A Theoretical Assessment of the Impacts of Poor Maintenance of Public Infrastructure

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Abstract. The study examines previous literature on the impacts of poor maintenance of public infrastructure in the Kingdom of Eswatini. In the past two decades the kingdom of Eswatini has experienced a huge growth of public building development. Construction of new facilities alone is not enough but the most critical activities in public buildings is to provide adequate and proper maintenance for the structures to accomplish their intended purpose. It is worth noting that building maintenance prevents accumulated decay and deterioration, which is contributing to health concerns and reducing the profitability of occupants. Therefore, absence or poor performance of facility management in an institution is accompanied by negative impacts. Moreover, to correct these negative consequences a massive financial cost and worst severe financial loss would be generated to those institutions concerned. The study is conducted with reference to existing theoretical literature, published and unpublished research. The study is mainly a literature review on the impacts of poor maintenance of public infrastructure. One of the primary findings regarding the impact of poor building maintenance are: that it reduces the value of existing public buildings and it also increases budgets for untreated maintenance faults, increased costs for emergency repairs, insufficient provision and delivery of public services. The study explores the effects of poor maintenance of public infrastructure and presents a robust background on the theories of poor infrastructure maintenance. This study will enable the public facility management and the government at large to know the importance of maintaining a building.

Key words: Impacts, Maintenance, Public Infrastructure

1. INTRODUCTION

Abdullah et al. (2015:363) observed that in the past few years there has been an increase in building construction in most developing countries as part of development. Increase in the requirement of public services triggered the demand for the construction of public buildings in order for the public institution to render the various services needed by the public such as health, education, welfare and many others. Growth in infrastructure development will lead to an increasing demand for maintenance works in order to enable the buildings to perform their intended purpose. Hence, such development created demand for building maintenance (BM) and to become a major activity in the construction industry. Moreover, Olufunke (2011:290) emphasized that, considering construction of new facilities alone is not enough but the most critical activities in PB is to provide adequate and proper maintenance for the structures to accomplish their intended purpose.
2. LITERATURE REVIEW

2.1 Early decaying of public building
According to Olufunke (2011:290) public buildings became valueless due to lack of strong maintenance culture in the country. Therefore, public buildings (PB) which were meant to benefit a large number of people are decaying prematurely, rotting without any good use as the public is not willing to make such facilities sustainable. Furthermore, PB collapses before their expected life span due to lack of proper maintenance. Tijani et al., (2016:27) emphasis that the attitudes within people, that nobody owns government properties brings a negative impact on the buildings.

2.2 Non-operational use of buildings
Wuni et al. (2018:11) argued that most PB are found abandoned due to the fact that most public institutions are unable to undertake major rehabilitation. Furthermore, it is noted that financing renovations or major rehabilitation are a great threat to the upcoming financial sustainability of the institutions and the involved buildings are abandoned. Kamarazaly (2014:111) emphasized that most government institutions are not profit making and they are rendering many services to the public. Therefore, PB renovations budget will have to compete with many services to be offered by the government which may be valued high, and result in facilities being non-operational.

2.3 Reduce the economy of the country
Most public institutions are facing negative financial impacts due to poor facility management (Kamarazaly et al., 2013:140). Hamid et al. (2010:80) argued that poor PB management creates pressure on the future government budget because excessive budget allocation will be needed to correct the wrongs of the facility management

2.4 Insufficient provision and delivery of public services
According to Hopland and Kvamsdal (2019:141) insufficient maintenance level and deprived facility management have a negative impact in delivering quality services to the public. Tijani et al. (2016:24) argued that equipment on PB are poorly maintained which resulted in regular failure, utilization rate becoming low and production schedule being lowered.

2.5 Low production due to hindered productivity
The situation of PB not maintained is not different with the education department. In most rural areas it is common to find dilapidated public school buildings being occupied by pupils. Lessons are being disturbed by the collapsing classes with leaking roofs, without ceiling which makes the environment unsuitable for learning (Olufunke, 2011:292). Breakdown of machines and industrial equipment as a result of poor maintenance had obstructed production in many industries. Negative effects of production in terms of capacity decrease, poor quality services, growth in production cost and public dissatisfaction among others are the results of poor production resources maintenance (Tijani et al., 2016:28).
2.6 Public building loses its physical appearance

The physical appearance of PB is highly affected by the decision and action taken in the history of the building regarding its maintenance (Ofori et al., 2015:185). Ackah, (2016) argued that the public pride or indifference is normally seen by the appearance, quality and physical condition of the buildings. These judge the prosperity level in the area, social values and conduct. Improper maintained PB in certain areas and streets degrade the beauty of the surroundings.

2.7 Reduces the convenience and safety use of building

According to Oluwatoyin et al. (2017:1) buildings are designed to provide safe and conducive accommodation for humans to undertake their various activities. Therefore, it is necessary to take measures to deteriorate the building component to ensure that buildings preserve the initial designed functions which are to provide safety and convenience to the building users. Hamid et al., (2010:83) argued that deferred maintenance of PB increases the safety hazard, reduces productivity of employees and affects business operations.

2.8 Increases cost for emergency repairs

Richards (2018) argued that the cost for planned repairs are low compared to emergency maintenance and the emergency maintenance usually occurred during peak production hours. Therefore, reactive repairs need to be performed as soon as possible for production to resume quickly. This kind of maintenance is usually outsourced with escalated costs instead of being done by in-house maintenance team.

2.9 Increased budgets for untreated maintenance fault

Ihsan and Alshibani (2018:303) argued that unattended small maintenance problems accumulate to become worse. Minor building faults like leaking roofing, if not treated would cause damages on the ceiling, stain wall, affect light fitting, etc. Hopland and Kvamsdal (2019:141) agreed that deferred maintenance on public buildings creates expenditures backlog that would be covered in future. Therefore, to keep government buildings on fully operational condition more resources will be required.

2.10 Reduces the value of the building

Deferred maintenance results in the building to physical depreciation, losing its initial value due to the postponement of maintenance. Normally, physical depreciation is cured by applying the required maintenance and improvements. Such building depreciation is called curable obsolescence or curable physical depreciation (Fakhrudin et al., 2011:173).

3. RESEARCH METHODOLOGY

The research was carried out with reference to the published and unpublished theoretical literature from online journals, Conferences, Proceedings dissertations. Again, articles from Google scholar, Emerald, Science direct which were all related to the impacts of poor maintenance of public infrastructure were also used. Moreover, the study is mainly a theoretical literature review. The current methodology falls
within the qualitative research methodology. Qualitative approaches to data collection, analysis, interpretation, and report writing differ from the traditional, quantitative approaches. Qualitative data usually not numerical therefore it cannot be statistically analyzed. (Creswell, 2014:23 and Muijs, 2004:1)

4. LESSON LEARNT

This research work assisted to reveal the impacts of poor maintenance of public infrastructure. Poor maintenance results in physical deterioration of the building, losing its initial value due to maintenance postponement. Usually, physical depreciation is cured by applying the required maintenance and improvements. Moreover, poor maintenance increases budgets for untreated maintenance faults. Unattended small maintenance problems, they accumulate to become worse. Furthermore, poor maintenance on PB creates expenditures backlog that would be covered in future. Therefore, to keep government buildings on fully operational condition more resources will be required. The cost for planned repairs are low compared to emergency maintenance and the emergency maintenance usually occurred during peak production hours. Hence, reactive repairs need to be performed as soon as possible for production to resume quickly. This kind of maintenance is usually outsourced with escalated cost instead of being done by in-house maintenance team.

5. CONCLUSION

The literature reviewed revealed that construction of new facilities alone is not enough but the most critical activities in public buildings is to provide adequate and proper maintenance for the structures to accomplish their intended purpose. Furthermore, the literature disclosed that absence or poor performance of the maintenance management in an institution is accompanied by negative impacts regarding their buildings. Moreover, to correct these negative consequences a massive financial cost and worst severe financial loss would be generated to those institutions concerned.

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