



**The University of Newcastle, Australia**

**Leveraging Big Data-based Competitiveness in Emerging Markets: A Dynamic  
Capabilities Perspective**

by

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## **Declaration**

I hereby certify that this thesis has been composed solely by myself, under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

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## Abstract

Big data is hailed as a pivotal competitive differentiator. Accordingly, firms invest in big data capabilities for managing and appropriating value from big data. However, despite testimonials of success with big data, empirical theory on the mechanisms by which big data creates value remains limited. Drawing on the dynamic capabilities view, this study proposes that, amidst market turbulence, big data capabilities hone the firm's dynamic capabilities that drive and shape its value creation agenda. The main research question explored is how value creation through emergent, customer-focused business models rests on the firm's big data-mediated dynamic capabilities and the enabling mechanisms. The study argues that firms with strong big data capabilities effectively orchestrate the value targets of marketing, efficiency, and innovation. Data from 24 Kenyan business firms, a proxy for emerging markets contexts, is used for empirical validation through a qualitative, interpretive approach. The results show that big data capabilities strengthen a firm's sensing, seizing, and transformation capabilities for competitive positioning. This study can help academics and practitioners understand big data's business value proposition from the dynamic capabilities perspective. However, the investigation's primary limitation remains since cross-sectional data is used, and the sampled firms may not be fully representative of the entire Kenyan economy.

**Keywords:** Big data, Big data capabilities, Dynamic capabilities, Competitiveness, Value creation.

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## Abbreviations

API	Application Programming Interface
ATM	Automated Teller Machine
BD	Big Data
BDA	Big Data Analytics
BDC	Big Data Capabilities
BDIP	Big Data Innovation Processes
BDMP	Big Data Management Processes
CEO	Chief Executive Officer
COVID-19	Coronavirus Disease
CRM	Customer Relationship Management
CSBP	Customer Service Business Processes
DC	Dynamic Capabilities
DCV	Dynamic Capabilities View
DMS	Document Management System
DM	Digital Marketplace
DME	Developed Market Economy
DVD	Digital Versatile Disc
DW	Data Warehouse
EFT	Electronic Funds Transfer
EID	Early Infant Diagnosis
EM	Emerging Markets
EMR	Electronic Medical Records
EOC	Emergency Operations Centre
ERP	Enterprise Resource Planning software
FPCV	Firm Performance, Competitiveness and Value creation
GoK	The Government of Kenya
GT	Grounded Theory
HCD	Human Centered Design
HIV	Human Immunodeficiency Virus
HO-BDC	Higher-Order Big Data Capabilities
HREC	Human Research Ethics Committee
ICT	Information and Communications Technology

IDC	International Data Corporation
JSON	JavaScript Object Notation
LO-BDC	Lower-Order Big Data Capabilities
MBE	Member of the Order of the British Empire
MCORT	Market/Customer Orientation
M&E	Monitoring and Evaluation
MEP	Managerial entrepreneurialism
mLab	Mobile Laboratory
MM	Mobile Money
MP	Mobile Phone
NACOSTI	National Commission for Science, Technology and Innovation
NFC	Near-Field Communication
NoSQL	Not only SQL
OD	Open Data
OLP	Organizational Learning Processes
RDBMS	Relational Database Management Systems
RFID	Radio Frequency Identification
RQ	Research Questions
SAP	Systems Applications and Products in data processing
SMACIT	Social, Mobile, Analytics, Cloud, Internet of Things
SMS	Short Message Service
SPRM	Strategy, Planning, Research and related Mechanisms
SSI	Semi-structured interview
SSOT	Single Source of Truth
SST	Sense, Seize, Transform
SQL	Structured Query Language
T4A	Text for Adherence
USSD	Unstructured Supplementary Service Data
VHS	Video Home Systems
VOD	Video-On-Demand
VRIN	Valuable, Rare, Inimitable, Non-substitutable
XML	Extensible Mark up Language
YTC	You Tube Channel