

Pengembangan Model Pengukuran Continuous Innovation Capability Pada Industri Manufaktur Indonesia = Development of Continuous Innovation Capability Measurement Model in Indonesia's Manufacturing Industry

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Abstrak

Lingkungan bisnis dan industri yang dinamis dan berubah sangat cepat menyebabkan Continuous Innovation Capability (CIC), yang adalah ability to continuously innovate sangat dibutuhkan oleh industri manufaktur agar dapat bertahan dan memiliki daya saing tinggi. Cara atau metode untuk mengukur dan memonitor CIC menjadi sangat penting dan strategis bagi suatu perusahaan agar dapat memastikan bahwa aktivitas inovasi dikerjakan secara berkelanjutan. Penelitian ini bermaksud untuk mengembangkan suatu model pengukuran Continuous innovation capabilities (CIC) yang lebih komprehensif dan holistik pada industri manufaktur di Indonesia.

Proses penelitian ini terdiri dari 3 tahap, yakni: (1) identifikasi dan seleksi Continuous Innovation Capability Enablers (CICEs), (2) perancangan model pengukuran CIC, dan (3) validasi model pengukuran. Identifikasi initial CICEs menggunakan pendekatan studi literatur dan focus group discussion. Sedangkan proses seleksi CICEs menggunakan Fuzzy Delphi Method (FDM). Pada tahapan perancangan model, metode Total Interpretive Structural Modelling (TISM) digunakan untuk menggambarkan contextual relationship antar CICEs, metode matrix of cross impact multiplications applied to classification (MICMAC) untuk mengklasifikasi driving and dependence power dari CICEs dan metode Analytical Network Process (ANP) untuk menentukan bobot masing-masing CICEs dan dimensi pengukuran. Penentuan kriteria dan indikator untuk masing-masing CICEs dikembangkan berbasis pada 3 elemen pengukuran inovasi, yakni: potensi, proses dan hasil inovasi, sedangkan pengembangan model matematis perhitungan skor CIC dikembangkan berbasis pada metode multi-faktor. Evaluasi dan validasi model pengukuran dilakukan dengan metode multiple case study.

Penelitian ini berhasil mengidentifikasi dan menentukan 16 CICEs, 50 kriteria, 103 indikator pengukuran dan mengembangkan model matematis perhitungan skor CIC yang sesuai dengan karakteristik industri manufaktur di Indonesia. Model pengukuran CIC telah di ujicoba pada 2 industri manufaktur skala besar, yakni industri otomotif dan elektronik. Hasil uji coba menunjukkan bahwa model pengukuran CIC dapat digunakan dengan baik dan valid. Hasil penelitian juga menunjukkan bahwa faktor kepemimpinan, iklim dan budaya, dan kapabilitas teknologi informasi merupakan faktor CICEs yang memiliki driving power tertinggi dan dependence power terendah. Hal ini mengindikasikan bahwa upaya pengembangan kapabilitas inovasi secara terus menerus di industri manufaktur Indonesia sangat dipengaruhi oleh faktor kepemimpinan, faktor iklim dan budaya dan kapabilitas teknologi informasi. Model CIC adalah sebuah model baru pengukuran kapabilitas inovasi yang holistic karena sepenuhnya menerapkan tiga elemen prinsip dasar pengukuran kapabilitas inovasi, mengukur kapabilitas inovasi seluruh dimensi penting yang ada dalam suatu perusahaan, dan dapat menjelaskan pola hubungan antar CICEs.

.....To face the rapidly changing industrial environment, the manufacturing industry requires Continuous Innovation Capability (CIC). CIC which is the ability to continuously innovate, is needed by the

manufacturing industry today so that the industry can have high competitiveness and continue to survive, by continuously producing new products, new processes, new service systems, and new business models that are always relevant to the market needs. Innovation is a process that requires continuous, evolving and mastered management. Therefore companies must to measure their continuous innovation capability. This research aims to design a more holistic measurement model for CIC of the manufacturing industry in Indonesia.

The development of this CIC model was conducted through three stages of research, i.e. identification of Continuous Innovation Capability Enablers (CICEs), development of measurement model, followed by model evaluation and validation. The Identification of CICEs used a systematic literature review and a focus group discussion. The selection process for CICEs employed the Fuzzy Delphi Method. To develop a measurement model, contextual relationships between CICEs were assessed using Total interpretive Structural Modelling, followed by measurements of CICEs weights with the Analytical Network Process method. Then, assessment indicators for each CICEs and criteria were determined as well as a mathematical model to measure CIC scores. Model evaluation and validation were performed in two case studies: in the automotive and electronic industries.

This research produced 16 CICEs, 50 criteria and 103 assessment indicators; as well as a mathematical model to measure CIC scores. The validation process showed that the currently developed model was deemed valid. This research highlighted that in order to develop continuous innovation in the Indonesian manufacturing industry, they should begin with strengthening the capabilities of leadership, establishing a strong and conducive climate and culture for innovation, and investing significantly in developing IT capability. The CIC model is a new holistic measurement model; it integrates three fundamental elements of CI capability measurement, considering all the important dimensions in a company, and is also able to explain contextual relationships between measured factors