**Adoption of e-business as a source of Competitive Advantage. (A case of Private health facilities in ASAL region)**

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ABSTRACT: Initial emphasis on “flattening the curve” of COVID-19 cases by policy makers has reduced the demand for health care and created new costs for the private sector. This has led to a cash crunch, forcing some providers to scale back their businesses and lay off health workers. This has major implications for health systems especially in low- and middle-income countries, where private providers play a major role in delivering health services. The study analyzes the impact of E-Procurement strategies narrowing on Private Healthcare facilities in Samburu and Isiolo counties. The study employed a case study approach for a descriptive research design with a sample population of 71 private Healthcare facilities in Isiolo and Samburu counties. Secondary data sourced from Governmental reports, NGO journals, and past research, analyzed using SPSS (version 26) and presented into frequency distribution tables. The study findings indicated a very strong positive relationship between the independent variables and the dependent variable concluding need for their consideration in effort to improve the competitiveness.

Keywords: e-business, e-procurement, telemedicine, e-learning, competitive advantage

**1.0 INTRODUCTION**

1.1 Background

The initial focus placed by policymakers on "flattening the curve" of COVID-19 (coronavirus) cases has lowered health care demand and generated new private sector costs. This has resulted in a cash crunch that has forced some hospitals to rescale their companies and lay off health workers. Statistics from 12 low- and middle-income countries indicate that stress is especially severe for small and medium-sized businesses, such as solo practitioners, small hospitals, laboratories, and pharmacies, some of which might not survive the crisis without assistance. The financial burden on private health care providers has many main causes: Government laws allow health care facilities to extend elective surgeries and outpatient services often for an unspecified period; due to lockdowns, many patients were unable or unable to access hospitals; private healthcare facilities spend more on personal protective equipment (PPE), isolation capability and materials to treat respiratory diseases, raising their costs; economic instability has diminished insurance coverage and individuals' willingness to pay for healthcare;

As Y. Mburu (2020), states the informal sector accounts for around 80 per cent of jobs in Kenya. Such employees are especially affected by lockout steps that slow down the economy while they operate on a daily basis. Therefore, there is a significant possibility that a substantial part of the Kenyan population would collapse into poverty. Most employees have already been laid off or put on unpaid leave in the formal sector , given that almost all sectors of the economy-especially tourism and horticulture, Kenya 's key foreign exchange sources-have been heavily impacted. It involves careful consideration of the resources required to make it possible for employees to pass it time. Additionally, there is a there is also a real risk of many companies collapsing with an inevitable recession, especially small and medium-sized enterprises whose turnover will have dropped dramatically.

**2.0 The Problem**

Most private health facilities are facing financial and operational challenges as a result of the pandemic. Profits have dipped by over 60%, operations are threatened, there's anxiety within the human resource. They fear delayed salaries, contracting the corona virus. Cases of staff turnover are high, as the government is actively recruiting workers in readiness for the pandemic, hence migration by staff to the government for job security. Absenteeism may occur in the case where staff members are caught up in inter-county lockdown. The supposition that self-managed quarantine is what is needed to manage the spread of Covid-19, does not consider that the shifted landscape has presented a cocktail of challenges for most Kenyans. There are widespread pay-cuts, joblessness, fear, uncertainty, among other issues. This has easily driven people to a mentally unstable place, rife with depression, anxiety, and post-traumatic-stress-disorders. With the rise in such unprecedented issues, there is most definitely a need calling for a novel approach to patient care and the sustainability of private health facilities. Therefore to remain competitive and to maintain profitability, private health facilities have to adopt a contactless system of service delivery, except for instances of emergency or elective procedures. The solution is e-business/e-commerce. Facilities in the ASAL region of Kenya are no exception. The business environment is fast changing, forcing providers to adopt e-business to be competitive.

E-commerce is changing everything and healthcare companies need solutions which they can trust to keep up with the growing e-commerce industry. -- organization has specific requirements, so find a versatile and scalable shipping solution that will relieve your unique pain points, such as protection, time sensitivity, compliance. Telemedicine, e-procurement, and e-learning will provide this.

**3.0 Objectives**

This includes the General and Specific Objectives.

3.1 General Objectives

To investigate the adoption of e-business as a source of Competitive Advantage by Private health facilities in Kenya ASAL region, given the current contactless healthcare service provider as a result of Covid-19.

3.2 Specific objectives

To determine the effect of e-procurement in private health facilities as a competitive advantage.

To assess the effect of telemedicine in private health facilities as a competitive advantage.

To investigate e-learning in private health facilities as a source of competitive advantage.

**4.0 LITERATURE REVIEW**

4.1 Introduction

This chapter begins with the impact of e-business on the usual business processes followed by Theoretical Review, the Empirical Literature Review, and ends with the Conceptualization of e-business benefits and Competitive Advantage.

4.2 The Impact of E-Business on the Usual Business Processes

E-business is also often interpreted in the same way as electronic financial and commercial transactions (Aston and Schwarz, 1992, Cronin, 1994), thereby using the definition of e-business interchangeably with e-commerce. The wider e-business concept description includes all business processes that also involve e-commerce (e.g., Craig, 2000, Graaf, and Muurling, 2003). Tarun & Sritha, (2020) argue that trade on the internet significantly impacts corporate costs and productivity. Because of its simple applications, an online company can be widely accepted. It has an expansive monetary impact, in this way. Electronic commerce offers the ability to purchase and offer items and data on the web, as well as another online benefit. Electronic commerce or cloud business alludes to a broad range of online business activities for products and administrations. Electronic commerce is transforming the commercial core by shifting the action plans of the companies, forming market performers' relationships, and leading to shifts in business structure.

The eBusiness effect literature focuses on the implementation of various e-business solutions and their effects on business processes. Drawing on different research, primary e-business solutions implementation areas may be inward-focused (internal business processes) and outward-oriented (business processes focused on the external environment).

4.3 Theoretical Review.

Notwithstanding years and a substantial amount of theoretical research in the field of strategic management, identifying the word 'competitive advantage' is, at the very least, troublesome. In the contemporary context, Porter invented the word 'competitive advantage' in 1985 (Porter, 1985).

4.3.1 The competitive advantage strategy proposed by Michael Porter; developed by M. Porter (1980, 1998), who stressed the importance of the structure of the business and the operations of the company (as opposed to resources). In the early stages of the development of his competitive advantage strategy, Porter (1980) developed an industry-focused competitive advantage perspective, which was later updated and merged with the firm-focused perspective.

4.3.2 Resource-based view approach on competitive advantage; The Resource-Based View (RBV) takes an 'inside-out' or firm-specific view of why organizations are succeeding or failing in the market place. Valuable, unique, inimitable, and non-replaceable resources (Barney, 1991) allow companies to build and sustain competitive advantages, use those resources and competitive advantages for superior results (Collis and Montgomery, 1995; Grant, 1991; Wernerfelt, 1984). According to RBV, the capabilities of the company also allow some firms to add value in the value chain of customers, develop new products, or expand in the new marketplace. To develop sustainable competitive advantages, the RBV depends on the skills and expertise that exist within the organization.

4.3.3 Market Based View approach on competitive advantage: The market-based view (MBV), alternatively known as the view of market positioning, underlines the role of market conditions in the firm's strategy development. This contrasts with the resource-based view (RBV) that focuses on the resources and capacities of the firm. There was a lively debate about the relative merits of both, in particular the conditions under which one could be preferred to the other. Competitive Strategy is about developing and maintaining a strategic market place. This requires a deep understanding of the company's economic drivers, its essential cost position, its approach to distinguishing itself from its competitors on the market, and its chosen market position in terms of the ability to exploit natural economies of scale and scope. Competitive advantage means offering better value to consumers and generating market efficiency. Competitive strategy is therefore primarily conceived as a positioning of the business in its markets and is thus often referred to as the view of market positioning or the view of the market (MBV). This contrasts the resource-based view (RBV) which focuses on the distinctive nature of the resources and capabilities that are required to underpin and produce a competitive advantage.

**4.4 Empirical Review**

Globally, there are concerted efforts aimed at transforming the access, care delivery, patient experiences, and health outcomes through electronic health (eHealth). Different studies have been conducted, but there are few studies on the implementation of e-payments in developing countries and the health sector in particular.

 Kurtinaityt, (2007) researched e-health; the usage of ICT in developing health care system: a multiple-case study of European countries, Denmark, and Lithuania. The results of the study shown that inadequate previous researches were investigating the e-Health development process. They are also only basics and presentations that countries have developed the health care system, but it has not been structured to examine how the experience could be useful to other countries or even to improve e-Health. Consequently, results in this study research were credible and relevant for all European countries improving their ICT-implementing health care system.

 Tudor et.al (2018 ) studied eLearning's role in health management and in building leadership capacity in the health system. The findings showed no data on the efficacy of e-learning for directing health leadership and capacity management. Data on health leadership and success in managing education is typically sparse and concise, and focuses on learning outcomes. In addition, the literature on the effectiveness of health leadership and education in management is sparse. Using e-learning could help such training by making it more available and tailored.

 Anthony and Mutalemwa (2014) study examined factors affecting the usage of mobile payment systems in Tanzania. The report found that the mobile payment adoption rate was Services between Zantel's (Z-Pesa) subscribers were grown at a relatively low rate, due to different factors which impede the adoption of service, including those perceived as not so easy to use, and service unavailability. The adoption of services Z-Pesa has the potential to be used as a payment method if more payment options, such as paying energy charges, paying school fees, and exchanging funds abroad.

 Mang'ana, 2018 researched Hospitals in Tanzania on Determinants for Effective Implementation of the Electronic Payment System. The age of the Internet's rapid development has seen the explosive growth of electronic payment systems (EPS); therefore, business transactions are increasingly moving from cash-based systems to electronic-based ones. The results indicated that the majority of customers preferred to use EPS, while the desire to use EPS, prior experience of using EPS, and being banked were significant factors affecting both EPS preferences and EPS planned usage.

 Obadha and, al. (2020) in a study; health care purchasing in Kenya: health care provider encounters with capitation and payment systems for service providers. Provider payment mechanisms (PPMs) play a vital role in universal health coverage because of the opportunities they provide for health care providers to provide the services provided, quality and productivity. We set out to explore the experiences of public, private and religious providers in Kenya with capitation and fee-for-service, and defined attributes of PPMs that suppliers considered essential. The results showed that NHIF and private insurers have identified capitation and fee-for - service payments as good sources of revenue as they contributed to providers' overall income.

4.5 Conceptualization of e-business benefits and competitive advantage

**E-Business**

E-Procurement

e-Tendering

e-Sourcing

e-Supply

e-Payment

Telemedicine

Expert diagnosis

e-investigations

E-learning

E-training

On job training

**E-Business**

E-Procurement

e-Tendering

e-Sourcing

e-Supply

e-Payment

Telemedicine

Expert diagnosis

e-investigations

E-learning

E-training

On job training

Cost Leadership:

Best Cost, Low cost,

Profitability

Differentiation;

Product/Service Brand

Quality

Focus: niche markets

Market position/niche

E-Procurement

e-Tendering

e-Sourcing

e-Supply

e-Payment

**COMPETITIVE** **ADVANTAGE**

**INDEPENDENT VARIABLES DEPENDENT VARIABLE**

*Figure 1: Conceptual Framework*

**5.0 RESEARCH METHODOLOGY**

5.1 Introduction

The chapter presents the research methodology adapted: research design, target population, sampling technique, sample size, data collection, and lastly techniques employed to gather and analyze data.

5.2 Research Design and Analysis

Case studies were used as the main approach, as there is a limit to current theories looking at the seldom-discussed topic of e-business contribution to competitive advantage. We used Secondary data from the population of 71 private health facilities allowing the researcher to cover the wider ASAL geographic range. It allowed for larger-scale studies on a small budget and it does not exhaust people's goodwill by re-collecting readily available data and used SPSS to analyze. A case study approach to descriptive design in such situations is useful in generating novel and accurate insights from the phenomenon under study (Eisenhardt and Graebner 2007). Case study research design enables a series of independent studies to be conducted to support or disconfirm our theoretical construction. Besides, the design will be used in contrast to other research designs because of the proximity of the case and easier access to details. As a consequence, the design not only allowed the researcher to measure social issues, problems, or circumstances but also provided space for inductive and deductive reasoning to generalize. The research method, therefore, was used in the analysis to test hypotheses regarding causality between the independent and dependent variables.

Data was coded into SPSS and findings analyzed descriptively and using inferential methods. The descriptive method involved the use of means and standard deviations while inferential analysis used the regression analysis method. Data was presented into frequency distribution tables and graphical presentation.

The multiple linear regression model that aided the analysis was as follows:

Y = α + β1X1 + β2X2 + β3 X3 + β4 X4 + є

Where:

Y = Performance of private health facilities.

X1 = E- Sourcing

X2 = E- Supplier

X3 = E- Tendering

X4 = E- Payment

i. {β1; i = 1, 2, 3, 4} = The coefficients representing the various independent variables also called predictor variables.

ii. Є is the error term.

**6.0 RESULTS AND DISCUSSION**

6.1 Introduction.

This chapter covers the analysis of the data collected. It is divided into research response, information presentation, and presentation of analysis performed and the link between the strategies and performance identified.

6.2. E-Procurement Strategies

The main objective of the study was to establish the e-strategies used by private health facilities in Kenya. The strategies used in the research were e-payment, e tendering, e-supplier, and e sourcing. The strategies presented in the findings on e-sourcing and e-procurement strategy were represented in table 4.4. The survey intended to find out why respondents chose to use an electronic method of procurement, supplier, sourcing, tendering, and payment. The survey tested the opinion of respondents in terms of how often they used online platforms in these practices.

The data were analyzed using mean and standard deviation to find out which option influenced the hospital to use one e-business in e tendering, e-supplier, e-payment, and e-sourcing. Table 3 shows the result of the analysis.

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| Table 1: E-Business Descriptive Analysis |
|  | N | Mean | Std. Deviation |
| E-Tendering | 40 | 2.45 | 1.085 |
| E supplier | 40 | 2.30 | .992 |
| E-Payment Strategy | 40 | 2.65 | 1.001 |
| E-Sourcing Strategy | 40 | 2.62 | 1.079 |
| Valid N (listwise) | 40 |  |  |

6.3 E-Tendering

The E-tendering result showed that the majority of hospitals received and evaluates offers using the internet. This makes tendering through the internet (e tendering) preferred. This is indicated by the mean of 2.45 and a standard deviation of 1.085. Similarly, the majority of hospitals used e-supplier due to offers given through the internet (Table 2).

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| Table 2: E Tendering |
|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Private health care facilities provide an online portal for a network of eligible real-time suppliers. | 11 | 22.4 | 27.5 | 27.5 |
| Private hospital firm collects and reviews suppliers' deals through an internet-based programme. | 7 | 14.3 | 17.5 | 45.0 |
| Private hospitals use an online system where suppliers react once when placing bids | 15 | 30.6 | 37.5 | 82.5 |
| The private hospitals use 30 minutes to one hour during the bidding process  | 7 | 14.3 | 17.5 | 100.0 |
| Total | 40 | 81.6 | 100.0 |  |
| Missing | System | 9 | 18.4 |  |  |
| Total | 49 | 100.0 |  |  |

6.4 E-Payment

The mean for e payment was 2.65 indicating that the majority of respondents stated that they used e payment for the ease in response by suppliers when bidding online. The response by suppliers makes it easy for the hospitals to pay for products they have bought online. The standard deviation of 0.992 indicates that responses did not move away from the average (Table 3).

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| --- |
| Table 3: E Payment |
|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Private health care facilities use e-sourcing to cut costs and boost procurement performance. | 6 | 12.2 | 15.0 | 15.0 |
| Private hospitals have online quote requests which minimize lead times. | 11 | 22.4 | 27.5 | 42.5 |
| Private health care facilities have an Internet-based manufacturer evaluation | 14 | 28.6 | 35.0 | 77.5 |
| There is an online portal in the private health facilities where consumers and suppliers work together | 9 | 18.4 | 22.5 | 100.0 |
| Total | 40 | 81.6 | 100.0 |  |
| Missing | System | 9 | 18.4 |  |  |
| Total | 49 | 100.0 |  |  |

6.5 E-supplier

E supplier was another e-procurement strategy used in this research. The results showed that suppliers responded fast when bidding. 30.6 percent stated that they preferred the strategy because of the response from suppliers when bidding. 22.4 percent of respondents stated that they preferred the model for efficiency due to working without human intervention. 20.4 stated that they chose the strategy for improvement in procurement performance while only 4 percent of respondents stated that they preferred the method due to the availability of private hospital online platforms.

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| Table 4: E supplier |
|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Private hospitals pick their suppliers and facilities electronically. | 11 | 22.4 | 27.5 | 27.5 |
| Private health facilities use data online to market their products and enhance the efficiency of the procurement. | 10 | 20.4 | 25.0 | 52.5 |
| Private hospitals use an electronic system where suppliers respond once when placing bids. | 15 | 30.6 | 37.5 | 90.0 |
| Private health facilities provide an online forum for real-time queries for a list of eligible suppliers. | 4 | 8.2 | 10.0 | 100.0 |
| Total | 40 | 81.6 | 100.0 |  |
| Missing | System | 9 | 18.4 |  |  |
| Total | 49 | 100.0 |  |  |

6.6 E Sourcing

E sourcing was also tested in the study. The study established that the strategy was preferred because of reduced cost and improvement of procurement efficiency. The activity had a mean of 2.62 and a standard deviation of 1.079. This indicates that the strategy is also influenced by the ease of bidding to suppliers and the improvement of procurement exercise (Table 5).

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| *Table 5: E Sourcing* |
|  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Private health facilities use e-sourcing to reduce costs and improve efficiency in the procurement process. | 7 | 14.3 | 17.5 | 17.5 |
| Private hospitals have an online request for quotations reducing lead time.  | 12 | 24.5 | 30.0 | 47.5 |
| The private health facilities have an internet-based for evaluation of suppliers  | 10 | 20.4 | 25.0 | 72.5 |
| The private health facilities have an online platform where buyer and suppliers work together  | 11 | 22.4 | 27.5 | 100.0 |
| Total | 40 | 81.6 | 100.0 |  |
| Missing | System | 9 | 18.4 |  |  |
| Total | 49 | 100.0 |  |  |

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| *Table 6: Multiple Regression Analysis* |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |
| R Square Change | F Change | df1 |
| 1 | .269a | .072 | -.034 | .927 | .072 | .681 | 4 |

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| *Table 7: ANOVA Summary* |
| Model | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 2.339 | 4 | .585 | .681 | .610b |
| Residual | 30.061 | 35 | .859 |  |  |
| Total | 32.400 | 39 |  |  |  |

The regression analysis conducted obtained t value and significance level. The research conducted a multiple regression to determine the relationship between the dependent variable and the independent variable. While taking all factors into account, the independent variables and constant at zero, the analyzed data showed that a unit increase in E-tendering leads to a 0.789 increase in hospital performance. While considering that the significance level was 0.05, E-sourcing had a t-value of 0.134 with a significance level of 0.894. The study, therefore, agrees with research conducted by Ansari (2009) that allows companies to use supplier capabilities and operation activities to plan inventory reduction, improving product quality, and smoothing operation.

The findings were in agreement with Walker et al., (2013) that stated that the organizations are likely to benefit from e-business than acting alone. E-business, through e sourcing, reduces waste in the procurement system hence improving the socioeconomic position of private hospitals. Additionally, e-procurement increased the performance of private hospitals. The t value was 1.058 and a level of significance of 0.89.

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| *Table 8: Coefficients results* |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
| B | Std. Error | Beta |
| 1 | (Constant) | 2.191 | .733 |  | 2.988 | .005 |
| E-Tendering | -.112 | .143 | -.134 | -.785 | .438 |
| E supplier | -.090 | .153 | -.098 | -.589 | .559 |
| E-Payment Strategy | .166 | .157 | .182 | 1.058 | .297 |
| E-Sourcing Strategy | .020 | .147 | .023 | .134 | .894 |

**7.0 Conclusion**

The study concluded that e-tendering affects private health facilities in ASAL Kenya. The study's regression coefficients showed that e-tendering had a major positive impact on the competitiveness of private health facilities in Kenya. This implies that rising levels of e-tendering in Kenya would increase performance levels and thereby enhancing competitiveness.

This showed that E-tendering has a strong positive influence on performance. Moreover, the study concluded that e-sourcing affects the efficiency of private health facilities in ASAL Kenya. The study's regression coefficients indicate that e-sourcing has a major positive impact on the competitiveness of private health facilities in ASAL Kenya. This implies that increasing levels of e-sourcing will increase output rates of Kenya's private health facilities in ASAL. This has shown that e-sourcing has a strong positive influence on the performance of private health facilities in ASAL.

Besides, the study concluded that the competitiveness of private health facilities in ASAL Kenya is influenced by E-Supply. The study's regression coefficients showed that E- Supply has a significant positive effect on the competitiveness aspect. This means that increasing levels of E- Supply will increase the output rates of private health facilities. This showed that E- Supply had a significant positive impact on the output of Kenyan private health facilities in ASAL.

Finally, the study concluded that the competitiveness of private health facilities in ASAL Kenya is affected by E-Payment. The study's regression coefficients showed that E-Invoicing has a major positive impact on the competitiveness of private health facilities output in Kenya. This implied that rising levels of E-Payment would increase the performance and thereby competitiveness levels of Kenyan private health facilities in ASAL. This showed that E- Payment had a clear positive impact on the competitiveness of private health facilities in ASAL Kenya.

**8.0 Recommendations and Areas for Further Study**

The study marked a landmark in further work on private procurement in Kenya's private health facilities in ASAL. The findings showed e-procurement influenced private health facilities efficiency to include; e-tendering, e-sourcing, e-supply, and e-payment. Therefore, the current study should be further extended in the future to establish the impact of E-procurement on service delivery and other e-business aspects in Kenyan private health facilities. Different work needs to be carried out on private health facilities in other counties and at public health facilities to assess if the variables investigated can be generalized.

 The beneficial effect of e-business on various business processes was conceptualized based on the literature review. The competitive advantage attributed to e-business solutions was conceptualized as the rise in revenues and/or revenue. The model was developed which relates the positive impact of e-business on nine different business processes and competitive advantage. Although several studies have shown that e-business solutions have a positive effect on different business processes, e-business benefits do not automatically result in improved revenues and/or revenue, so the comparison of e-business value with the competitive advantage should be made with caution.