

**STRATEGIC ASPECTS OF TECHNOLOGICAL INNOVATION PERFORMANCE
OF ACQUIRING FIRMS IN CROSS-BORDER ACQUISITIONS**

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by

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CERTIFICATE

This is to certify that the thesis entitled "**Strategic Aspects of Technological Innovation Performance of Indian Acquiring Firms in Cross-border Acquisitions**" being submitted by **Mr Jayant Kumar Bansal**, to the Indian Institute of Technology, Delhi, for the award of the degree of **Doctor of Philosophy**, is a record of bonafide original research work carried out by him. He has worked under my guidance and supervision and has fulfilled the requirements for the thesis submission, which has attained the standard requirements for a Ph.D. degree at the Institute. The results presented in this thesis have not been submitted elsewhere for any degree or diploma.



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(Jayant Kumar Bansal)

ABSTRACT

Cross-border acquisition (CBA) provides inorganic growth to firms by acquiring the target firms in another country and integrating their technological assets and capabilities to establish their competitive advantage in global markets. The CBA in the technology sector is strategically driven by the intention to increase the frequency of post-CBA innovation outputs (i.e. patent applications, etc.), improving the acquiring firm's technological innovation performance. Many CBAs fail due to a lack of proper strategic planning. To gain the intended benefits from CBA, acquiring firms must comprehend the role of various strategic factors affecting their post-CBA performance.

This thesis aims to build a foundation by identifying strategic factors and understanding their roles in the acquiring firm's post-CBA technological innovation performance against three objectives. First, the study uses a PRISMA guidelines-based search protocol to select the sample (467 articles for bibliometric analysis and 62 articles for systematic literature review). This study identifies research gaps and strategic factors by performing bibliometric analysis and systematic literature review (SLR). It integrates the identified research themes (niche, basic, motor and emerging theme) with the TCCM framework (theory-context-characteristics-methodology) to identify future research questions and formulate the research agenda. The study finds eight strategic factors (i.e., innovation capability, technological capability, R&D capability, dynamic capability, post-CBA integration, strategic flexibility, strategic ambidexterity, and environmental dynamism) affecting the acquiring firm's post-CBA technological innovation performance. Second, A literature-based conceptual model is developed and upgraded into a five-level hierarchical model using m-TISM to display interrelationships between identified factors. The hierarchal model suggests three crucial paths impacting the acquiring firm's post-CBA technological innovation performance. The

MICMAC analysis groups the factors into four clusters: autonomous, linkage, dependent, and independent, discover the driver dependence relationships between strategic factors and recognize the governing factor. The results show that innovation, R&D, technological capability, and environmental dynamism have the highest driving power. The linkage factors (i.e. strategic ambidexterity, flexibility, and dynamic capability) affect the driver-dependence relationship of all other factors. The post-CBA integration is the governing factor; it controls the alignment of acquired resources and capabilities and decides the level of autonomy in the organisation, affecting the acquiring firm's post-CBA performance. Third, a multi-case study (within-case and cross-case analyses) using data triangulation is conducted to determine the validity and applicability of the identified strategic factors in practical scenarios. The study analyses four CBA cases from India, i.e. Jaguar Land Rover-TATA Motors deal in the automobile industry, Fem Care-Dabur deal in the FMCG industry, Terapia-Ranbaxy deal in the pharmaceutical industry, and Novelis-Hindalco deal in the manufacturing industry. The multi-case study suggests two additional factors (i.e., level of R&D investment and managerial decision-making) with eight strategic factors affecting the acquiring firm post-CBA technological innovation performance. The study also finds twenty-one strategic reasons behind the technology-driven CBA from Indian cases (i.e., improving brand image, entering foreign markets, portfolio diversification, strengthening competitive positioning, improving product market efficiency, etc.).

This thesis uniquely contributes to the existing literature by identifying reasons behind CBA and strategic factors affecting the acquiring firm's post-CBA technological performance. This study sets out implications for practitioners to draft effective acquisition strategies by focusing on the strategic aspects of CBA. This study illustrates that firms from emerging economies are entering developed economies, highlighting the global rise of emerging markets.

सार

सीमा-पार अधिग्रहण (सीबीए) किसी अन्य देश में लक्षित फर्मों का अधिग्रहण करके और वैश्विक बाजारों में उनके प्रतिस्पर्धी लाभ को स्थापित करने के लिए उनकी तकनीकी संपत्तियों और क्षमताओं को एकीकृत करके फर्मों को अकार्बनिक विकास प्रदान करता है। प्रौद्योगिकी क्षेत्र में सीबीए रणनीतिक रूप से पोस्ट-सीबीए नवाचार आउटपुट (यानी पेटेंट आवेदन इत्यादि) की आवृत्ति बढ़ाने के इरादे से संचालित होता है, जिससे अधिग्रहण करने वाली फर्म के तकनीकी नवाचार प्रदर्शन में सुधार होता है। उचित रणनीतिक योजना की कमी के कारण कई सीबीए विफल हो जाते हैं। सीबीए से अपेक्षित लाभ प्राप्त करने के लिए, अधिग्रहण करने वाली कंपनियों को सीबीए के बाद उनके प्रदर्शन को प्रभावित करने वाले विभिन्न रणनीतिक कारकों की भूमिका को समझना होगा।

इस थीसिस का उद्देश्य रणनीतिक कारकों की पहचान करके और तीन उद्देश्यों के विरुद्ध अधिग्रहण करने वाली फर्म के पोस्ट-सीबीए तकनीकी नवाचार प्रदर्शन में उनकी भूमिकाओं को समझकर एक नींव बनाना है। सबसे पहले, अध्ययन नमूने का चयन करने के लिए PRISMA दिशानिर्देश-आधारित खोज प्रोटोकॉल का उपयोग करता है (ग्रंथसूची विश्लेषण के लिए 467 लेख और व्यवस्थित साहित्य समीक्षा के लिए 62 लेख)। यह अध्ययन ग्रंथसूची विश्लेषण और व्यवस्थित साहित्य समीक्षा (एसएलआर) करके अनुसंधान अंतराल और रणनीतिक कारकों की पहचान करता है। यह भविष्य के अनुसंधान प्रश्नों की पहचान करने और अनुसंधान एजेंडा तैयार करने के लिए पहचाने गए अनुसंधान विषयों (आला, बुनियादी, मोटर और उभरते विषय) को टीसीसीएम ढांचे (सिद्धांत-संदर्भ-विशेषताएं-पद्धति) के साथ एकीकृत करता है। अध्ययन में आठ रणनीतिक कारकों (यानी, नवाचार क्षमता, तकनीकी क्षमता, अनुसंधान एवं विकास क्षमता, गतिशील क्षमता, पोस्ट-सीबीए एकीकरण, रणनीतिक लचीलापन, रणनीतिक अस्पष्टता, और पर्यावरणीय गतिशीलता) का पता चलता है जो अधिग्रहण करने वाली फर्म के पोस्ट-सीबीए तकनीकी नवाचार प्रदर्शन को प्रभावित करते हैं। दूसरा, पहचाने गए कारकों के बीच अंतर्संबंधों को प्रदर्शित करने

के लिए एम-टीआईएसएम का उपयोग करके एक साहित्य-आधारित वैचारिक मॉडल विकसित और पांच-स्तरीय पदानुक्रमित मॉडल में उन्नत किया गया है। पदानुक्रमित मॉडल अधिग्रहणकर्ता फर्म के पोस्ट-सीबीए तकनीकी नवाचार प्रदर्शन को प्रभावित करने वाले तीन महत्वपूर्ण रास्तों का सुझाव देता है। MICMAC विश्लेषण कारकों को चार समूहों में समूहित करता है: स्वायत्त, लिंकेज, आश्रित और स्वतंत्र, रणनीतिक कारकों के बीच चालक निर्भरता संबंधों की खोज करता है और शासी कारक को पहचानता है। नतीजे बताते हैं कि नवाचार, अनुसंधान एवं विकास, तकनीकी क्षमता और पर्यावरणीय गतिशीलता में सबसे अधिक प्रेरक शक्ति है। लिंकेज कारक (यानी रणनीतिक अस्पष्टता, लचीलापन और गतिशील क्षमता) अन्य सभी कारकों के चालक-निर्भरता संबंध को प्रभावित करते हैं। सीबीए के बाद का एकीकरण शासी कारक है; यह अर्जित संसाधनों और क्षमताओं के संरेखण को नियंत्रित करता है और संगठन में स्वायत्तता के स्तर को तय करता है, जो अधिग्रहण करने वाली फर्म के सीबीए के बाद के प्रदर्शन को प्रभावित करता है। तीसरा, व्यावहारिक परिदृश्यों में पहचाने गए रणनीतिक कारकों की वैधता और प्रयोज्यता निर्धारित करने के लिए डेटा ट्राइएंगुलेशन का उपयोग करके एक मल्टी-केस अध्ययन (केस के भीतर और क्रॉस-केस विश्लेषण) आयोजित किया जाता है। अध्ययन में भारत के चार सीबीए मामलों का विश्लेषण किया गया है, यानी ऑटोमोबाइल उद्योग में जगुआर लैंड रोवर-टाटा मोटर्स डील, एफएमसीजी उद्योग में फेम केयर-डाबर डील, फार्मास्युटिकल उद्योग में टेरापिया-रैनबैक्सी डील और विनिर्माण उद्योग में नोवेलिस-हिंडाल्को डील। . मल्टी-केस अध्ययन दो अतिरिक्त कारकों (अर्थात्, आर एंड डी निवेश का स्तर और प्रबंधकीय निर्णय लेने) का सुझाव देता है, जिसमें आठ रणनीतिक कारक शामिल हैं जो सीबीए के बाद तकनीकी नवाचार प्रदर्शन को प्रभावित करने वाली फर्म को प्रभावित करते हैं। अध्ययन में भारतीय मामलों से प्रौद्योगिकी-संचालित सीबीए के पीछे इक्कीस रणनीतिक कारणों का भी पता लगाया गया है (जैसे, ब्रांड छवि में सुधार, विदेशी बाजारों में प्रवेश, पोर्टफोलियो विविधीकरण, प्रतिस्पर्धी स्थिति को मजबूत करना, उत्पाद बाजार दक्षता में सुधार करना, आदि)।

यह थीसिस सीबीए के पीछे के कारणों और अधिग्रहण करने वाली फर्म के पोस्ट-सीबीए तकनीकी प्रदर्शन को प्रभावित करने वाले रणनीतिक कारकों की पहचान करके मौजूदा साहित्य में विशिष्ट योगदान देती है। यह अध्ययन सीबीए के रणनीतिक पहलुओं पर ध्यान केंद्रित करके प्रभावी अधिग्रहण रणनीतियों का मसौदा तैयार करने के लिए चिकित्सकों के लिए निहितार्थ निर्धारित करता है। यह अध्ययन दर्शाता है कि उभरती अर्थव्यवस्थाओं की कंपनियां विकसित अर्थव्यवस्थाओं में प्रवेश कर रही हैं, जो उभरते बाजारों के वैश्विक उदय को उजागर करती हैं।

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LIST OF ABBREVIATIONS

CBA: Cross-Border Acquisitions

DT: Diversification Theory

DCT: Dynamic capabilities theory

DC: Dynamic Capabilities

ED: Environmental Dynamism

GS: Google Scholar

h-index: Hirsch Index

IC: Innovation Capabilities

MICMAC: Matrice d'impacts croisés multiplication appliquée à un classment

OT: Organizational theory

PLS-SEM: Partial Least Squares Structural Equation Modelling

PI: Post-CBA Integration

RBV: Resource-Based View

RC: R&D Capabilities

RO: Research Objective

RQ: Research Questions

RG: Research Objective

R&D: Research and Development

SA: Strategic Ambidexterity

SF: Strategic Flexibility

SLR: Systematic Literature Review

TCCM: Theory Context Characteristics Methodology

TC: Technology Capabilities

TIP: Post-CBA Technological Innovation Performance of Acquiring Firm

WoS: Web of Science