



# 7<sup>th</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS”

## Proposal of Calibration of Questionnaire for Evaluation of Happiness

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### Abstract

This paper presents a proposal for the calibration of a questionnaire for the evaluation of happiness. The calibration aims at the practicality of the instrument with similar valuation to that obtained by the application of the questionnaire model of the Bhutan Studies Center (BSC). Initially, the BSC model questionnaire was adapted, excluding questions linked to specific cultural aspects of Bhutan, and the open-ended questions were transformed into closed-ended multiple-choice questions. The BSC model questionnaire has 209 questions, which integrate 33 indicators divided into 9 domains. This extensive questionnaire requires considerable time, resulting in little practicality and high application costs. For this reason, from the extensive questionnaire, a reduced questionnaire was formulated with care to maintain the 9 domains (psychological, time use, health, education, cultural diversity, good governance, community vitality, ecological diversity and standard of living). Questions were taken from the extensive questionnaire so that the score resulted in an amount equal to or greater than 70% of the total domain. The reduced questionnaire had 79 questions and 21 indicators. The two questionnaires were then applied (extended and reduced) for two study groups: a group of 6 postgraduate students and the other 6 family heads of a low-income community. In this experiment, the time of application and the level of sufficiency reached in each domain was evaluated. The average application time went from 3 hours (extensive questionnaire) to 30 minutes (reduced questionnaire). However, when comparing the final score scores by domain (sufficiency level) of the extensive and reduced questionnaires, differences (for each study group) were observed in the sufficiency level in some domains. To achieve the same result by using the reduced questionnaire, calibration criteria were developed. The criterion for intervention in the reduced questionnaire was to add questions until a similar value was obtained for the level of sufficiency, and the difference of one level of proficiency per domain for a single interviewee was tolerated. As a result of the calibration, the student group questionnaire had 111 questions and 26 indicators. In this case, there was intervention in the areas of cultural diversity, well-being and ecological diversity. In the case of the interviewees from the low-income community, the questionnaire, after calibration, had 107 questions and 25 indicators, being calibrated the areas of the standard of living, education, community vitality and ecological diversity. The results show that depending on the target population, the domains to be calibrated may vary. The calibrated reduced questionnaire, besides reducing the application time by 6 times, about the extensive questionnaire, results in a similar assessment of happiness. A calibrated questionnaire, the result of this research, can contribute to public policies, where they influence people's way of life.

*Keywords: Happiness. Calibration of the questionnaire. Gross Domestic Happiness.*