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EMPOWERING INNOVATION THROUGH VISUALIZATION



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# NADOOFA STATION

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## ABSTRACT

Covid-19 has not been getting better. The amount of covid-19 case increases each day not only in Indonesia but also globally. The increase of the case causes the health protocol is strictly being implemented in public space. Yogyakarta which is known as a cultural and tourism city becomes one of region that needs to do a preventive effort to overcome covid-19. The obligation to wash the hands as often as possible cause a buildup *grey water* (waste of the handsoap) and the decrease of clean water availability. The condition of the washing hands facilities are unpretentious and inefficient. The objective of this innovation design is to design an efficient and green solution of washing hands facility that includes a recycle system of the grey water and responses to new normal. The design method uses literature review that relates to covid-19, waste liquid, and the sink/wash basin system. Besides research that makes the closure of issue from the aspect of behavioural, ergonomic, ecological, economical, and healthy closures. The Innovation and novelty of our design is a sink/wash basin design that uses recycle and re-use water with a complete of grey water's recycle system.

**Keywords:** Covid-19, water recycled, water reused, sink/wash basin

## 1. INTRODUCTION

Covid-19 becomes matter of serious concern since the amount of the case increases each day. Total of the case on 28<sup>th</sup> of September, 2020 reaches 33,034,598 cases with 996,343 of death (CFR 30%) in 215 infected countries and 179 local transmission countries (Kemenkes RI, 2020). Yogyakarta which is known as cultural and tourism city becomes the region than needs to do a preventive effort to overcome covid-19. Departmen of Tourism of Yogyakarta mentioned that the amount of tourist increases each week reaches to 40 thousands since July-Agust 2020 (Pradito Rida P, 2020). The increase of the case causes the health protocol is strictly being implemented in public spaces. (KemenLHK, 2015) The needs of clean water for washing hands is about 10liter/minutes @80 psi. If the user and how long they need to wash their hands are being multiplied in a day in public space, the obligation to wash the hands possible cause a buildup *grey water* ( waste of the handsoap) and the decrease of clean water availability. Besides that in some regions, they have drought issues where clean water becomes rare. The condition of the washing hands facilities these days are unpretentious and inefficient. The first sink type is the sinks use plastic sinks and tanks and the waste of the handsoap are being flowed to the ground by the tubes and need to fill the water continually. The other type is the sink uses stainless material, the sink uses strirrup application and need to be connected to the faucet and that causes extravagance. The objective of Nadoofa Station is to design an efficient and green solution of washing hands facility that includes a recycle system of the grey water and responses to new normal.

## 2. MATERIAL AND METHOD

The design method and material use literature review. A Literature review is a comprehensive study and interpretation of literature that addresses a specific topic (Aveyard, 2010). The topic raised that relates to covid-19, waste liquid, recycle grey water and the sink/wash basin system. Besides research that makes the approach of issue from the aspect of behavioural, ergonomic, ecological, economical, and healthy approaches. The name of Nadoofa Station takes the concept of Islamic wisdom words “An- Nadhafatu Minal Iman “which means cleanness is part of iman. Nadoofa is taken from the word “Nadhafatu” which means cleanness.

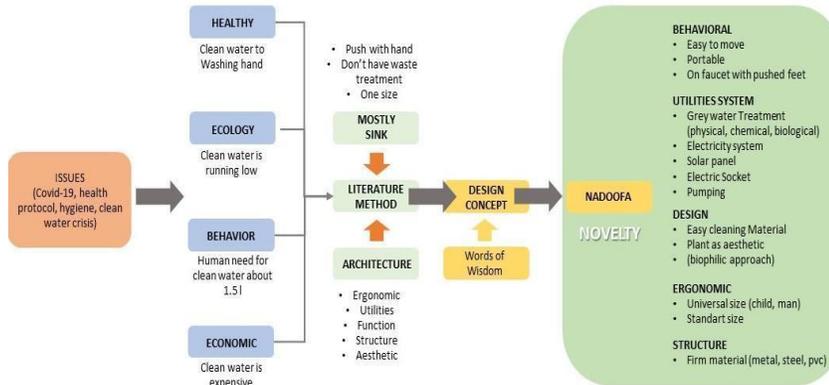


Figure 1. Method Approach Design

### 2.1. Findings

Nadoofa is a portable sink that uses an ergonomical design for the user and good structures for the recycle system. The design has answered the problems and needs of the availability of water for human needs, when the result of recycled system of Nadoofa can be reused for gardening water or for washing hands. Nadoofa is the innovation of an efficient waste recycle that uses materials that are easy to find and easy to clean to prevent COVID-19.

### 2.2. Arguments

First, the idea uses a literature method so it is needed as an experimental method to try whether recycled water could be really used or not. Yet, based on similar research, recycled water could be used. Second, to implement the detail of implementation, it is needed to do a development that collaborated with an electrical expert.

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