Determination of Criteria Priority for Product Design Industry Oriented to Quality, Cost and Environment through Green QFD Approach

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Abstract. The increased green consumer in global industry has formed its own economic niche that has not fully utilized optimally by business actors. The existence of this market niche becomes a challenge for the industry to win the global market through quality design, competitive prices and products that have a good impact on the environment. This research will explanation product criteria as a basis for consideration for the company in developing or creating new products that meet the needs of this specific consumer in the furniture industry. It needs a product design model that can integrate quality, cost and environmental criteria. The method of concept designing product that can integrate the needs of the green consumer in fulfilling aspects of quality, cost and environment is by Green QFD method. Criteria product quality is determined by looking for Quality index of consumer needs through technical requirements with the House of Quality matrix. The criteria of cost will be analyzed by looking for internal and external cost through the House of Cost matrix. While the environmental criteria will determined of the environment index by Eco-Indicator method through Green House matrix. AHP method is used to determine alternative of the best design product choices against the criteria that have been produced by the Green QFD method. The integration concept of method the Green QFD and AHP provides a holistic outcome of how the design of industrial products is structured and analyzed through the criteria of quality, cost and environmental, where cost factors are the first criteria that need to get the attention of the company design team in comparison with the quality and environmental criteria.

Keywords. Industrial product design, Green QFD