

APPLICATION OF RASCH MEASUREMENT MODEL IN EXAMINING THE
IMPLEMENTATION OF ISO 9000 AND ORGANIZATIONAL PERFORMANCE
IN MALAYSIA

By

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ABSTRACT

Quality Management System (QMS), especially the ISO 9000 QMS, is not a concept new to the world. Since its establishment, the ISO 9000 QMS has undergone several revisions in coping with the changes in an increasingly competitive market environment. Consequently, many studies have been conducted in view of the above. However, the consensus among the scholars regarding the effect of ISO 9000 implementation and organisational performance is still inconclusive. Issues like the level of comprehensiveness in ISO 9000 implementation, inconsistent variables, and differing methodologies might be of some major variances. In general, this study attempts to revisit these issues and analyse them using the Rasch Measurement Model. The data were collected through series of survey on randomly selected automotive-based companies determined beforehand. The survey questions were developed based on previous literature in which the Likert scale (1 – low to 5 – high) was used to measure the perception of the respondents. Working on the 28% response rate, the data was processed and analysed using Winstep 3.6 software. The results revealed that there is a positive and significant relationship between ISO 9000 implementation and organisational performance. They also revealed that the higher the capability of the organisation in implementing ISO 9000 standard requirements and guidelines, the higher the probability of success in optimising organisational performance. Fundamentally, this study seeks to contribute in view of applying a new paradigm of measurement theory in the area of quality management. Consequently, the output is expected to be of a valuable assistance for organisations in determining their capability and planning for continuous improvement in the area of quality management.

Keywords: Quality Management System, Rasch Measurement Model, ISO 9000 and Organisational Performance

ABSTRAK

Sistem pengurusan kualiti terutama ISO 9000 bukanlah sesuatu yang baru kepada dunia. Ia telah pun mengalami banyak perubahan sejak penubuhannya bagi memenuhi keperluan pasaran yang kompetitif. Banyak kajian telah dijalankan dalam perspektif yang berbeza. Walaubagaimanapun, terdapat beberapa kajian terutamanya dalam menentukan hubungan antara pelaksanaan ISO 9000 dan prestasi organisasi tidak dapat mencapai persetujuan dikalangan penyelidik. Persetujuan tidak tercapai disebabkan oleh beberapa faktor antaranya perbezaan tahap pelaksanaan ISO 9000, pembolehubah yang tidak konsisten dan methodologi penyelidikan yang digunakan adalah berbeza. Oleh itu objektif penyelidikan ini adalah untuk mengkaji semula isu-isu tersebut dan dianalisa menggunakan Model Pengukuran Rasch. Data yang dikumpul melalui pengedaran soal selidik kepada syarikat-syarikat automotif berasaskan pilihan secara rawak dari populasi yang ditentukan. Soalan soal selidik telah dibangunkan berdasarkan kesusasteraan sebelumnya dan skala Likert (1 – rendah ke 5 – tinggi) digunakan untuk mengukur persepsi responden. Dengan 28% kadar maklum balas, data telah diproses dan dianalisa dengan perisian Winstep 3.6. Hasil kajian mendapati bahawa terdapat hubungan yang positif dan signifikan antara implementasi ISO 9000 dan prestasi organisasi. Selain dari itu hasil kajian menunjukkan bahawa semakin tinggi keupayaan sesebuah organisasi dalam mengimplementasi piawaian dan garis panduan ISO 9000 maka lebih tinggi kebarangkalian kejayaan dalam mengoptimumkan prestasi organisasi. Kajian ini menyumbang kepada pertambahan ilmu dalam menggunakan pendekatan pengukuran baru dalam bidang pengurusan kualiti. Dapatan kajian ini dapat membantu organisasi dalam mengenalpasti keupayaan dan membuat perancangan untuk penambahbaikan berterusan didalam bidang pengurusan kualiti.

Katakunci: Sistem Pengurusan Kualiti, Model Pengukuran Rasch, ISO 9000, dan Prestasi Organisasi

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LIST OF ABBREVIATIONS

AFTA	ASEAN Free Trade Area
CKD	Complete knock down
CTT	Classical Test Theory
GCC	Group characteristic graph
GST	General system theory
IMP3	Industrial Master Plan 3
IRT	Items Response Theory
IOS	International Organization for Standardization
MMPF	Multi Model Performance Framework
PCA	Principal component analysis
PIDM	Person item distribution map
PRM	Polytomous Rasch model
PTMEA CORR	Point measure correlation
QMS	Quality management system
RM	Rasch Model
SKPA	Surat pekeliling Perkhidmatan Awam
SME	Small medium enterprise
SMIDEC	Small and Medium Industries Development Corporation
TQM	Total Quality Management
PDCA	Plan, Do, Check, Action
AOQL	Average Outgoing Quality Level
ROA	Return on Assets
SEM	Structural Equation Model
MMPF	Multi Model Performance Framework
MNSQ	Mean square
KPI	Key performance indicator

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

In the era of intense competition and globalization,, the survival of individual firms depends on their ability to enhance and augment their competitive advantage in the global market. Quality is emerging as the paramount factor for companies to survive in the ever-expanding market place (Zakuan, Yusof, Saman, & Shaharoun, 2010). Quality is vital in determining the economic success of the organization both in the domestic and international markets (Kartha, 2004), and this includes manufacturing companies (Curkovic, Melnyk, Calantone, & Handfield, 2000). As mentioned in Zakuan et al., (2010) world-class manufacturing companies gain a competitive edge and a bigger bite of the market share through extraordinary levels of performance by providing quality products at a competitive price as required by demanding customers, while building and maintaining customer loyalty.

A variety of concepts and techniques have been adopted to improve the quality of products and services. Many organizations have noticed that effective quality management can enhance their competitive edge and provide strategic advantages in the marketplace. In light of this, it is essential for organizations to develop or adopt an effective Quality Management System (Politis, Litos, Grigoroudis, & Moustakis, 2009), very often associated with the ISO 9000 series (Rohitratana & Boon-itt, 2001).

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