DYNAMIC MODEL OF CONTROLLING OCCUPATIONAL DISEASES AT AN INSTANT NOODLE COMPANY IN MAKASSAR

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ABSTRACT

Background: Decent work was closely related to health problems in every workforce. To maintain productivity in the workplace, one of the efforts that must be done was to control occupational diseases. Several factors were originating from the production process, which was known to cause occupational diseases. This study aimed to determine a dynamic model of managing the incidence of occupational diseases in an instant noodle company in Makassar

Subjects and Method: This was a research and development (R&D) method through a dynamic systems approach. It the located at an instant noodle company in Makassar, South Sulawesi. A sample of 546 were selected for this study. Then use Interpretative Structural Modeling (ISM) to get the right control scenario to reduce the incidence of occupational diseases. quantitative data were obtained from a total sampling of all employees in the production department, qualitative data from interviews with company management and policymakers

Result: Validation tests on the three sub-models and the overall model in this study using AME and AVE respectively are; sub-model of Labor Demand Based on Market Demand ($p=0.004$ & $p=0.027$); Sub-model of MSDS ($p=0.0048$ & $p=0.012$); Sub-model of the incidence of upper respiratory tract infection ($p=0.009$ & $p=0.0068$); work-related disease control model ($p=0.006$ & $p=0.0162$). The critical elements of an occupational disease control model at an instant noodle company in Makassar based on interpretive structural modeling are work posture, lifting load, dust, ventilation, and working time. There are four control scenarios carried out using a dynamic system approach, namely: Do Nothing Scenario, Musculoskeletal Disorders Scenario (work posture, lifting load and length of work), upper respiratory tract infection Scenario (dust, ventilation, and duration of work), and combined scenarios (MSDS and upper respiratory tract infections).

Conclusion: The most effective scenario for reducing the incidence of occupational diseases in instant noodle companies in Makassar is the combined scenario, with an average of 46.71% per year. The dynamic model of controlling occupational diseases is the first.

Keywords: Control Model of Occupational Diseases, MSDS, Upper Respiratory Tract Infection, Dynamic Model, Interpretive Structural Modeling.

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