

**THE RELATIONSHIP BETWEEN INTELLECTUAL  
CAPITAL, INNOVATION CAPABILITY WITH FIRM  
AGE AND FIRM PERFORMANCE**

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**THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL,  
INNOVATION CAPABILITY WITH FIRM AGE AND FIRM  
PERFORMANCE**

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**Kolej Perniagaan**  
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## ABSTRACT

The recognition of intellectual capital and innovation capability as a key success factor in an increasingly competitive, global economy has the groundwork for researchers to explore new practices of management. Intellectual capital is defined as a combination of human, structural and relational capital that creates value and consequently determines the performance of a firm whilst innovation capability refers to the ability of a firm to transform an idea into a something new which carries an economic value. The study focuses on small and medium enterprises because they make up the bulk of firms in the Malaysian economy and the Government has spent a lot of money, time and effort to develop them. The study begins with an extensive literature review concerning the research problems and issues, theoretical concept, definition and measurement of intellectual capital, human capital (HC), structural capital (SC), relational capital (RC), innovation capability, firm age and firm performance. Next, using the survey data collected from small and medium enterprises, it provides a comprehensive set of empirical evidence that look into the mediating role of innovation capability and the moderating role of firm age in the relationship between intellectual capital, HC, SC, RC and firm performance. There are three conclusive findings of the study. First, intellectual capital, RC and innovation capability have influence on performance; second, intellectual capital and SC have influence on innovation capability; and third, innovation capability mediates the effect of intellectual capital and SC on firm performance. Based on these findings, the researcher lists several recommendations in the form of management science that can be used by policy-makers and business owners to improve business performance. Finally, this study highlights the limitations of the study and suggests directions for future studies.

**Keywords:** intellectual capital, innovation capability, firm age, performance

## ABSTRAK

Faktor utama kejayaan dalam ekonomi global yang semakin berdaya saing ialah pengiktirafan modal intelek dan keupayaan inovasi. Hal ini telah menjadi asas bagi penyelidik untuk meneroka amalan baru dalam pengurusan. Modal intelek boleh ditakrifkan sebagai gabungan modal insan, modal struktur dan modal hubungan yang menghasilkan nilai dan seterusnya menentukan pencapaian firma. Manakala keupayaan inovasi merujuk kepada keupayaan firma untuk mengubah idea menjadi sesuatu bentuk yang baru dan mempunyai nilai ekonomi. Kajian ini memberi tumpuan kepada perusahaan kecil dan sederhana kerana ia membentuk sebahagian besar firma dalam ekonomi Malaysia dan kerajaan telah menghabiskan banyak wang, masa dan usaha untuk memajukan perusahaan ini. Kajian ini dimulai dengan kajian literatur yang luas mengenai permasalahan dan isu kajian, konsep teori, definisi dan pengukuran modal intelek, modal insan (HC), modal struktur (SC), modal hubungan (RC), keupayaan inovasi, umur firma dan pencapaian firma. Seterusnya, dengan menggunakan data kajian yang diperoleh dari perusahaan kecil dan sederhana, kajian ini menyediakan satu set bukti empirikal komprehensif yang melihat peranan perantara bagi keupayaan inovasi dan peranan penyederhanaan umur firma dalam hubungan antara modal intelek, HC, SC, RC dan pencapaian firma. Hasil kajian menunjukkan bahawa terdapat tiga penemuan konklusif kajian. Pertama, modal intelek, RC dan keupayaan inovasi mempunyai pengaruh ke atas pencapaian; kedua, modal intelek dan SC mempunyai pengaruh ke atas keupayaan inovasi; dan ketiga, keupayaan inovasi merupakan pengantara kepada modal intelek dan SC yang memberi kesan ke atas pencapaian. Berdasarkan penemuan ini, penyelidik telah menyenaraikan beberapa cadangan dalam bentuk sains pengurusan yang boleh digunakan oleh pembuat dasar dan pemilik perniagaan untuk meningkatkan prestasi perniagaan. Akhir sekali, kajian ini mengetengahkan batasan kajian dan mencadangkan hala tuju kajian pada masa akan datang.

**Kata kunci:** modal intelek, keupayaan inovasi, umur firma, pencapaian

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## LIST OF OPERATIONAL DEFINITIONS

|                               |   |
|-------------------------------|---|
| <b>Construct</b>              | Latent concept that the researcher can define in conceptual terms but cannot be directly measured.  |
| <b>Indicator</b>              | Items that form a composite measure. A construct is measured by multiple indicators.  |
| <b>Human capital</b>          | The knowledge, abilities, experiences and attitudes possess by the organizational members.  |
| <b>Incremental innovation</b> | A significant extension of existing products or process characteristics either improvement or refinement of the product or process.                                 |
| <b>Intellectual capital</b>   | A combination of human, structural and relational capital that creates value and consequently determines performance of a firm.                                     |
| <b>Innovation</b>             | New outcomes either incremental or radical generated from implementation of creative ideas.   |
| <b>Innovation capability</b>  | The ability of a firm to transform an idea into a something new which carries an economic value.  |
| <b>Performance</b>            | How well a firm does something.   |
| <b>Radical innovation</b>     | The outcome of totally a new product or process into the market.  |
| <b>Relational capital</b>     | All the knowledge embedded in the relationships with external parties which include alliances, customers, investors, distribution networks, partners and suppliers. |
| <b>Structural capital</b>     | A collection of knowledge in an organization embedded in systems, databases and program.  |

## **LIST OF ABBREVIATIONS**

|                |   |
|----------------|---|
| <b>BSC</b>     | Balance Scorecard                                 |
| <b>CEE</b>     | Capital Employed Efficiency                       |
| <b>CR</b>      | Composite Reliability                             |
| <b>EVA</b>     | Economic Value Added                              |
| <b>GDP</b>     | Gross Domestic Product                            |
| <b>HC</b>      | Human Capital                                     |
| <b>HCE</b>     | Human Capital Efficiency                          |
| <b>IAM</b>     | Intangible Assets Monitor                         |
| <b>IPRs</b>    | Intellectual Property Rights                      |
| <b>MaGIC</b>   | Malaysian Global Innovation and Creativity Center |
| <b>MPC</b>     | Malaysia Productivity Corporation                 |
| <b>MyIPO</b>   | Intellectual Property Corporation of Malaysia     |
| <b>PLS</b>     | Partial Least Square                              |
| <b>PNS</b>     | Perbadanan Nasional Berhad                        |
| <b>RBV</b>     | Resource Based View                               |
| <b>NEAC</b>    | National Economic Advisory Council                |
| <b>NSDC</b>    | National SME Development Council                  |
| <b>RC</b>      | Relational Capital                                |
| <b>RI</b>      | Residual Income                                   |
| <b>ROA</b>     | Return on Assets                                  |
| <b>ROE</b>     | Return on Equity                                  |
| <b>ROI</b>     | Return on Investment                              |
| <b>ROS</b>     | Return on Sales                                   |
| <b>R&amp;D</b> | Research and Development                          |
| <b>SC</b>      | Structural Capital                                |
| <b>SCE</b>     | Structural Capital Efficiency                     |
| <b>SME</b>     | Small and Medium Enterprise                       |

|                |   |
|----------------|---|
| <b>SMECorp</b> | Small and Medium Enterprise Corporation             |
| <b>SMIDEC</b>  | Small and Medium Industries Development Corporation |
| <b>SPSS</b>    | Statistical Package for Social Science              |
| <b>SRI</b>     | Strategic Reform Initiatives                        |
| <b>TNA</b>     | Training Need Analysis                              |
| <b>VA</b>      | Value Added   |
| <b>VAHC</b>    | Value Added of Human Capital                        |
| <b>VAIC</b>    | Value Added Intellectual Coefficient                |

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Rapid changes are taking place, be it in social, technological, political and economic context occasioned by the effect of globalization. Globalization implies a borderless world where borders are disappearing with unprecedented movement of people, goods and services as well as capital. In a borderless world, without adequate knowledge it is difficult for firms to assess potentials and threats of the global business. Those people with wide knowledge and skills in most aspects of business and technical areas such as in human resource, accounting, information technology and engineering will have more mobility and are widely accepted around the globe than those with less knowledge. To some extent, what makes them different from others is that the former possess greater ability to adapt to new knowledge and new environment and create value. Value is something that is relatively worth which determine wealth creation.

In addition, a firm should be capable of developing new ideas, employ new processes, manufacture new products, deliver new services and develop a more efficient supply chain in order to stay competitive and be a step ahead. Similarly, they should have the capability to innovate, thus being an important reason for firms to employ people with passion and commitment towards work and foremost, people with sufficient knowledge. A study by Marr, Schiuma and Neely (2004) stressed that the foundation of firm's capability is based on knowledge. It is knowledge that distinguishes amongst firms as knowledge of each firm varies. Firms with more knowledge will be less

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