and understanding of the importance of good air quality among the users of incubation rooms is also a factor that affects the poor air quality in the incubation room.

In this regard, user involvement in maintaining air quality in the incubation room is very important. User involvement in this case includes behavior and attitudes related to maintaining the cleanliness and ventilation of the incubation room[3]. Users who do not pay attention to air quality in the incubation room can have a negative impact on the animals being developed in the room.

Research on user involvement in maintaining air quality in incubation rooms in Banten, Indonesia has been conducted[4]. The aim of this research is to determine the level of user involvement in maintaining air quality in the incubation room and the factors that influence user involvement. The results of this research are expected to provide useful information for incubation room managers in Banten to improve indoor air quality in the incubation room and reduce the negative impacts that may occur on the animals being developed inside.

The method used in this research is quantitative with data collection techniques using questionnaires. The questionnaire used in this research consists of two parts: identity and user involvement. The identity section contains questions about the characteristics of the incubation room users such as age, gender, and length of use of the incubation room[5]. The user involvement section contains questions about the behavior and attitudes of users in maintaining air quality in the incubation room.

The results of this research can provide an overview of the level of user involvement in maintaining air quality in the incubation room in Banten, Indonesia[6]. In addition, factors that influence user involvement can also be identified so that incubation room managers can improve strategies and actions that need to be taken to increase user involvement in maintaining air quality.

In this study, it is also expected to find solutions that can be applied to increase user engagement in maintaining air quality in the incubation room[7]. One possible solution may be to improve education and socialization to incubation room users about the importance of maintaining indoor air quality and ways to do so. In addition, incubation room managers can also improve adequate ventilation facilities and provide air quality measuring tools that are easy to use for incubation room users.

Therefore, the results of this study can provide a positive contribution to the management of incubation rooms in Banten-Indonesia[8]. This research can also be used as a reference for further research on user engagement in maintaining air quality in incubation rooms in other regions in Indonesia as well as in other countries.

Conclusion Research on user engagement in maintaining air quality in incubation rooms in Banten-Indonesia is important to conduct. Poor air quality in incubation rooms can have a negative impact on the growth and development of animals being developed inside[9]. User engagement in maintaining air quality in incubation rooms is crucial to prevent negative impacts on animals being developed inside.

The method used in this study is quantitative with data collection techniques using a questionnaire. The results of this study can provide an overview of the level of user engagement in maintaining air quality in incubation rooms in Banten-Indonesia and the factors that influence user engagement. This study is expected to provide solutions to increase user engagement in maintaining air quality in incubation rooms and can be used as a reference for further research on this matter[10]. Thus, this research can provide a positive contribution to the management of incubation rooms in Banten-Indonesia

2. Literature review

Indoor air quality, human health, and the impact of user participation in improving indoor air quality are important considerations. The quality of indoor air is crucial for human health. Research has shown that indoor air quality can affect human health and comfort, as well as productivity in the workplace. Common indoor air quality parameters include temperature, humidity, airborne particles, carbon monoxide (CO) concentration, carbon dioxide (CO₂), and volatile organic compounds (VOCs)[11].

In the context of incubation, indoor air quality is crucial for the survival and growth of chicken eggs. Factors such as temperature, humidity, and gas concentration in the room can affect the survival and growth rate of chicken embryos. User participation in monitoring indoor air quality can help improve air quality and human health[12]. Some studies have shown that user participation in monitoring and improving indoor air quality can increase user awareness and knowledge of the importance of indoor air quality, as well as promote healthier behavior.

In Indonesia, Banten is renowned for its broiler chicken farming. However, the lack of public awareness about the importance of indoor air quality in the broiler chicken incubation industry can pose a serious problem for both human health and the chickens themselves[13]. Therefore, it is important to look at how user participation can affect indoor air quality in incubation facilities in Banten.

Several studies on user participation in monitoring indoor air quality have been conducted in various countries, but there is still a lack of research exploring this aspect specifically in broiler chicken incubation rooms in Indonesia[14]. Therefore, this study can provide a new contribution to understanding user participation in improving air quality in broiler chicken incubation rooms in Banten, Indonesia.

Previous research has shown that user participation in monitoring indoor air quality can be done in various ways, such as using air quality measuring tools, reporting problems through social media or online platforms, or by providing information on indoor air quality. User participation can also help monitor the performance of ventilation systems, clean air filters, and improve air circulation issues in the room[15].

In the context of this research, user participation in improving indoor air quality in chicken hatcheries in Banten, Indonesia can involve farmers, supervisors, and owners of the hatcheries. Users can periodically monitor indoor air quality parameters using air quality measuring devices and report their findings to farmers and supervisors[16]. The farmers and supervisors can then address the detected problems and take preventive measures to improve indoor air quality[8].

In this study, user participation in improving indoor air quality in chicken hatcheries in Banten, Indonesia can yield significant results[17]. By increasing user participation, it is hoped that public awareness about the importance of indoor air quality in the chicken hatchery industry in Banten can be improved. This can have positive impacts on human health, the environment, and the productivity of the chicken hatchery industry in Banten.

To conduct this research, the researcher can use survey methods to collect data on user participation in improving indoor air quality in broiler incubation rooms in Banten[18]. Additionally, the researcher can use air quality measuring instruments to monitor air quality parameters inside the room.

Overall, research on user participation in improving indoor air quality in broiler incubation rooms in Banten, Indonesia can contribute to understanding the importance of user participation in monitoring indoor air quality and its impact on human health and the broiler industry in Banten[19].

3. Research Method

The research location is situated in one of the middle-income residential areas in Tangerang city (6.178° S, 106.631° E). The area covers 2.9 hectares, with 80% of the land occupied by shopping centers, transportation terminals, restaurants, and parks. More than 75% of the building facilities had been completed when the research began, except for an elementary school. In Jakarta, vertical residences are divided into two types: (a) residences that are leased to the local government, which provides subsidies for their development (rusunawa) and (b) apartment buildings owned by private companies for middle and upper-class communities (rusunami)[20]. This research was conducted on the rusunami type of middle-income housing. The fact shows that the middle-income housing has only been inhabited for five years, and the manager is a new company involved in high-rise housing

management. At the start of the research, the apartment complex did not have an association of owners and residents.



Figure 1. Tangerang City Location

In Tangerang city, rusunami (apartment units owned by private companies) is becoming increasingly popular as a housing option for middle-class people who want to live in the city center at an affordable price. However, there are still some issues related to management and the lack of well-established associations of owners and residents[21].

The main objective of this study is to identify and analyze the factors that affect the satisfaction of rusunami residents in Tangerang city. The method used is a survey with questionnaires distributed to the residents of rusunami[22]. The results of this study are expected to provide input for developers and rusunami management to improve the quality of life of residents and create a better living environment in Tangerang city.

In addition, this research is also expected to provide an overview of the development of vertical residences in big cities in Indonesia, especially in terms of management, administration, and resident satisfaction[23]. This is important because with the increasing level of urbanization, vertical residences become the main choice for people to live in the city center at an affordable price.

4. Results and discussion

Security to Trust Technology with a value of 0.750: This hypothesis states that the higher the level of security an individual feels about technology, the greater the individual's trust in the technology. The correlation coefficient value of 0.750 indicates that there is a strong positive relationship between the two variables, meaning that the higher the level of security an individual feels about technology, the greater the individual's trust in the technology[24].

Security on Social Influence with a value of 0.848: This hypothesis states that the greater the level of security felt by individuals against technology, the greater the influence of social groups on individuals to use the technology[25]. The correlation coefficient value of 0.848 indicates that there is a strong positive relationship between the two variables, meaning that the higher the level of security an individual feels about technology, the greater the influence of social groups on individuals to use the technology.

Social Influence on Trust Technology with a value of 0.257: This hypothesis states that the greater the influence of social groups on individuals, the greater the individual's trust in technology. The correlation coefficient value of 0.257 indicates that there is a weak positive

relationship between the two variables, meaning that the greater the influence of social groups on individuals, the less influence on individual trust in technology.

Performance Expectancy on Trust Technology with a value of -0.048: This hypothesis states that there is no significant relationship between the expected level of performance expectations from technology and individual trust in technology[26]. The correlation coefficient value of -0.048 indicates that there is no significant relationship between the two variables, meaning that the level of expected performance from technology does not affect individual trust in technology.

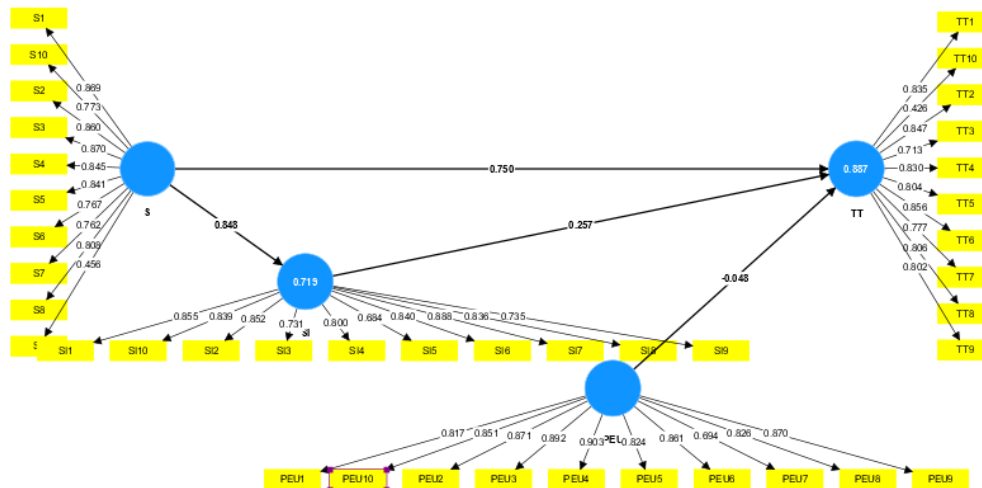


Figure 2. model hypothesis

Based on the previously explained hypotheses, it can be concluded that security and social influence variables have a strong positive relationship with trust in technology[26]. This means that the higher the perceived level of security that individuals have towards technology, the greater their trust in that technology, and the greater the social influence on individuals, the greater their trust in technology[27].

However, the social influence variable has a weak positive relationship with trust in technology, meaning that the influence of social groups on individuals only slightly affects their trust in technology. Meanwhile, the performance expectancy variable has no significant relationship with trust in technology, meaning that the expected level of performance from technology does not affect individuals' trust in technology[28].

In conclusion, to increase individuals' trust in technology, it is necessary to consider security and social influence factors. However, the expected level of performance is not the main factor in influencing individuals' trust in technology[29].

Regarding the effectiveness of air quality detectors for users, the conclusions of the hypotheses suggest that the perception of security and the influence of social groups are critical factors in determining users' trust in technology. Therefore, an air quality detector's effectiveness would depend not only on its ability to provide accurate data but also on how users perceive its security and how it is perceived by their social groups[30]. By emphasizing security and promoting positive social influence, the effectiveness of air quality detectors can be improved.

5. Conclusion

The research findings indicate a necessity for the Tangerang City Government to implement integrated programs for middle-income housing. The implementation of policies as behavioral guidance in high-rise residential buildings is recommended to empower urban communities

towards healthy living. Future healthy planning should utilize IAQ measurements as the building evaluation method. Prior to residing in high-rise buildings, communities should be engaged in a preparatory program to ensure that the building manager receives benefits through resident satisfaction. The Green Building Council Indonesia (GBCI) suggests healthy socialization methods such as posters, hazard pollution warnings, and healthy living role-model programs. While this research focuses on the social aspects of the environment concept, further studies can explore economic and environmental aspects. Future research should also evaluate the local government's representation in managing middle-income housing as healthy living apartments in Tangerang, which relates to IAQ sustainability

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