

**ORGANISATIONAL LEARNING, ORGANISATIONAL  
AMBIDEXTERITY, ENVIRONMENTAL  
TURBULENCE, AND NPD PERFORMANCE OF  
MALAYSIAN'S MANUFACTURING SECTOR**

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**By**

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**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
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in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**

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## ABSTRACT

Despite numerous studies proving that environmental turbulence was moderating the new product development (NPD) performance of manufacturing firms, it is however, still less stressed upon in Malaysia. Motivated by the current NPD issues on organisational capability from the dynamic capability (DCs) perspective, this study aimed to empirically determine the relationships between organisational capability and NPD performance, and sequentially examine the moderating effects of environmental turbulence in those relationships. A survey was randomly conducted among 123 product/production managers from various manufacturing industries in Malaysia. The data was analysed with the SPSS v.19 statistical technique. Prior to the analysis, the data was cleaned, inspected for outliers, normality, factor analysis, and reliability test to meet the assumptions for the parametric test. The results of correlation and hierarchical multiple regression analyses found 22 (out of 48) hypotheses were supported. In detail, the exploitation capability, exploration capability, and contextual ambidexterity were found to be significantly correlated to NPD performance. It was also found that market turbulence was giving a pure moderation to all types of organisational capability (exploitation capability, exploration capability, structural ambidexterity, and contextual ambidexterity) on NPD financial performance. Meanwhile, the moderating effects of technological turbulence, and competitive intensity were varied across different relationships. All-in-all, the findings indicated that the concept of DCs was useful for building a firm's ability to deploy organisational capabilities under different types of environmental turbulence to achieve better NPD performance. It can be achieved by creating balance in the firm's NPD portfolio and is useful in the NPD strategy for decision-making process. Besides these contributions, the limitations of the study, and future research agenda were also discussed.

**Keywords:** dynamic capability, environmental turbulence, Malaysian manufacturing sector, NPD performance, organisational capability

## ABSTRAK

Meskipun pelbagai kajian telah membuktikan ketidaktentuan persekitaran merupakan penyederhana kepada prestasi pembangunan produk baru (NPD) bagi firma pengilangan, namun ia didapati kurang diberikan penekanan di Malaysia. Motivasi didorong oleh isu-isu semasa NPD ke atas keupayaan organisasi dari sudut pandangan keupayaan dinamik (DCs). Kajian ini bertujuan untuk menentukan hubungan secara empirikal di antara keupayaan organisasi dan prestasi NPD, seterusnya mengkaji kesan penyederhanaan oleh ketidaktentuan persekitaran ke atas hubungan tersebut. Satu tinjauan rawak dilakukan ke atas 123 pengurus keluaran/pengeluaran daripada pelbagai industri pengilangan di Malaysia. Data tersebut dianalisis dengan menggunakan teknik statistik SPSS v.19. Sebelum analisis dilakukan, data dibersihkan, diperiksa untuk *outliers*, normaliti, analisis faktor, dan ujian kebolehpercayaan untuk memenuhi hipotesis bagi ujian parametrik. Hasil analisis korelasi dan regresi pelbagai peringkat mendapati bahawa 22 (daripada 48) hipotesis telah disokong. Secara khususnya, keupayaan eksploitasi, keupayaan eksplorasi, dan kedwicekatan berkontek didapati mempunyai hubungkait secara signifikan dengan prestasi NPD. Dapatan kajian juga menunjukkan bahawa ketidaktentuan pasaran memberikan penyederhanaan penuh ke atas semua jenis keupayaan organisasi (keupayaan eksploitasi, keupayaan eksplorasi, kedwicekatan berstruktur, dan kedwicekatan berkontek) dan prestasi kewangan NPD. Sementara itu, kesan penyederhanaan oleh ketidaktentuan teknologi dan ketegasan persaingan adalah berbeza mengikut jenis hubungan. Secara keseluruhannya, dapatan kajian menunjukkan bahawa konsep DCs adalah berguna untuk membina keupayaan firma dalam mengatur kedudukan keupayaan organisasi di bawah jenis ketidaktentuan persekitaran yang berbeza untuk mencapai prestasi NPD yang terbaik. Ia boleh dicapai dengan mewujudkan keseimbangan dalam portfolio NPD dan seterusnya berguna kepada strategi NPD untuk proses membuat keputusan. Selain daripada sumbangan dan kekangan kajian, agenda kajian pada masa hadapan juga dibincangkan.

**Kata kunci:** keupayaan dinamik, ketidaktentuan persekitaran, sektor pengilangan Malaysia, prestasi NPD, keupayaan organisasi

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## LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
DCs	Dynamic Capabilities
DV	Dependent Variable
ETP	Economic Transformation Programme
FMM	Federation of Malaysian Manufacturing
GDP	Gross Domestic Product
GNI	Gross National Income
ICT	Information and Communication Technology
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin
MIDA	Malaysian Investment Development Authority
MITI	Ministry of International Trade and Industry
MOSTI	Ministry of Science, Technology and Innovation
MSA	Measure of Sampling Adequacy
NIC	National Innovation Council
NKEAs	National Key Economics Areas
NPD	New Product Development
OYA	Othman Yeop Abdullah
PCA	Principal Component Analysis
R&D	Research and Development
RBV	Resource-based View
RMK-9	The Ninth Malaysia Plan
RMK-10	The Tenth Malaysia Plan
ROI	Returns on Investment
SMEs	Small and Medium Enterprises
UUM	Universiti Utara Malaysia
VIF	Variance Inflation Factor



# **CHAPTER ONE: INTRODUCTION**

## **1.0 Introduction**

This study was initiated to investigate the deployment of organisational capabilities in achieving higher levels of new product development (NPD) performance in the context of Malaysian manufacturing sector. In doing so, the researcher was interested in determining and examining the relationships of four types of organisational capability, namely exploitation and exploration capabilities (organisational learning), and structural and contextual ambidexterity (organisational ambidexterity) to NPD performance under moderating effects of environmental turbulence. The discussion begins with research background and current issues surrounding the relationships between organisational capabilities, environmental turbulence, and NPD performance, which is then proceeded with the establishment of problem statement, research questions and objectives, the definitions of key terms, as well as the significance, justification, scope, limitations, and organisation of thesis.

## **1.1 Background of the Study**

Innovation is a critical driver for economic growth (Torun & Cicekci, 2007; Segerstrom, 1991) and importance for the well-being of developing nations (Chandra & Neelankavil, 2008). It is commonly characterises world-class manufacturing firms (Jaruzelski & Mainardi, 2011). For instance, service and innovation activities of manufacturing firms have contributed up to 70% of the gross domestic product (GDP) for developed countries (Mohamed, 2011), which have turned them into world economic powers. As for Malaysia, even though manufacturing is only ranked second after service sector in terms of investment values, it remains one of the main

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