STRUCTURAL RELATIONSHIP BETWEEN OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION PRACTICES, OHSAS 18001 EFFORTS AND PERFORMANCE

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ABSTRACT

The aim of this study is to develop a model that incorporates Occupational Safety and Health Administration Practices (OSHAP), OHSAS 18001 efforts and Occupational Safety and Health Administration Performance (OSHAPM) in Malaysian automotive suppliers. Every company in manufacturing industry is compulsory to have a certification of safety to reduce accident or incident caused. However, before they have the certification they should implement OSHAP to decrease the management cost. A survey through questionnaire was conducted to determine the level of OSHAP implementation, OHSAS 18001 Efforts as well as OSHAPM measurement. 278 sets of questionnaire were successfully collected that brought to 69.50% response rate. Structural equation modelling technique was utilized to perform the required statistical analysis of the data survey. In order to test the reliability and validity of the instruments, reliability analysis, exploratory factor analysis and confirmatory factor analysis were carried out. The results are shown that OHSAS 18001 Efforts did assist directly in improving OSHAPM when implemented with OSHAP. This research also provides a fundamental and direction for researchers in further research and practitioners to constantly improve OSHAPM through the implementation of OSHAP and OHSAS 18001 Efforts.

HUBUNGAN BERSTRUKTUR ANTARA AMALAN PENTADBIRAN KESIHATAN DAN KESELAMATAN PEKERJAAN, USAHA 18001 OHSAS DAN PRESTASI

ABSTRAK

Tujuan kajian ini adalah untuk mengenalpasti hubungan antara OSHAP, usaha OHSAS 18001 dan OSHAPM, dan membangunkan model yang menggabungkan elemen-elemen ini untuk pembekal automotif Malaysia. Setiap syarikat dalam industri perkilangan wajib mempunyai sijil keselamatan untuk mengurangkan berlakunya kemalangan. Walau bagaimanapun, mereka perlu melaksanakan OSHAP bagi mengurangkan kos pengurusan. Satu tinjauan melalui soal selidik telah dijalankan untuk menentukan tahap pelaksanaan OSHAP, usaha OHSAS 18001 serta pengukuran OSHAPM. 278 set soal selidik telah berjaya dikumpulkan dengan kadar tindak balas, 69.50%. Teknik struktur persamaan model telah digunakan untuk menguji analisis statistik yang diperlukan dalam data kajian. Dalam usaha untuk menguji kebolehpercayaan dan kesahan instrumen, analisis kebolehpercayaan, analisis faktor penerokaan dan analisis faktor pengesahan telah dijalankan. Keputusan menunjukkan bahawa usaha OHSAS 18001 tidak membantu secara terus dalam meningkatkan OSHAPM tetapi ianya dapat membantu apabila dilaksanakan dengan OSHAP. Kajian ini juga menyediakan asas dan hala tuju bagi penyelidik dalam penyelidikan lanjut dan pengamal untuk sentiasa memperbaiki OSHAPM melalui pelaksanaan OSHAP dan usaha OHSAS 18001.

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AFTA	ASEAN Free Trade Area
AGFI	Adjusted Good Fit
AIMS	Automotive Institute of Malaysia
AMOS	Analysis of Moment Structures
AT	Employee Attitude
CBU	Complete built-up
CC	Checking and Correction Action
CEPT	Common Effective Preferential agreements Tariffs
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Continual Improvement
CSF	Critical Success Factors
CSR	Corporate Social Responsibility
DOE	Department of Environment
DOSH	Department of Occupational Safety and Health
EC	Effective Communication
EEV	Energy Efficient Vehicles
EFA	Exploratory Factor Analysis
EI	Employee Involvement
FP	Financial Performance
GFI	Goodness Fit Index
HRM	Human Resource Management
IO	Implementation and Operation
KMO	Keiser Meyer Olkin
KVP	Kelab Vendor Perodua
LD	Leadership Style
MAI	Malaysian Automotive Institutes
MITI	Ministry International Trade and Industry
MOT	Ministry of Transport
MPC	Malaysia Productivity Corporation

MR	Management Review
NAP	National Automotive Policy
OEMs	Original Equipment Manufacturers
OHSAS	Occupational Safety and Health Administration Systems
OSH	Occupational Safety and Health
OSHA Act	Occupational Safety and Health Act
OSHA	Occupational Safety and Health Administration
OSHAP	Occupational Safety and Health Administration Practices
OSHAPM	Occupational Safety and Health Administration Performance
PC	OHS Policy
PCA	Principal Component Analysis
PDCA	Plan-Do-Check-Act
PL	Planning
PMS	Performance Measurement System
PVA	Proton Vendor Association
QA	Quality Assurance
QC	Quality Manager
QM	Quality Management
R&D	Research and Development
RMSEA	Root Mean Square Error Approximation
ROA	Return on Assets
RTD	Road Transport Department
SC	Safety Culture
SEM	Structural Equation Model
SHE	Safety, Health and Environment
SIRIM	Standards and Industrial Research Institute of Malaysia
SP	Safety Performance
SPSS	Statistical Package for Social Sciences
TLI	Tucker Lewis Index
TQM	Total Quality Management
TR	Safety and Health Training
VTA	Vehicle Type Approval
WCM	World Class Manufacturing

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The sector's that involve large contribution to the economy and closely related to manufacturing and services industries is automotive industry. It is an important industry to the Malaysian economy. Malaysian automotive industry began with the importation of vehicles which then progressed to assembly operations and the development of the automotive component industry. Malaysia is a country that putting importance to progress in the automotive sector for economic development to a higher level economy (Hashim, Habidin, Conding, Jaya, & Zubir, 2012). The history of the Malaysian automotive industry occurs when the Malaysian government developed a policy to promote an integrated automotive industry to strengthen its Malaysian

industrial development. The promotion have their own objective which are to establish the limitation of imports, the reduction of expenses in foreign exchange, the creation of employment and the development of the industrial sector (MGCC- Market Watch, 2011).

In the automobile industry, Malaysia has obtained much recognition regionally and internationally for its outstanding in achievements (Rosli, 2006). To ensure the product quality, durability and performance same as new components while maintaining sustainability of resources with automotive re-manufacturing practice of taking end-of-life parts to be modified and reconstructed, with warranty to make it match by Original Equipment Manufacturers (OEMs). Furthermore, Malaysia Automotive Institute (MAI) is also trying to set up the Automotive e-Community, a knowledge-based platform open to all the stakeholders right from industry, government and agencies, academia and also the public to share the information and latest updates domestically, regionally and as well as globally (MGCC- Market Watch, 2012; Han, 2013).

According to Mahidin and Kanageswary (2004), the automotive industry has succeeded in improving the country's economy at once fulfilling the government's industrialization efforts. Currently, Malaysia is trying to achieving Malaysia's Vision 2020. One of the key strategies in is the Malaysia Incorporated concept. Based on the concept, Malaysian companies need to assess the criteria of strategic goals, competitive marketing, quality products, competitive innovation, competitive human resource management, sense of national pride and professionalism. Our national carmakers work hard to achieve these criteria to enable them to have a field in the

ASEAN and global market in future. Together enlarge the market with intense competition from Thailand and China's automobile industry. Since 2010, Malaysia is ASEAN's largest vehicle market with annual sales of more than 500, 000 vehicles and only 10% made and assembled overseas (MITI, 2010).

Generally, automotive industry is the most actively involved industry in the multiple practices such as quality effort, low production cost, continuous improvement activities, development of supply chains, and adaptability technology advanced. The practices involved because want to achieve World Class Manufacturing (WCM) which emphasize the systematic and effective practices in manufacturing process. Besides that, the organization's capabilities should provide worlds class performance element in their management process to achieve WCM such as reduce cost (Kennedy & Widener, 2008; Johansson & Siverbo, 2009), higher quality (Ittner & Larcker, 1995), higher motivation, and safety (Nachiappan, Anatharaman, & Muthukumar 2009).

In regards to that, WCM is a different set of concepts, principles, policies and techniques for managing and operating a manufacturing company. It is one of the broadest philosophies focusing primarily on production and includes more structural changes such as new production technology (Vokurka & Davis, 2004). Besides that, WCM is also a process-driven approach where implementations usually involve the following techniques such as high employee involvement, cross functional teams, multi-skilled employees, continuous improvement, and zero defects. Therefore, organization engaging in WCM strategies must focus on improving operations, strive to eliminate waste and create lean organizations.

In relation to that, to achieve WCM, Malaysia has put the National Automotive Policy (NAP) as a basis and foundation of development and growth for the local automotive industry. The objective of NAP are to generate sustainable economic value that maximize the long term contribution of the automotive sector to the national economy and at the same time give the benefit for Malaysian consumer (MITI, 2010). Therefore, this industry still needs the support of government policies in order to become more competitive internationally.

The NAP aims to produce optimal transformation and integration of national industry into regional and global industry network. Expanding and competitive global environment requires urgent transformation. Consequently, the government has outlined the objectives of the national automotive sector as follows in Table 1.1 below.

Table 1.1

Objectives of the National Automotive Policy

- Ensure orderly development as well as long term competitiveness and capability of the domestic automotive industry as a result of market liberalization;
- Create a conducive environment to attract new investment and expand existing opportunities;
- Enhance the competitiveness of the national car manufacturer through strategic partnership;
- Foster the development of the latest, more sophisticated technology in the domestic automotive industry;
- Develop high value-added manufacturing activities in niche areas;
- Enhance Bumiputera participation in the domestic automotive industry;
- Improve safety standard for consumers and promote environment-friendly opportunities; and
- Enhance the implementation of current NAP's policy instrument

Source: MITI (2010) and Habidin (2012)

Based on that, NAP describe the automotive organizations need to make any substantial changes in their management systems either in system maintenance, using the equipment, continuous improvement, investment in technology and innovation (Nachiappan, Anatharaman, & Muthukumar, 2009). Modern manufacturing requires that to be successful organizations must be supported by both effective and efficient maintenance. In relation to that, there is progress in the revision of the National Automotive Policy (NAP), which aims to enhance the competitiveness of the industry. Malaysia focuses on the automotive industry to become a regional hub for Energy Efficient Vehicles (EEV), which ensure the recruitment of high technology.

Three objectives in NAP 2012 are investment, technology and engineering as well as market expansion and outreach by providing a strategy for the development of the supply chain, ensure adequate manpower at all levels and also for safety and the environment. In review of NAP 2012, the Road Transport Department (RTD) was assigned to implement the Vehicle Type Approval (VTA) project in efforts to increase the safety. The Ministry of Transport (MOT) accords priority in the 10th Malaysia Plan for establishment of the VTA standards and testing facilities (MITI, 2012).

The global automotive industry should undergo a fundamental transformation due to increasing their performance through Occupational Safety and Health Administration (OSHA). One approach to improving the performance of maintenance activities is implementing and develops an Occupational Safety and Health Administration Practices (OSHAP). OSHA is practical information to assist automotive industry address employee protection and training as part of emergency planning for mass casualty incidents involving hazardous substances. OSHA considers

as planning the first line of defense in all types of emergencies. According to the Occupational Safety and Health Act of 1970, the definition of OSHA is authorized to conduct workplace inspections and investigations to determine whether employers are complying with standards issued by the agency for safe and healthful workplaces such as automotive industry. OSHA also enforces Section 5(a) (1) of the Act known as the "General Duty Clause," which requires that every working people whether man and woman, they are must be provide with a safe and healthful workplace (OSHA Inspection, 2002).

1.2 Problem Statement

Every manufacturing industry is compulsory to have a certification of OHSAS 18001 to avoid from any incident or accident in emergencies caused. At DRB-HICOM, they committed to providing a safe and healthy working environment through periodic in-house safety checks in compliance with the nationally-recognized Health and Safety guidelines. The Group's Safety, Health, and Environment (HSE) Committee as a leader and guided by the provisions of the Occupational Safety and Health Act (OSHA Act), they closely same with various organizations including the Fire Department, Department of Environment (DOE), and Department of Occupational Safety and Health (DOSH) is to create a safe and comfortable working environment for all staff at the workplace. Regular fire drills are conducted to better prepare their employees for speedy evacuation in cases of fire emergencies (DRB-HICOM, 2012).