

**ERGONOMIC EVALUATION AND DEVELOPMENT OF
TRANSPORT TOOL FOR FISH PORTERS**

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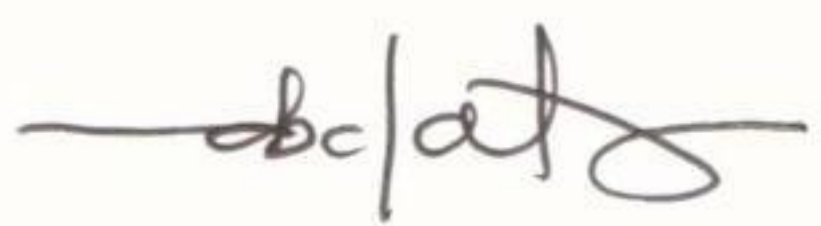
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ABSTRACT

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The main objective of this study is to design and develop a transport tool that will help fish porters. Specially, it aimed to: present a comprehensive and critical review of the current problems of the fish porter's activities; identify the musculoskeletal disorder symptoms experienced by the fish porters; determine the relationship between the number of working hours and pain experienced by the workers; develop an ergonomically designed transport tool for fish porters; and test and evaluate the ergonomically designed tool for fish porters.

In this study, the researchers used the applied research methods. The researchers focused on the fish porters in Rosario Municipal Fish Port as the participants. To determine the number of participants of the study, slovin's formula and the stratified random sampling were used. Six Sigma – Define, Measure, Analyze, Design, Verify (DMADV) methodology was used also to analyze the gathered data and develop the ergonomically design transport tool.

The results revealed that lack of proper transport tool is one of the major problems in the fish port area followed by poor condition of facility in terms of maintenance and poor space utilization. Most of the respondents experienced body pain while doing their work that can result to work-related musculoskeletal disorder and some severe injury. The problem that mostly affects the process is the improper tool/poor ergonomic design

that they used. Through the use of quality function deployment the relationship between customer requirements and technical requirement was determined. The results in the quality function deployment served as a basis for the design of the transport tool.

The researchers run simulations and testing along with the selected participants to evaluate the ergonomically designed transport tool. According to the bivariate analysis the neck pain experienced by the fish porters has no relationship to the number of working hours; the shoulder and back pain experienced by the fish porters has a strong positive relationship to the number of working hours. The arms and hands pain experienced by the fish porters has a moderate positive relationship to the number of working hours. The pain experienced in their legs has a weak positive relationship to the number of working hours. To develop the ergonomically designed transport tool for fish porters the researchers used Six Sigma – DMADV methodology and some engineering management tools to determine the problems and customers wants and needs. For testing and evaluation of the transport tool, the researchers provided a questionnaire. The selected participants used the transport tool and criticized it in terms of functionality, aesthetics, durability, safety, operability and usefulness.

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