

Effect of Technological Capabilities on Transient Competitive Advantage among Hospitals in Kenya

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Abstract

This research aimed to address a significant gap by empirically examining the link between technological capabilities and transient competitive advantage, a topic largely overlooked in the Kenyan healthcare sector. The study combined descriptive and correlational research designs. The target population comprised 476 top managers of private hospitals, with a calculated sample size of 247. Probability sampling techniques, including stratified random sampling were used in determining the sample participation per hospital. Data collection was then done using questionnaire guide. Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) were used to analyse the relationship between technological capabilities and transient competitive advantages. Results indicate a 84.6% response rate, revealing variations in private hospitals' transient competitive advantage and technological capabilities. The validity and reliability tests demonstrate a satisfactory assessment of the data collection instruments. The SEM analysis reveals a significant positive impact of technological capabilities on transient competitive advantage (path coefficient = 0.943). The study concludes that technological capabilities are pivotal in shaping transient competitive advantage in Kenyan private hospitals, emphasizing the need for strategic investments in technology, partnerships, innovation, and a market-oriented approach. The study recommends healthcare practitioners to invest in strategic technology investments, partnerships, foster innovation, and a market-oriented approach for continuous adaptation.

Keywords: Technological capabilities, Innovation, Transient Competitive Advantage, Healthcare, Hospital, Efficiency

Introduction

For the last twenty years the private healthcare sector in Kenya has shown significant growth and is considered one of the most developed and dynamic in Sub-Saharan Africa (Arale & Kiruthu, 2019). According to Kenya Institute for Public Policy Research and Analysis, private hospitals in Kenya have grown by 17% over the last decade. Potential factors contributing to this growth include: the lack of quality in public health services, the introduction of user fees in the public facilities and health sector reforms that eased the licensing and regulation of private healthcare providers allowing public sector staff to work in the private sector as well (Nzioka, 2017).

Technological capabilities, a crucial facet of organizational capabilities, has been taunted by several researchers (Kiseli, Senaji & Eng, 2016; Buhasho, 2018; Mardani et al., 2018) to play a pivotal role in enhancing competitive advantages. Defined as a firm's ability to perform technical activities, develop new products and processes, and technological knowledge, technological capabilities are instrumental in improving organizational efficiency

(Guerra & Camargo, 2016). In the contemporary business landscape, technological advancements constantly present both challenges and opportunities for product creation, making technological capability a key determinant of competitive advantage.

The continuous process of technological transformation involves absorbing or developing technical information to acquire external inputs, build skills, and translate knowledge into innovation (Botes & Pretorius, 2020). In a high-tech environment, firms can gain a transient competitive edge through technological capabilities, which allow them to detect and respond to changes swiftly. The ability to innovate technologically is considered the key to winning transient advantage, emphasizing the dynamic nature of technology and the need for agility in response (West, 2013; Botes & Pretorius, 2020). Leavy (2014) emphasizes the importance of making innovation an everyday proficiency as a core capability for gaining transient advantage. In this context, firms must not only possess technological capabilities but also be agile enough to leverage them effectively in the face of evolving market conditions. The goal is to build and sustain a rich and dynamic portfolio of transient advantages, recognizing that sustainability of competitive advantages is increasingly challenged by rapid technological changes (West, 2013).

Kenya's healthcare industry, like many others, is witnessing a surge in technological innovations that can improve service delivery, patient care, and overall operational efficiency (Nzioka, 2017). Private hospitals must invest in and harness technological capabilities to stay ahead in the dynamic healthcare environment (Blanken & Dewulf, 2018). However, the research highlights that low levels of technology and innovation hinder the attainment of transient advantage in Kenyan private hospitals (Arale & Kiruthu, 2019). This underscores the importance of not only possessing technological capabilities but also being able to adapt and innovate continuously. The ability to integrate technological advancements into everyday operations can provide private hospitals with a competitive edge that is both dynamic and sustainable (Botes & Pretorius, 2020). To achieve transient advantage through technological capabilities, firms need to focus on innovation processes that go beyond mere adoption (Botes & Pretorius, 2020). This includes the reconfiguration of organizational structures, resource allocation to promote deftness, organizing around opportunities, building innovation proficiency, and fostering external world leadership and mindset focus (McGrath, 2013). The organizations' leadership mindsets must change, emphasizing the importance of building a knowledge-sharing culture to capitalize on technological advancements (Muneer, 2019).

Several studies have been conducted in relation to organization capabilities and sustainable competitive advantage in Kenya and other countries. For example, Jabrullah et al. (2017) studied on health care planning in selected developing countries. The study established that developing countries have challenges in operations in the healthcare sector. Douglas and Ryman (2013) conducted a study on understanding competitive advantage in the public healthcare sector evaluating strategic competencies. Findings were that strategic competencies have not been actualized in the public sector. Arale and Kiruthu (2019) studied the effect of devolution on the performance of human resource function in health sector in Garissa County. The findings established that devolution has negatively affected human resource in health sector. Researchers such as Guerra and Camargo (2016), Pessima and Dietz (2019), and Salgado et al. (2022) have advanced the concept of transient competitive advantages, shedding light on their significance in modern markets. However, the relationship between technological capabilities and TCA remains significantly understudied in the Kenyan healthcare sector. In particular, there is a lack of empirical research investigating the extent to which Kenyan private hospitals deploy transient competitive advantages, which aspects of transient advantages they prioritize, and how technological capabilities may affect the transient advantages.

Methodology

The study employed use of cross-sectional research design combining elements of descriptive research and correlational research for comprehensive analysis. The target population of this study was 476 private hospitals’ top managers who are considered crucial in planning and managing the hospital resources. These 476 private hospitals were selected on the basis that they have been certified and licensed by Kenya Medical and Dentists Practitioners Council, which is body corporate with separate legal identity. The sample size was calculated using the formula proposed by Yamane (1967), taking into account a 5 percent error rate. The sample size obtained was 247, and this number was distributed proportionally across the three hospital levels (Levels IV, V, and VI) based on the population of in-charge managers within each tier. Primary data was gathered through a questionnaire guide, utilizing closed-ended questions with responses restricted to a five-point Likert scale for uniformity. The Likert scale ranged from 1 to 5, signifying varying degrees of disagreement to agreement.

To facilitate data analysis, the collected data underwent preparation, coding, and entry into the SPSS version 26 data analysis program. The study employed Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM), using the Analysis of Moment Structures (AMOS) version 23. The study proposed model fit indices, including Goodness-of-Fit Index (GFI), Adjusted GFI (AGFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI), to determine the overall acceptability of the model. Absolute fit indices (GFI, AGFI, RMSEA) values within specified ranges indicated well-fitting models, while CFI values greater than 0.90 suggested a reasonably good fit. The selection of these fit indices aimed to provide a comprehensive evaluation of the proposed model (Henseler et al., 2015). Structural Equation Modelling (SEM) was used to generate inferences and test the study hypotheses. The following SEM equation model was employed:

$$TCA = \beta_0 + \beta_1 TC + \varepsilon \dots \dots \dots (1)$$

Where: *TCA* = Transient competitive advantage, *TC* = Technological capabilities, β_i (*i* = 0, 1) = Beta coefficients, ε = Error term.

Results

Response Rate

Table 1 shows that in total, across all hospital levels, 247 surveys were administered, and 209 surveys were returned, resulting in an overall response rate of 84.6%.

Table 1 Response Rate

Hospital Level	Administered	Returned	Response rate
Level IV	223	199	89.2
Level V	23	10	43.5
Level VI	1	0	0
Totals	247	209	84.6

Descriptive Statistics

Table 2 provides descriptive statistics for the items related to Transient Competitive Advantage (TCA). The mean values range from 3.2 to 4, with an aggregate mean of 3.52. The standard deviations for all items are relatively range from 1.1 to 1.6 showing that the responses per item varied. The higher the mean value, the more positively the respondents rated the corresponding item. Thus, private hospitals generally exhibits positive attributes related to recognizing changes in the market and health sector, adapting to changes,

reorganizing itself, being aware of trends, having the right skills and personnel, efficient resource allocation, and innovation.

Table 2. Descriptive Statistics for Transient Competitive Advantage

	Mean	Std
Our hospital is able to recognize changes in the market and health sector.	3.2	1.5
Our hospital is able to apply itself in line with the changes.	3.5	1.4
Our hospital is able to immediately reorganize itself when faced with changes in the business environment.	3.5	1.5
Our hospital leaders and managers are aware of the current trends.	3.4	1.4
Our hospital is endowed with the right skills and personnel	3.4	1.4
Our hospital is agile enough to allow efficient resource allocation and adaptation to change.	3.6	1.2
Our hospital organizes itself around the available opportunities.	3.4	1.4
Our hospital proactively removes obsolete resources in competitive term	3.5	1.3
Our hospital budgets in continuous rapid cycles	4	1.1
Our hospital managers understand what opportunities present advantages to the business.	3.6	1.4
Our hospital managers question the established traditions and conventions in the sector.	3.5	1.4
Our hospital managers search for challenges and are attentive to change	3.5	1.3
Our hospital leadership is centered on options and discoveries.	3.5	1.4
Our hospital leadership is open to challenges and comments from employees and customers and allows feedback flows.	3.5	1.3
Our hospital upholds professionally managed innovations	3.4	1.4
Our hospital allows new routines	3.5	1.2
Our hospital has dedicated resources for innovation	3.5	1.4
Our hospital makes learning-based decisions	4	1.1
Our hospital considers innovation as the core process/activity.	3.6	1.4
Our hospital terminates existing advantages frequently and systematically.	3.4	1.4
Our hospital abandons consolidated advantages for new one.	3.5	1.6
Our hospital considers the lost advantages as a way of freeing-up resources for new advantages rather than lost glory	3.5	1.4
Our hospital considers disengaging from old advantages as normal cycle business.	3.5	1.4
Aggregate	3.52	1.36

Table 3 presents the descriptive statistics for the items related to technological capabilities. The mean values range from 3.4 to 4, with an aggregate mean of 3.7. The standard deviations for most items are consistent at 1.4, except for three items with standard deviations of 1.1 and one item with a standard deviation of 1.2. Based on these statistics, respondents generally perceive the organization to have positive technological capabilities. The mean values indicate that the organization effectively uses information and communication technology (ICT), adopts technology for various purposes such as developing new products and processes, serving clients efficiently, negotiating with suppliers, and leading technological change in the industry.

Table 3. Descriptive Statistics for Technological Capabilities

	Mean	Std
Our organization has an effective reporting ICT system	3.5	1.4
Adoption of technology has led to the development of new services, new functions, formation of new alliances	3.5	1.4
Our organization uses distribution technology to manage client data	3.5	1.4
Our organization is able to develop new products and processes without struggle	3.6	1.4
Our organization is able to use technology to efficiently serve our clients at the lowest in the industry	4	1.1
We have information technology better than our competitors	3.9	1.2
Our organization has adopted collaborative technologies	3.4	1.4
Our organization's communication has improved since adopting collaborative technologies	3.5	1.4
Our staff are able to communicate and perform tasks on-site and off-site since adoption of collaborative technologies	3.5	1.4
Our staff teams are able to coordinate tasks with minimal conflict since adoption of collaborative technologies	3.4	1.4
Documentation in our organization has improved with the adoption of collaborative technologies	3.9	1.1
We use technological tools to negotiate with suppliers	4	1.1
Our organization is able to employ and develop a high technology for its product	3.8	1.1
Employees in our organization has high technological skills	3.8	1.3
Adoption of technology has cultivated organizational capabilities that enable our firm to outperform its competitors	3.9	1.4
Our organization is able to lead and maintain technological change in the industry	3.8	1.3
We have qualified personnel to handle ICT	3.8	1.3
We use ICT for decision making	3.8	1.4
Aggregate	3.7	1.3

Validity and Reliability Test

Table 4. Validity and Reliability Tests

	AVE	TCA	TC	Cronbach α	CR
Transient Competitive Advantage	0.710	0.843		0.974	0.873
Technological Capabilities	0.637	0.802	0.798	0.869	0.924

Table 4 shows the inter-construct correlations and the square-root AVE on the diagonal for all the constructs. The bolded values are greater than all other values within that row or column, which indicates that the model has no discriminant validity concerns. High values of the square of AVE (generally considered to be 0.5 or higher) indicate that the latent construct is well-represented by the observed indicators. For transient competitive advantage 1 item was dropped, while for technological capabilities 5 items were dropped due to poor factor loading and cross-loading. The values of Cronbach Alpha are 0.974 and 0.869 supporting the scale reliability since any value greater than 0.7 is deemed reliable (Hair et al., 2014). Surucu and Maslakci (2020) also suggest that construct reliability (CR) should be reported and all the values are greater than 0.8 further demonstrating reliability.

Measurement Model Goodness of Fit

As illustrated in Table 5 the model achieved goodness of fit supporting the measurement model, except for Chi-square. Comparative Fit Index (CFI) and Root Mean Square Error (RMSEA) of Approximation, take more factors into account, such as the complexity of the model and the amount of data (Hair et al., 2020). Additionally, the full measurement model exhibits good parsimony, as indicated by a Parsimony Comparative Fit Index (PCFI) value of 0.79, further supporting the factorial validity.

Table 5. Measurement Model Goodness of Fit

GoF Indices	Value	Decision
CMIN/DF	1.958	The requirement is CMIN/DF <2. Hence the model is fit.
RMSEA	0.06	The recommended value is < 0.08. Hence the model is fit.
CFI	0.918	The recommended value is > 0.9. Hence the model is fit.
TLI	0.905	The recommended value is > 0.9. Hence the model is fit.
PCFI	0.790	PCFI should be greater than 0.5. Hence the model is fit.

Structural Equation Model Results

Table 6 shows the SEM results between technological capabilities and transient competitive advantages. The results show that the model is significant as depicted by Chi-square of 1077.349 and the corresponding p-value of 0.000. The path coefficient of 0.943 also indicates that technological capabilities have positive and significant effect on transient competitive advantage. This means that if technological capabilities increase by one standard deviation,

the transient competitive advantages of private hospitals in Kenya increases by 0.943 standard deviations. Thus, the study rejects the null hypothesis and establishes that there is statistically significant influence of technological capabilities on transient competitive advantage of private hospitals in Kenya. The optimal regression model is as shown in equation 4.1.

$$TCA = 0.714 + 0.943TC + \varepsilon \quad (4.1)$$

This suggests that private hospitals in Kenya can enhance their transient competitive advantages by focusing on improving their technological capabilities. Embracing and leveraging technological advancements, innovations, and tools within the healthcare sector can lead to increased competitiveness and adaptability in a rapidly evolving market. Private hospitals that invest in technological infrastructure, digital solutions, and efficient healthcare practices are more likely to stay ahead in the healthcare industry, catering to changing patient needs and market dynamics.

Table 6. SEM Results

Path		Estimate	S.E.	C.R.	P Label	Path Coef.
TC	→ TCA	2.929	0.886	3.3059	***	0.943
Intercept	→ TCA	0.714	0.077	10.033	***	
Squared Multiple Correlations		0.79				
Chi-square		1077.349 (0.000) ***				

*Where TC is Technological capabilities, TCA is transient competitive advantage, *** is significant at 0.1% significant level, ** is significant at 0.5% significant level and * is significant at 1% significant level. N = 209.*

Discussion

From descriptive statistical analysis, some private hospitals have high abilities and are better placed to utilize transient competitive advantages given their ability to adapt to changes, allocate resources efficiently, and foster innovation. However, other private hospitals lag behind and have low levels of transient competitive advantage. This variation in levels of transient competitive advantages could have been influenced by the level of technological capabilities of private hospitals. Indeed, the descriptive statistics revealed that while some private hospitals have high levels of technological capabilities, others have medium and others low levels of technological capabilities. Technology plays a pivotal role in patient care, data management, and operational efficiency and ultimately transient competitive advantages. Therefore, it could be possible that this variation in technological capabilities is causing variations in transient competitive advantage.

The path coefficient of 0.943 confirms the positive and significant impact of technological capabilities on transient competitive advantage, aligning with the TC theory and existing literature. This influence stems from several factors. Firstly, technological capabilities enhance hospitals' operational efficiency, utilizing advanced technologies like electronic health records and automated systems. This efficiency enables quick responses to market demands, providing a competitive edge. Secondly, technology fosters innovation, attracting patients with cutting-edge healthcare options and differentiating hospitals from competitors. Additionally, technological capabilities improve communication and collaboration, promoting better decision-making and teamwork. Lastly, technology enables hospitals to

adapt swiftly to the evolving healthcare landscape, staying ahead of competition and maintaining a competitive advantage.

The finding is heavily supported by the literature. The studies by Ahmad (2015) and Buhasho (2018) emphasize the importance of adopting business intelligence technologies and integrating them into organizational capabilities to enhance competitive advantage. Additionally, the research by Ramadan et al. (2020) highlights the positive impact of big data analytics on innovation capabilities and strategic competitive advantage. The study by Kitsios and Kamariotou (2018) emphasize the significance of knowledge application and decision support systems in improving organizational performance and profitability. Moreover, the study by Kiseli et al. (2016) in the Kenyan hospitality industry further supports the role of knowledge management systems in achieving competitive advantage. Although the specific contexts and sectors differ across the reviewed studies, the collective findings provide strong support for the relationship between technological capabilities, knowledge application, and transient competitive advantage.

Conclusion

The study found that private hospitals in Kenya have varied technological capabilities and transient competitive advantages. Therefore, while some hospitals appreciated and have forged technological capabilities, some have this dynamic capability, while others have not. From the correlation and SEM analysis, it is evident that the private hospitals with high levels of technological capabilities, also have transient competitive advantages. The study therefore concludes that technological capabilities are beneficial to transient competitive advantages of private hospitals in Kenya. Additionally, technological capabilities play a crucial role in shaping the transient competitive advantage of private hospitals in Kenya. The findings however highlight that not all private hospitals are equally positioned to harness transient competitive advantages, and this variation can be attributed to differing levels of technological capabilities. Technology is pivotal in healthcare, impacting patient care, data management, and operational efficiency. Hospitals with high technological capabilities leverage advanced tools and systems to streamline processes, reduce errors, and enhance overall productivity. This enables them to deliver services more efficiently and respond promptly to changing market demands, ultimately achieving a competitive advantage.

Recommendations

From the foregoing, we make several practical recommendations for enhancing transient competitive advantage in private hospitals in Kenya.

- i. Strategic investments in technology, including electronic health records, telemedicine, and digital communication tools, can significantly improve operational efficiency and patient care delivery thus should be widely adopted.
- ii. The private healthcare hospitals may form strategic partnerships with technology vendors, research institutions, and healthcare providers enabling knowledge exchange and shared resources through technology integration.
- iii. There is need to foster a culture of innovation through committees, brainstorming sessions, and resource support in order to encourage staff to explore and implement innovative ideas.
- iv. Lastly, private hospitals should adopt a market-oriented approach, continuously monitoring market trends, patient needs, and competitors' activities to proactively adjust strategies and offerings, ensuring a sustained competitive edge in the healthcare industry.

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Conflict of Interest

We want to clarify that there are no actual, potential, or perceived conflicts of interest related to this document. Our role as authors is primarily to disseminate scholarly materials to researchers, maintaining a high degree of objectivity and integrity.

References

- Ahmad, A. (2015). Business intelligence for sustainable competitive advantage. *Advances in Business Marketing and Purchasing*, 3-220. <https://repo.uum.edu.my/id/eprint/18647>
- Arale, H. A., & Kiruthu, F. (2019). Effect of devolution on the performance of human resource function in health sector in Kenya: The case of Garissa County. *International Journal of Current Aspects*, 3(7), 58-70.
- Blanken, A., & Dewulf, G. (2018). PPPs in health: Static or dynamic? *Australian Journal of Public Administration*, 69, S35-S47. <https://doi.org/10.1111/j.1467-8500.2009.00656.x>
- Botes, M., & Pretorius, M. (2020). Exploring management perceptions of competitive versus transient advantage. *Journal of Contemporary Management*, 17(1), 41-63. <https://doi.org/10.35683/jcm19052.55>
- Buhasho, E. (2018). Business intelligence, organizational capability, complementary resources and firm performance. *International Journal of Economics, Commerce and Management*, 6(12), 1-11.
- Douglas, T.J. & Ryman, J. A., (2013). Understanding competitive advantage in the general hospital industry: evaluating strategic competencies in developing countries. *Strategic Management Journal*, 24 (7), 333-347.
- Guerra, R., & Camargo, M. (2016). The role of technological capability in the internationalization of the company and new product success: a systematic literature review. *Internext*, 11(1), 49.
- Hair, J. F., Howard, M., & Nitzi, C.(2014). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research* 109(5–6), 101-110. DOI:[10.1016/j.jbusres.2019.11.069](https://doi.org/10.1016/j.jbusres.2019.11.069)
- Hair, J., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/eb-10-2013-0128>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
- Jabrullah, A. H., Noor A, S., Mesk, Z., Rosliza, A. M., & Juni, M. H. (2017). Health care planning in selected developing countries. *International Journal of Public Health and Clinical Sciences*, 4(3), 23-34.
- Kiseli, J. M., Senaji, T. A., & Eng, R. (2016). Effect of knowledge management capabilities on competitive advantage in the Kenya hospitality industry: The case of five star hotels in Kenya. *International Academic Journal of Human Resource and Business Administration*, 2(2), 106-129.

- Kitsios, F., & Kamariotou, M. (2018). Decision support systems and strategic planning: information technology and SMEs' performance. *International Journal of Decision Support Systems*, 3(1/2), 53. <https://doi.org/10.1504/ijds.2018.094260>
- Leavy, B. (2014). Strategy, organization and leadership in a new “transient-advantage” world. *Strategy & Leadership*, 42(4), 3-13. <https://doi.org/10.1108/sl-05-2014-0038>
- Mardani, A., Nikoosokhan, S., Moradi, M., & Douster, M. (2018). The relationship between knowledge management and innovation performance. *The Journal of High Technology Management Research* 29(1). DOI: [10.1016/j.hitech.2018.04.002](https://doi.org/10.1016/j.hitech.2018.04.002)
- McGrath, R. (2013). Continuous reconfiguration in the transient advantage economy. *Strategy & Leadership*, 41(5), 17-22. <https://doi.org/10.1108/sl-05-2013-0039>
- Muneer, M. (2019). Knowledge sharing is key to win in the transient advantage era. *NHRD Network Journal*, 12(2), 87-96. <https://doi.org/10.1177/2631454119832391>
- Nzioka, M. S. (2017). Strategic management practices adoption and service delivery by the health department of Nairobi City County, Kenya. (*Unpublished Ph.D. Thesis*), Nairobi: University of Nairobi. <http://erepository.uonbi.ac.ke/handle/11295/1027447>.
- Pessima, P. X., & Dietz, J. (2019). Transient competitive advantages: A comprehensive review. *Journal of Family Business Strategy*, 5(1), 105–115. <https://doi.org/10.1016/j.jfbs.2014.01.002>
- Ramadan, M., Shuqqo, H., Qtaishat, L., Asmar, H., & Salah, B. (2020). Sustainable competitive advantage driven by big data analytics and innovation. *Applied Sciences*, 10(19), 6784.
- Salgado, C. C., Aires, R. F., & De Araújo, A. G. (2022). Transient competitive advantage model (TCAM) to analyze companies in the context of transience. *Global Journal of Flexible Systems Management*, 23(2), 185-199. <https://doi.org/10.1007/s40171-021-00296-4>
- Surucu, L., & Maslakci, A. (2020) Validity and reliability in quantitative research. *Business and Management Studies: An International Journal*, 8, 2694-2726. <https://doi.org/10.15295/bmij.v8i3.1540>
- West, J. (2013). Too little, too early: California’s transient advantage in the photovoltaic solar industry. *The Journal of Technology Transfer*, 39(3), 487-501. <https://doi.org/10.1007/s10961-012-9291-6>