International Journal of Advanced Engineering and Management Research

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Structured Pre-emptiveness of E-hotels for Improved Performance.

Leah Wamuyu Maringa[1] and Paul Mwangi Maringa[2]

[1]Department of Hospitality and Tourism Management (DHTM), School of Business, Economics and Tourism (SBET), Kenyatta University (KU), P.O Box 43844 – 00100, Nairobi, Kenya,

[2]Department of Architecture & Interior Design (DAID), School of Engineering and Architecture (SEA), Kenyatta University (KU), P.O Box 43844 – 00100, Nairobi, Kenya,

doi.org/10.51505/ijaemr.2025.1205 URL: http://dx.doi.org/10.51505/ijaemr.2025.1205

Received: Apr 06, 2025 Accepted: Apr 14, 2025 Online Published: May 07, 2025

Abstract

A rapidly globalising world has opened up competition beyond prevailing geographic and administration or national boundaries increasingly. Market players must therefore necessarily continuously innovate and adapt to an ever-changing information-based communication drive of the Information and Communication Technology (ICT) revolution, in order to convincingly reach and attract their markets to advantage. The world is now awash with real-time online data streaming of all service offers available to markets at source, which reality compels ICT compliance in service marketing and delivery. Now more than ever before there is a critical need to understand how well aligned hotels are to transacting business while addressing prevailing competition in the pre-emptiveness activity level, using ICT. There is value in determining what improvement in a pre-emptiveness driven service value offer that this technological transition brings about. Pre-emptiveness is viewed in terms of its root functions of strategic planning, sales & marketing, and finally, reservations management. Inquiry ordered hotels into spatial clusters of the dominant tourism circuits, and along the hierarchy of quality as captured in the star rating ranks of 2 to 5 star rated hotels. Structured interview schedule survey instruments that were deep probing by design were relied upon to seek out data in the inquiry. A descriptive, cross sectional sample survey research design guided the inquiry well, and this enabled a comprehensive coverage of the field. It resulted in a rigorous profiling of the disposition of hotels in respect of the activities and functions of interest.

Keywords: Efficiency, Information and Communication Technology, Pre-emptiveness.

1. Introduction

1.1 Introducing the Problem

In today's interconnected world, global trends have a profound impact on every region. The hotel industry, both globally and in Kenya, faces significant challenges in maintaining competitiveness amidst rapidly evolving international competition. The globalization of markets has intensified this pressure, as hotels must continually adapt to stay ahead (Central Bureau of Statistics, 2003, 2005). A key driver of globalization is the Information and Communication Technology (ICT)

Vol. 10, No. 03; 2025

ISSN: 2456-3676

sector. ICT has revolutionized hotel operations by enhancing efficiency in internal processes that rely heavily on information exchange and communication. This transformation is supported by various studies that highlight the role of ICT in improving hotel operations (Hansen & Owen 1995, Buhalis 1997, Buhalis & Earl 1997, Cho & Olsen 1998, NTCMSC 2020, Mwangi & Ngari 2022).

Theoretically, hotels can be viewed as a collection of seven main operational hubs, encapsulated in the Comprehend, Awareness, Prediction, Implementation, Technology Assessment (CAPITA) model (Cho & Olsen 1998). This model emphasizes the competitive advantage that hotels can gain through the strategic application of ICT. By leveraging these technological advancements, hotels can streamline their operations and better compete in the global market. The CAPITA model is used in this study as an idealised abstraction of the hotel. In this respect the hotel is represented as comprising of information flows between its seven basic hubs of activity. These centers of activity are, primary and support work processes, resource management and acquisition functionality, threats response, pre-emptiveness and synergy in hotels.

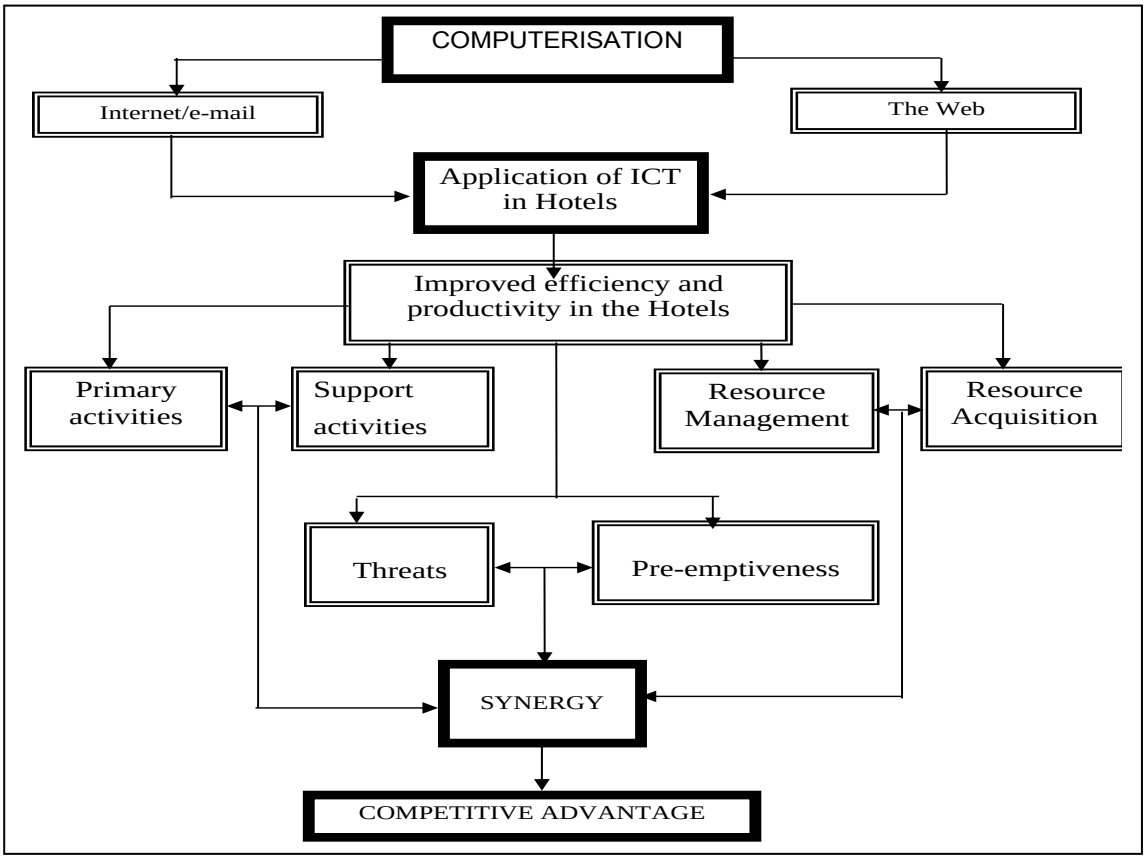


Figure 1: The CAPITA Model of e-hotels and their principle activity hubs. Source: Author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

This CAPITA model presents an assembly of concepts whose collective efficiency relied on communication. It is within these concepts that ICT driven competitive advantage is measured. Improved operations enhance the ability to compete for customers and in so doing boosting competitive advantage in e-hotels. The concepts, their internal subsidiary functions and aspects, and their interrelationships represent traits of competitive advantage in hotels. In this sense, ICT facilitates communication that helps hotels gain competitive advantage. The conceptual framework uses this model and its arrangement of concepts to suggest the manner in which the two variables, e-hotels and competitive advantage relate (Figure 1). The relationships of these concepts and their internal subsidiary functions and aspects are the propositions that need knowledge and inquiry in order to draw out clear directional relationships that guide the improvement of competitive advantage in e-hotels. In order to achieve depth of inquiry, the study selected to concentrate on the one activity hub of pre-emptiveness.

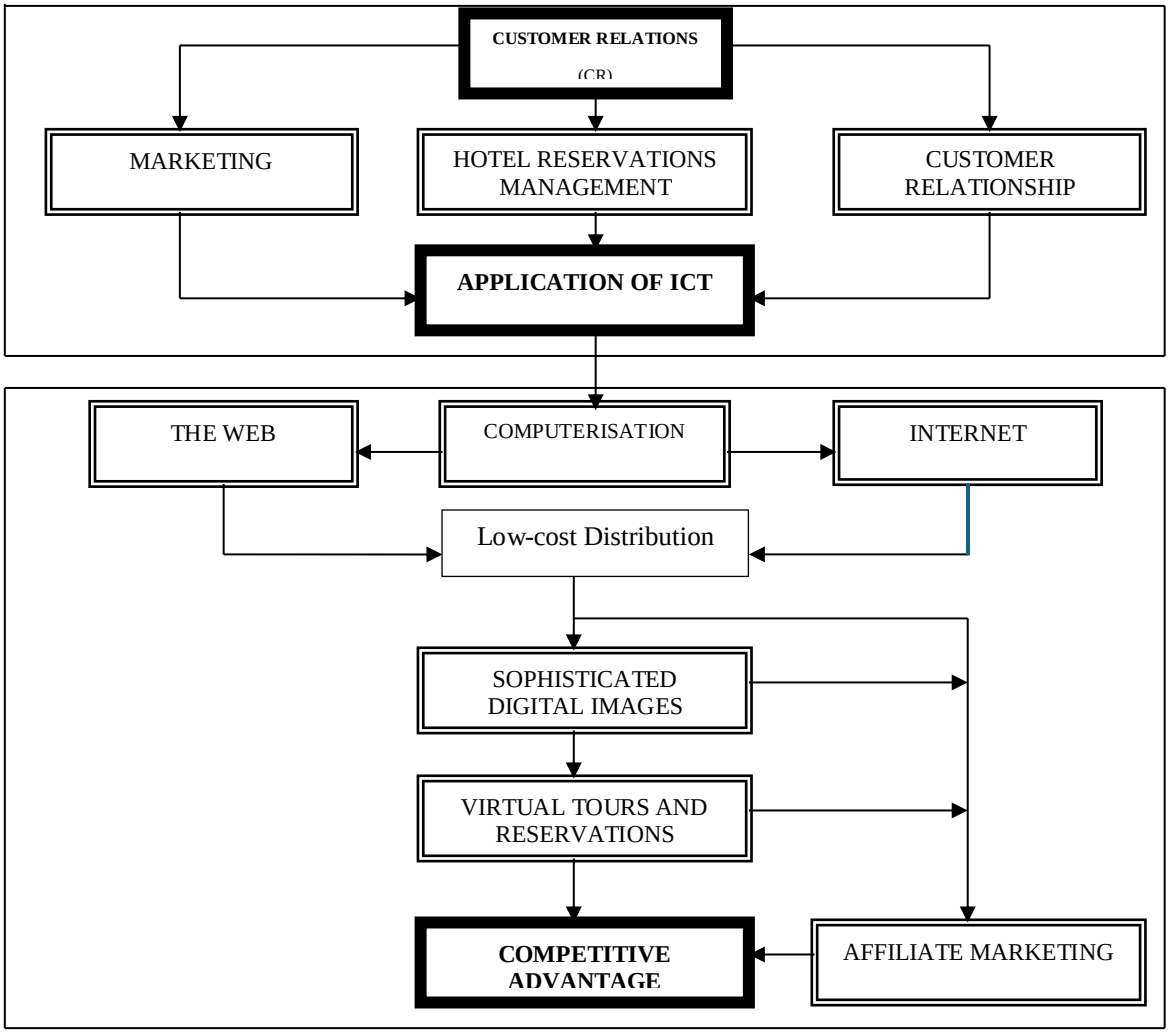


Figure 2: Overall Theoretical Framework. Source: author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

The supporting theoretical framework places this relationship of competitive advantage and Information and Communication Technology within the theoretical confines of Customer Relations - CR (Figure 2). Customer relations is represented here as comprising of Marketing (figure 3), Hotel Reservations Management Systems - HRMS (figure 4), and Customer Relationship Management - CRM (Figures 5). In this theoretical framework, relationship marketing is promoted. It was founded on the inclination of contemporary customer relationship management to seek to create direct bonds of loyalty with customers (Figures 4 & 5). This fosters increased customer choice that was supported by a one-on-one marketing strategy, designed to address individual customer behaviour (Figure 5). A fundamental shift from general segmentation to life-time-value of specific customers was favoured.

The hotel reservations management systems that were featured here fitted into a dual implementation framework or model, which focused on the one hand upon strategic planning and the other on operational initiatives (figure 4). There was an increased reliance on knowledge management that required hotels to raise their intellectual capital. This theoretical framework is included in the ensuing pages for ease of reference.

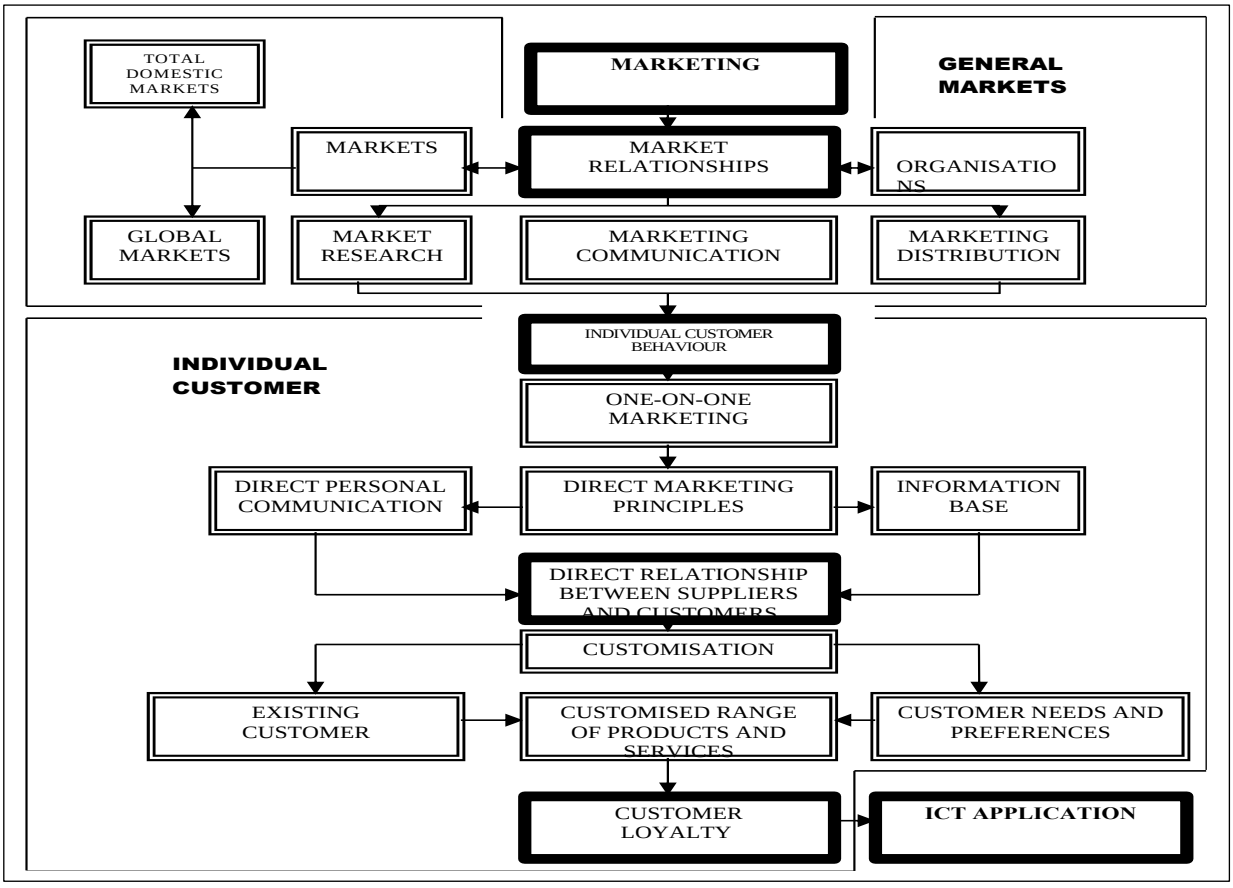


Figure 3: Constituent Theoretical Framework on Marketing. Source: Author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

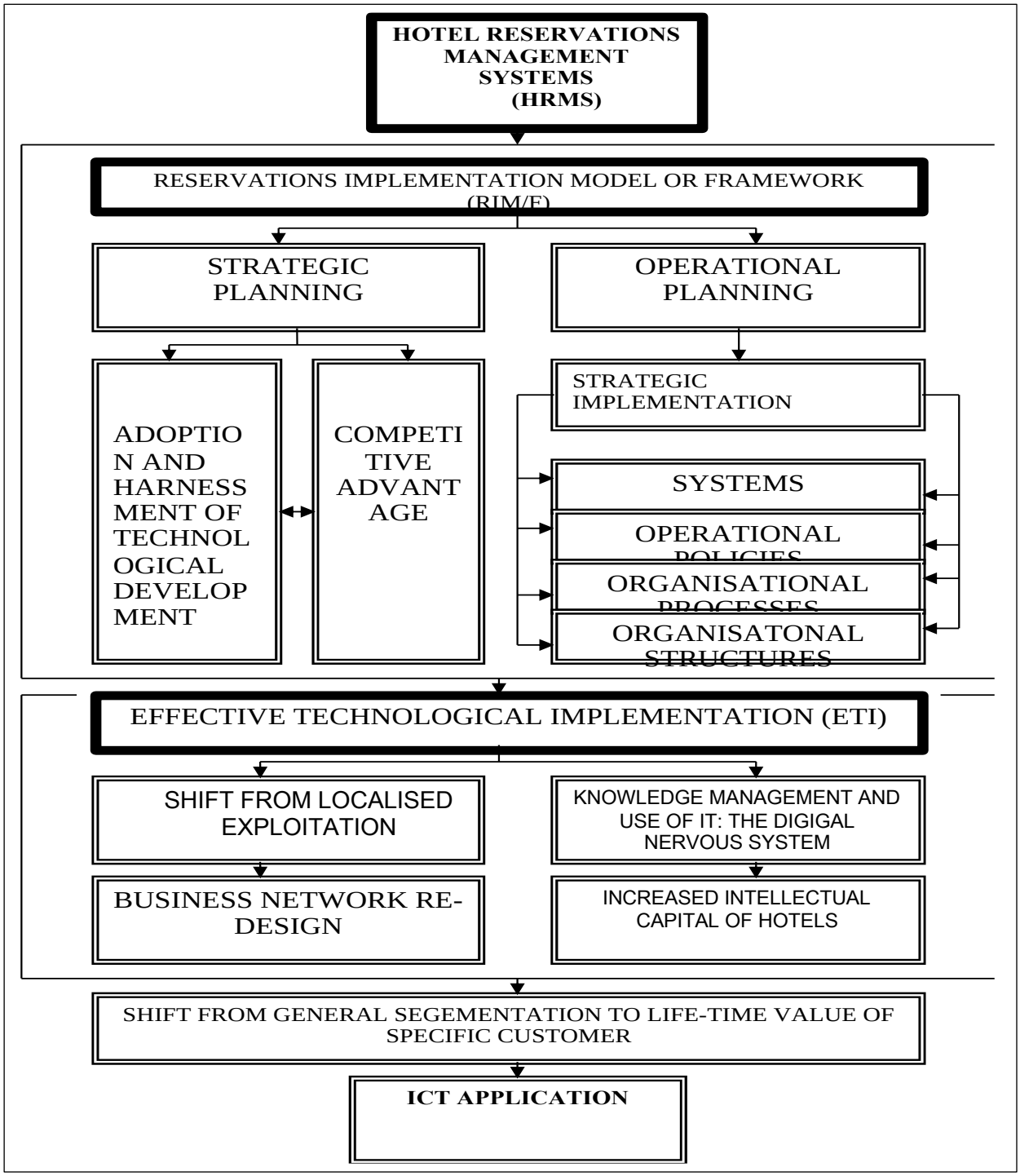


Figure 4: Constituent Theoretical Framework on Hotels Reservations Management Systems (HRMS). Source: Author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

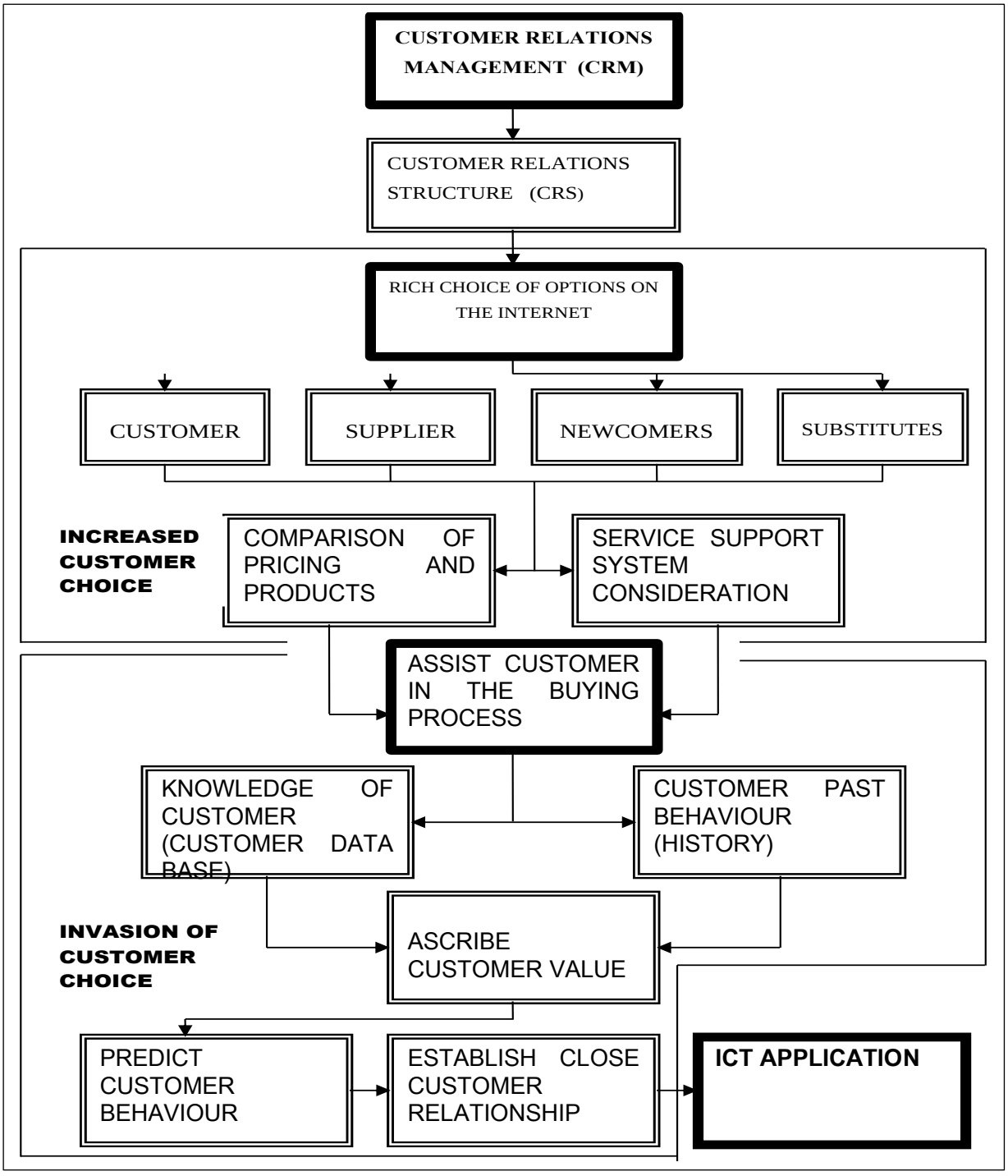


Figure 5:Constitutent Theoretical Framework on Customer Relations Management. Source: author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Hotel competitiveness does not only depend upon ICT. Rather, ICT unifies several other factors to harmonise synergise competitive advantage. Information and Communication Technology plays this critical role on account its ability for linkage, networking and conducting information flows. It links diverse activity hubs of hotels with their customer base in real time. The range of factors of competitiveness in Kenya, include product development and diversification, innovation and branding, creative marketing and pro-active customer engagement, dynamically adapting legal and regulatory framework, visionary, though practical management, a motivated workforce, efficient operations, astute up-to-date financial management and cost leadership, , and quality assurance. are critical factors of for success in market competitiveness for the hotels (Spoerr, 2020; Yego, 2015; Ndubi, 2009). These are articulated here below in brief in order to shed light on their function and requirement for or dependency on essential ICT support.

Information and Communication Technology and is influence on competitive advantage is appropriately chosen for inquiry as it is the common thread that ties all these other factors together. It promotes efficiency of operations and decision making in the interactions within and between activity hubs in hotels.

1.2 Importance of the Problem

Hotels in Kenya face an imminent risk of losing their market share to international competitors unless they adapt to changing technologies (Central Bureau of Statistics, 2003). It is material that over 70% of all hotel patrons in the country are foreign (Central Bureau of Statistics, 2002, 2003). This competition is particularly urgent and important in a world that has moved on into the ICT mold of e- commerce. As a result, most clients are now familiar with this approach to business. A majority of businesses transactions now have integrated ICT into their thinking and processes. It is critical then to determine and measure the forms, levels and orientation of the influence of ICT in hotel operations. It is also important to determine what functions of hotel activities are favourably adapted to ICT, and the extent to which they respond to its influence.

As a start, this interest is best directed towards the seven basic activity levels of e-hotels. These include the primary activity level (also termed the work process), support activities, resource management, resource acquisition, threats, pre-emptiveness, and synergy. The first three have been variously successfully addressed (Maringa & Maringa 2009, 2011). Of particular interest here is the pre-emptiveness activity level of e-hotels. A good understanding of its ICT base would offer useful opportunity to orient hotels towards ICT based growth and improvement of competitiveness. In consequence, hotels would gain relevance to the changed attitudes of a market that is increasingly ICT literate. Knowledge so contrived constitutes a key approach to retaining a competitive edge for e-hotels, in the international marketplace.

There is an expanding body of knowledge on the ICT status of hotels across the country. It is increasing possible to now evolve policy decisions on the ideal spatial locations for intervention (Maringa & Maringa 2009, 2011). To bolster this trend, it is important to carry out a comparative survey of the national scene in order to reveal possible inequalities of endowment. Potentials

Vol. 10, No. 03; 2025

ISSN: 2456-3676

and directions of resolution, as one hotel cluster is matched against another; or one strata of star-rating with another will in this way emerge. The ideal point and scale of ICT based intervention for improved performance can also hereby be identified. They would be well defined spatially and also within the hierarchical grouping of hotels, as well as among the diverse functions of the pre-emptiveness activity level.

1.2.1 Significance of the study

Local hotel operators have much to learn on ICT and the reciprocity of strategic implementation in designed changes for improved competitiveness. Such desired change tends to either stimulated by a revolution in services or in technology (Sigala, Lockwood, Jones, 2001, Kilali 2016, Anser et.al 2020, Gacheke 2023). There is a need to establish relationships between marketing practices and concepts with ICT, especially Internet and the virtual space (Sigala, 2001, Kilali 2016, Anaser et.al 2020, Gacheke 2023). The results of this study will be used to increase the market share of the local hotels especially, at the international level. Hotels will thereby be enabled to maintain standards of communication and marketing and be at pace with international leaders in hospitality and tourism. Hotels, the principal beneficiaries of this research, would in effect experience increased profits, and improved production, while also enjoying better organisation. Kenya as a country would also reflect an expanded revenue base. This would lead to growth in the standards of living, and a reduction in un-employment. Accompanying improvement of infrastructure, and an experience of general development would result. The society would gain from increased cross-cultural interaction fostered an associated rise in number of external visitors. Such interactions when well managed serve to stimulate positive social transformation.

This study promotes progressive improvement in the computerization of hotels, from which will emerge satisfied clients and fulfilled management. A consequential trend towards progress in Internet provision, more local area networks and Wi-Fi, higher computer literacy levels and increased computer use is expected. Further a positive shift towards high levels of booking, high bed occupancy, full banqueting and conferencing and growing food sales should result. This study then has the inherent ability to place the tourism industry in the country, very much at the center of the ongoing ICT revolution. Information and communication technology is in a lot of ways a crucial response to this urgent need of a developing country such as Kenya for increased revenue.

1.2.2 Aims and objectives

This inquiry sought to establish the relationship between e- commerce, and efficiency in hotels. It was specifically keen to determine the effect of the use of ICT on efficiency within the Pre-emptiveness activity level in e-hotels. This objective elicits the following hypothesis, here stated in a testable form as first a relational scientific or null hypothesis, and then alternatively as a research hypothesis:

Vol. 10, No. 03; 2025

ISSN: 2456-3676

H_0 = There is no relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels with respect to the pre-emptiveness activity level or node.

H_1 = There is a relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels with respect to the pre-emptiveness activity level or node.

The study recognised the functions and aspects of the pre-emptiveness activity level of e-hotels. Accordingly, it purposed to develop a hierarchical value of their relative importance, in promoting efficiency of performance in e-hotels. In this manner it intended to confirm the particular functions and aspects where most effect could be attained through the introduction of e-hotels. Interventions that would steer hotels towards improved ICT driven competitive advantage could be guided with accuracy to those areas of a hotel where it most needed.

1.3 Relevant Scholarship

1.3.1. Relationship of ICT with competitive advantage

There is an ongoing contention on the influence of ICT over Competitive Advantage for firms and industry (Cho & Olsen 1998). Some researchers believe it improves Competitive Advantage (McFarlan 1984, Porter 1985, Cho & Olsen 1998), while others disagree (Clemon 1991, Brynjolfsson 1993, Cho & Olsen 1998). This ongoing lack of consensus derives from the issue of differing measures of the impact of Information Technology's on Competitive Advantage. In such measurements there has lacked sufficient reliance on generic indicators of Competitive Advantage. The most commonly indicators include Returns on Investment (ROI), Returns on Sale (ROS), and Net Income (NI) (Cho & Olsen 1998). Clearly these types of indicators react also to other factors in the industry beyond ICT.

A more focused relationship between ICT and Competitive Advantage would derive from the use of the trait approach or construct instrument of measurement rather than one formed out of the rather ambivalent outcome approach or construct (Cho & Olsen 1998). The former relies on seven dimensions, which together convincingly operationalises this measurement (Cho & Olsen 1998). These seven dimensions include, Primary Activity Efficiency, Support Activity Efficiency, Resource Management Functionality, Resource Acquisition Functionality, Threat, Pre-emptiveness, and finally Synergy (Sethi & King 1994, Cho & Olsen 1998). This is by no means the only approach to be attempted so far, in explaining this relationship between ICT and Competitive Advantage. Previous research has emphasised Porter's Framework of Competitive Forces, Competitive Strategy, or the Value Chain Concept (McFarlan 1984, Parsons 1984, Porter & Millar 1985, Cash & Konsynski 1985, Bakos &Treacy 1986, Cho & Olsen 1998). There has also been significant dependency on the Customer Resource Cycle approach (CRC) that identifies how ICT application emphasises customer loyalty as generating increase of Competitive Advantage (Ives & Learmonth 1984, Cho & Olsen 1998).

Whereas these approaches serve well to explain the relationship of ICT and Competitive Advantage, its measurement is not easy. It is this latter concern that has been left to instruments

Vol. 10, No. 03; 2025

ISSN: 2456-3676

that respectively arise or are developed from the two competing constructs of the trait and outcomes approaches (Sethi & King 1994, Cho & Olsen 1998). The outcome approach has significant problems and limitations arising from its reliance on profitability measures, relative market share, and change in profitability, and cash flow (Lieberman & Montgomery 1988, Weil & Olson 1989, Kettinger, Grover, Guha & Segars 1994, Cho & Olsen 1998). This approach has alternatively applied measurement of revenue growth (Weil & Olson 1989, Cho & Olsen 1998), and economic profits as well as positive present value (Lieberman & Montgomery 1988, Cho & Olsen 1998). This measure projects the outcome approach as being aggregate in nature. The actual effects arising out of ICT application are not easily deciphered. There is no clear indication from this approach as to how ICT affects competitive advantage. The approach lacks generalisability (Cho & Olsen 1998).

The Construct of Competitive Advantage Provided by an Information Technology Application (CAPITA) is the measurement instrument of choice (Sethi & King 1994, Cho & Olsen 1998). It is based on the trait approach, which identifies key traits or attitudes of Competitive Advantage while reflecting the concepts already encountered in Porter's Framework of Competitive Forces (FCF), and Ives and Lear month's Customer Resource Life Cycle (CRLC). This construct enjoys the advantages of providing insights into the nature of the influence of ICT on Competitive Advantage. It reveals clearly and in detail the components and sub-components of Competitive Advantage as well as their internal relationships (Sethi & King 1994, Cho & Olsen 1998). Such will be illustrated in form of measurements research questions translated into questionnaire operations.

Reliable up-to-date information is central, to developing efficiency in modern hotels. Information and Communication Technology (ICT) is able to produce and transmit information quickly and accurately, which information can thereafter be used as a basis for management decision- making. To date the local hospitality industry has only modestly utilised ICT in the food and beverage work process aspect of hotels (Muriuki & Tumuti 2024, Kiptanui et.al 2024, Moenga & Rotich 2023). This is in stark contrast with other industries such as retail and banking, which already are using computers as a key resource for competitive and operational analysis. The hospitality industry has instead maintained a singular focus mainly on reservations and finance.

There are relevant, well adapted software in the markets, which are affiliated to Management Information System (MIS). Such software can best be used to control food and beverages. Beverage and food control relies on a large database of information from the purchasing and storage of goods, the delivery of service, and the receipt and control of moneys (Muriuki & Tumuti 2024, Kiptanui et.al 2024, Moenga & Rotich 2023). The main benefits of these software are the speed with which compiled information can be accessed, the accuracy of that data, and the ability to control costs. E-hotels can take useful advantage of such facilities to improve on their efficiency only if they are updated in their ICT systems.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Pre-emptiveness in e-hotels utilises proactive strategies to profile guest needs and in this way anticipate and address them. By so doing retain operational efficiency and stay competitive. They do so by determining guests recreational, business or travel motivations to seek their services (Alonso et.al, 2020; Central Bank of Kenya, 2022; Eldeen, 2023). This helps hotels to roll out well-customised services. To attain such a vantage position, information is singularly important. It is best obtained through proactive communication through with real-time information sharing with guests in the reservations loop and also while in residence (Alonso et.al 2020, Central Bank of Kenya 2022, Eldeen 2023). Updating guests of a holistic in-residence and local environment service offers is a principle pillar of pre-emptiveness.

Table 1: Conceptual framework of a Total Quality Management arrangement for and ICT driven operational efficiency of pre-emptiveness.

ICT DRIVEN TOTAL QUALITY MANAGEMENT		ASPECTS OF PRE-EMPTIVENESS			
		INFLUENCING THE STANDARDS AND PRACTICES (creativity) IN THE INDUSTRY (virtual tours)	**ACHIEVING UNIQUE ACCESS TO CHANNELS (affiliate marketing)**	**FORCING LESS FAVOURABLE MARKET POSTURE ON COMPEITORS (help out do a competitor)**	**OFFERING BARRIERS AGAINST IMITATIONS**
FUNCTIONS OF PRE-EMPTIVENESS	Strategic planning **(AICAEU)**	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage
	Marketing and sales **(AICAEV)**	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage
	Reservations Management **(AICAEW)**	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage	Change interface for competitive advantage

Source: Author[1], 2005.

This relies critically on a holistic knowledge of affiliate local opportunities and the establishment of dynamic strategic partnerships complementary service providers. A resulting offer of exclusive packages would result to great advantage. It is also necessary to maintain an efficient, friendly, easily accessible, interactive digital footprint. This should showcase attractive features and enabling smooth inquiry that translates into bookings (Alonso et.al 2020, Central Bank of Kenya 2022, Eldeen 2023).

Pre-emptive risk management that recognises market cycles and seasons promotes essential operational efficiency in the disposal of necessary supporting resources. Effective e-hotels

Vol. 10, No. 03; 2025

ISSN: 2456-3676

purpose to embrace all round innovativeness in services, facilities, technologies and cuisine. They also position themselves to be distinctively adaptable in order to accommodate the diversity of guest cultures and social pre-directions. Such seminal pre-emptive dispositions in e-hotels augments operational efficiency that occasions a resulting amplified guest satisfaction. (Alonso et.al 2020, Central Bank of Kenya 2022, Eldeen 2023). It improves the competitive advantage of an e-hotel, empowering to fend off its peers, thereby gaining an edge in widening and firming up its customer base amidst in a dynamically transforming market. A contemporary well-crafted ICT arrangement, supporting the pre-emptiveness activity node in an e-hotel, can decisively enhance efficiency of operations and service delivery.

This basic information nature of the pre-emptiveness activity level is captured in a conceptual framework featured above in figure 1. It can best be understood when looked at in its three constituent functions of strategic planning, sales & marketing, and reservations management. A further reflection on its surrogate four aspects, development of standards & practices in the industry, achieving unique access to channels (affiliate marketing), forcing unfavourable market postures on competitors and mounting barriers against imitations would complete such contemplation. The inherent nature of information and its transmission as it supports service delivery in this activity node is an essential bedrock of this inquiry. Pre-emptiveness, reviewed at the suggested less aggregated level, improves the clarity of comprehension about the irreplaceable place and value of ICT in this activity level of e-hotels. How these concerns are reliably and validly interrogated in the field in a structured, repeatable manner is the subject matter of the next section on methods.

2. Method

Hotels in the country are arranged into the Nairobi, Coastal, and Nature Reserves clusters. In each of these clusters, thirty of 2 to 5 star-rated hotel samples are selected representatively, using a complex random sampling procedure (Lapin 1981, Kothari 1996, Nachmias & Nachmias 1996, Mugenda & Mugenda 1999, Wu & Thompson 2020, Birrell 2020). Data was measured and obtained through pre-coded and structured interview schedules (Miller 1991, Emory & Cooper 1995, Shaughnessy & Zechmeister 1997, Taherdoost 2021, Mohajan 2020). The respondents were clustered in hotels that were selected using stratified (star rating), cluster random sampling (the Nairobi, Coast and Nature Reserves clusters), guided by the Tippet's table of random numbers.

2.1 Study area

The study is carried out in the three principle tour circuits in Kenya, underscored here below These were the town hotels of Nairobi city the capital of Kenya and a primate city, which dominates the Eastern and Central African region; the vacation hotels in the lucrative maritime recreational coastal strip of Kenya; and Lodges within the Nature Reserves, home to the African popular big game. Together they represented the principle tourist destinations with 91% of the 2-5 star-rated hotels in Kenya.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

2.2 Research design

Sample survey design was the primary research design that was adopted to collect quantified data from the wide field of the three principle tour circuits in Kenya. Deep probing questions were used to supply information to solve the specific, immediate, and concrete problem of a declining international market share in Kenyan hotels.

2.3 Sample design

The set of objects technically termed the universe or population (Kothari 1996) studied was finite, being the comprehensive complement of all classified hotels in the country. This was the accessible population or sampling frame of 2, 3, 4 and 5 star hotels in the country, that fell within the principal tourists circuits in the country, the Nairobi, Kenyan Coast and the Nature reserves tour circuits (Table 2).

Table 2: Distribution of star-rated hotels in Kenya for June 2003.

LOCATION		NUMBER	%	
ALL COUNTRY	**1-5 Star Hotel**	**163**	**100%**	%
	2-5 Star Hotel	**142**	**87%**	
NAIROBI, COASTAL, AND NATURE RESERVE CIRCUITS	**1-5 Star Hotel**	**134**	**82%**	**100%**
	2-5 Star Hotel	**129**	**79%**	**96%**

Numbers extracted from the Kenya Gazette No 3976. 2003. The Hotel and Restaurants (Classification of Hotels and Restaurants) Regulations, 1988, Authority of the Republic of Kenya, vol. CV- No 62. The three circuits contribute 91% of the 2-5 star-rated hotels in the country. Source: Author[1], 2005.

To be able to access parametric statistical analysis, the study was limit to the smallest sample to a size that was not less than 30 sampling items (Wu & Thompson 2020, Birrell 2020). The population of hotels was organized using stratified sampling into three strata of 2, 3, 4, and 5 star-rated hotels. Kenya had 163, classified hotels (star-rated hotels) of these, 142 fall into the 2-5 star-rated category (Table 2). They composed of 87% of the total number of hotels in the country (Table 2). The Nairobi, coastal and nature reserves circuit had 134 classified hotels (Table 2). This amounted to 82% of the overall classified hotels in Kenya, of these 129 were 2-5 star rated (Table 2).

Table 3: proportional allocation of respondent groups among the three principle tour circuits in Kenya.

	NAIROBI CIRCUIT	**COASTAL CIRCUIT**	**NATURE RESERVES CIRCUIT**	**TOTAL**

Vol. 10, No. 03; 2025

ISSN: 2456-3676

	NAIROBI CIRCUIT	COASTAL CIRCUIT	NATURE RESERVES CIRCUIT	TOTAL
NUMBER OF 2-5 STAR RATED HOTELS	21	56	52	129
PERCENTAGE	16%	44%	40%	100%
RESPONDENT GROUPS	5	13	12	30

Numbers extracted from the Kenya Gazette No 3976. 2003. The Hotel and Restaurants (Classification of Hotels and Restaurants) Regulations,1988, Authority of the Republic of Kenya, vol. CV- No 62]. Source: Author[1], 2005.

The study recognized a natural clustering of hotels into 3 principal tourist circuits of Nairobi city, the Kenyan coast, and the nature reserves- these ideally constituted the 3 sampling units. There were a total of twenty-one of 2, 3, 4, and 5 star classified hotels in Nairobi, fifty-six in the Kenyan coast, and fifty two in the nature reserves (Table 3). This distribution was of the ratio of 16%: 44%: 40%, in respect of Nairobi, Kenyan coast and the nature reserves. This complement of 2, 3, 4, and 5 star-rated hotels constituted 79% of the total star rated or classified hotels in the country, (Table 3) in other words 129 out of the 163 (Table 2).

The minimum sample size of respondent groups interviewed, were kept to above 25-30 and this enabled the conditions for a normal population to prevail (Gregory 1978, Lapin 1981, Glyn et al 1999, Wu & Thompson 2020, Birrell 2020). The Nairobi Cluster then had 21 respondent groups, the Kenyan coast 56 respondent groups and the Nature reserves 52 respondent groups to bring the total sample size of respondent groups to129, (Tables 3 & 4)

Table 4: Proportional allocation of respondent groups to the four hotel categories (2, 3, 4, & 5 star rated) for each of the three principle tour circuits in Kenya.

	NAIROBI CIRCUIT			COASTAL CIRCUIT			NATURE RESERVES CIRCUIT			TOTAL		
	N	%	RG	N	%	RG	N	%	RG	N	%	RG
2-STAR HOTELS	5	24	1	35	62	8	18	35	4	58	45	13
3-STAR HOTELS	9	43	2	13	23	3	22	42	5	44	34	10
4-STAR HOTELS	0	0	0	6	11	1	7	13	2	13	10	3
5-STAR HOTELS	7	33	2	2	4	1	5	10	1	14	11	4
TOTAL	21	100	5	56	100	13	52	100	12	129	100	30

N = Number of hotels; RG = respondent groups; Selected hotels = the management of hotels. Source: Author[1], 2005.

In this study a lower complement of respondent groups for each circuit was adopted for use with the express intention of using the t-distribution and its associated tests. Here the overall number

Vol. 10, No. 03; 2025

ISSN: 2456-3676

of respondent groups stayed at 30 and therefore normality for the country remained. These were distributed into 5 for Nairobi, 13 for Kenyan coast and 12 for the nature reserves. (Table 4).
Tippet's table of four digit random numbers (Nachmias & Nachmias 1996) facilitated this randomization of the selection process. It was adapted accordingly to make it sensitive to the two-digit scale of random selection that took place here (Table 5). When any of these selected hotels became inaccessible for any reason, the adapted table of random four- digit numbers was used to supply an alternative choice. Similar procedures were used to select samples for the pilot survey.

The choice of respondent groups or hotels in each stratum was arrived at in this fashion using simple random probability sampling that is guided by the above adapted Tippets table of random digit numbers (Table 5).

Table 5: Tippet's table of four digit random numbers adapted to a two number setting.

10	22	24	42	37	77	99	96	89	85	28	63	**09**
10	**07**	51	**02**	**01**	52	07	48	54	32	29	02	81
29	00	**05**	91	00	00	69	25	09	91	17	46	92
14	98	34	70	53	76	90	64	**08**	95	15	15	46
48	93	39	**06**	72	91	14	36	69	40	93	61	97
12	21	54	53	97	91	58	32	27	33	72	20	57
04	26	**04**	69	65	57	83	42	56	18	89	62	07
63	28	54	29	52	67	00	68	10	01	25	22	06
81	11	56	05	63	53	88	48	52	87	71	51	52
33	46	33	85	22	05	87	28	04	68	39	25	64
87	62	95	29	73	27	90	18	94	35	33	88	39
06	40	83	33	31	93	20	02	85	97	61	16	42
69	07	10	53	33	**03**	92	85	08	51	60	94	58

Source: adapted from Nachmias and Nachmias 1996.

The hotels listed here (Table 6) for the Nairobi Cluster were selected for field survey. These are Panafric hotel in the 2 star-rated hotel category, Ambassador hotel & Nairobi Safari Club in the 3 star-rated hotel category, and Safari Park hotel in the 5 star-rated hotel category. No hotel will be visited in the 4 star-rated hotel category for there was none then-in the Nairobi circuit.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Table 6: Complement of hotels that are selected, to be visited for field survey in all three circuits.

	2-STAR RATED HOTELS	3-STAR RATED HOTELS	4-STAR RATED HOTELS	5-STAR RATED HOTELS
NAIROBI CIRCUIT	-Silver Springs Hotel, **-Panafric Hotel.**	**-Ambassador Hotel,** -Fairview Hotel, -Nairobi Safari Club.	Nil	**-Safari Park Hotel,** -Intercontinental Nairobi, **-Grand Regency,** -Serena Hotel.
KENYAN COAST CIRCUIT	-Coral Beach Hotel, **-Diani Sea Lodge Hotel,** **-New Lamu Hotel,** -Kasar al Bahir Hotel, **-Giriama Bch Hotel,** -Stephanie Sea House, **-Coconut Village,** -Neptune beach Hotel, **-Scopia Villas,** -Eden Roc Hotel, **-Neptune Paradise Hotel,** **-Mwembe Resort,** -Malaika Hotel, -Blue Bay Village, **-Peponi Hotel,**	**-Reef Hotel,** -Leisure Lodge & Golf Hotel, -Kilifi Baharini Resort, **-Mombasa Beach Hotel,** -Woburn Residence Club, **-Bahari Beach Hotel.**	-Nyali Beach Hotel, **-Severin sea Lodge,** **-White Sands Hotel.**	-White Sands Hotel, -Hemingway's Resort.
NATURE RESERVES CIRCUIT	**-Fig tree,** -Naro Moru River lodge, -Safari Gordon Blue, **-Voyage safari Camp Ziwani,** **-Mara-Intrepids,** -Voi Wildlife Lodge, -Travelers Mwaluganje, El Camp, **-Little Governor's Camp.**	**-Lake Naivasha Country,** -Voyager Safari Lodge, **-Tree Tops Lodge,** -Mara Sopa, **-Sarova Mara Camp,** -Lake Nakuru Lodge, -Saltlick Safari Lodge, **-Samburu Serena Lodge,** -Samburu Lodge, -Severin Safaris Camp,	**-The Ark,** -Ol Tukai Lodge, **-Finch Haltons-Tent Lodge,** -Olonana Camp.	**-Mt Kenya Safari Club,** -Mara Simba Lodge.

Numbers extracted from the Kenya Gazette No 3976 (2003. The Hotel and Restaurants (Classification of Hotels and Restaurants) Regulations,1988, Authority of the Republic of Kenya, vol. CV- No 62. Hotels selected and actually visited in field survey are captured in bold. Source: Author[1], 2005.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

The Coastal Kenyan hotels listed here (Table 6) were selected for field survey, Diani Sea Lodge, New Lamu Palace, Giriama Beach Hotel, Coconut Village, Scopia Villas, Neptune Paradise Hotel, Mwembe Resort and Peponi Hotel in the 2 star-rated hotel category, Reef Hotel, Mombasa Beach hotel and Bahari Beach Hotel in the 3-star-rated hotel category, Nyali Beach hotel in the 4 star-rated hotel category, and White Sands hotel in the 5 star-rated hotel category. The Nature Reserves hotels listed above in (Table 6) were selected for field survey, Fig Tree, Voyager safari camp Ziwani, Mara Intrepids and Little Governor's Camp in the 2 star-rated hotel category, Treetops Lodge, Lake Naivasha Country Club and Sarova Mara Camp, Samburu Serena Lodge and Severin safaris Camp in the 3 star-rated hotel category, The Ark, Finch Hattons Tented Lodge in the 4-star rated hotel category, and Mt Kenya Safari club in the 5 star-rated hotel category.

2.4 Data collection instruments

The study carried out focused interviews with the use of structured interview schedules. The interview schedules contained closed-ended questions. These interview schedules were constructed guided by the conventional considerations of content, structure, format, and sequence (Nachmias & Nachmias 1996, Mugenda & Mugenda 1999, Thorndyke 2023, Knott et.al 2022). Questions that classify the respondents into their socio-economic backgrounds were asked. Objective questions on the measure of the influence of the application of Information Technology on Competitive Advantage were included (Nachmias & Nachmias 1996, Thorndyke 2023, Knott et.al 2022). Close-ended questions were be used. The respondents were offered a set of questions with a clear pre-coded checklist and a scoring schedule, making the exercise quick and easy (Nachmias & Nachmias 1996, Mugenda & Mugenda 1999, Thorndyke 2023, Knott et.al 2022). General questions preceded the more specific questions, and this facilitated very detailed and specific inquiry. The interview schedules were pre-tested for validity and reliability, in a pilot survey that targeted at least 10% (3 respondent groups or hotels) of the overall sample size in all the three sampling units (Mugenda & Mugenda 1999, Birrell 2020, Thorndyke 2023, Knott et.al 2022).

2.5 Data collection procedures

The study obtained primary data using the schedule structured personal interview data collection method (Kothari 1996, Nachmias & Nachmias 1996, Mugenda & Mugenda, 1999, Mezmir 2020, Ghanad 2023). Sampled members of the management were interviewed individually. Responses were entered into the schedule using pre-coded scorecards. For quality control, all data was examined every day after survey for comprehensibility, completeness, consistency, and accuracy. Performance, as manifested by efficiency was thereby measured here in absolute terms of the opinion of hotel managers and system administrators in the hotels. Here then, efficiency in the pre-emptiveness activity level was measured with regard to the direct costs of its three functions, strategic planning, sales & marketing, and reservations management. Information and Communication Technology was therefore identified and then marched to the e functions and

Vol. 10, No. 03; 2025

ISSN: 2456-3676

their related four aspects of practice standards, affiliate marketing, competitor engagement, and expanding business frontiers.

The information nature of the pre-emptiveness activity level, comes into view best when pre-emptiveness is perceived as the contrived deterrence that discourages the competition to take the form of first mover advantage. For this to prevail, it is important to achieve efficiency and productivity that promotes pre-emptiveness in obtaining first mover advantage. This takes place with respect to standards and practice (creativity), unique channels (affiliate marketing), competitor market posture (forcing less favourable market postures on competitors), and imitation barriers, in a Leadership Technological Strategy (LTS). The query to answer in this inquiry therefore is whether the application of ICT increases efficiency and productivity in terms of, reduced cost, reduced time, and reduced manpower for e-hotels. The matrix of interaction would assume the form that is featured here (Tables 7 & 8).

Table 7: Measurement structure of efficiency and productivity in the pre-emptiveness activity node or level through its three functions and first two of four aspects (creativity & virtual tours and affiliate marketing) in its responsiveness to ICT interventions.

TQM-I		**INFLUENCING THE STANDARDS AND PRACTICES (creativity) IN THE INDUSTRY (virtual tours)**			**ACHIEVING UNIQUE ACCESS TO CHANNELS (affiliate marketing)**		
		Cost **01**	Time **02**	Manpower **03**	Cost **04**	Time **05**	Manpower **06**
	Response						
	Code						
	Score						
1	Strategic planning **(AICAEU)**						
2	Marketing and sales **(AICAEV)**						
3	Reservations Management **(AICAEW)**						

TQM-I; Total quality management innovation; C = Cost; T = Time; M = Manpower. ** Barriers against imitations are achieved through patents, copyrights, and trade secrets. * Generally, pre-emptive strikes are pursued through Leadership Technological Strategy (LTS) in today's market (innovation**).** Source: Author[1], 2005.*

Table 8: Measurement structure of efficiency and productivity in the pre-emptiveness activity node or level through its three functions and last two of four aspects (market poster and barriers) in its responsiveness to ICT interventions.

TQM-I		FORCING LESS FAVOURABLE MARKET POSTURE ON COMPEITORS (help out do a competitor)			OFFERING BARRIERS AGAINST IMITATIONS		
		C **07**	T **08**	M **09**	C **10**	T **11**	M **12**
	Response						
	Code						
	Score						
1	Strategic planning **(AICAEU)**						
2	Marketing and sales **(AICAEV)**						
3	Reservations Management **(AICAEW)**						

TQM-I; Total quality management innovation; C = Cost; T = Time; M = Manpower. ** Barriers against imitations are achieved through patents, copyrights, and trade secrets. * Generally, pre-emptive strikes are pursued through Leadership Technological Strategy (LTS) in today's market (innovation**).** Source: Author[1], 2005.*

2.6 Data analysis

Pearson's product moment correlation analysis was used to test relationships between the independent variable of e-hotels and the dependent variable of competitive advantage. The t-test was applied to test the significance of the relationships. The analysis used descriptive statistics such as central tendency, and measures of dispersion (variance), to process the data. Data was presented in form of tables, histograms, and frequency polygons.

3. Results and discussion

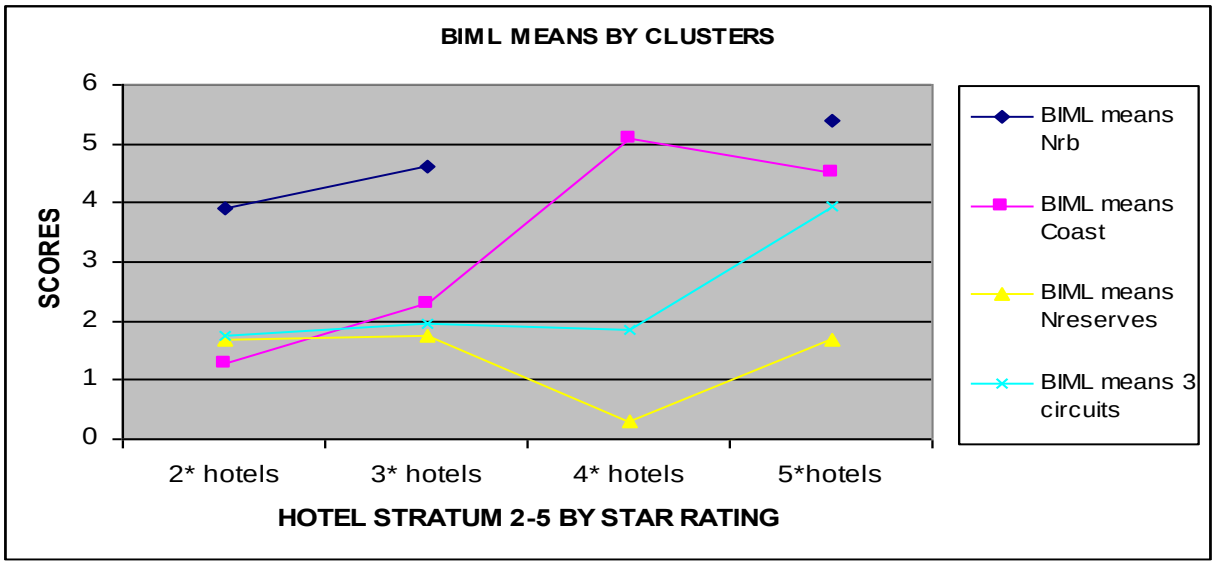
3.1 Descriptive analysis and discussions

3.1.1 Status of information and communication technology

The levels of computerisation for the Nairobi and coastal clusters generally rise with increasing hotel star rating. On the other hand, the levels of computerisation for the nature reserves cluster stays unchanged with the exception of an observed drop between the three-star and four-star rated hotels. On the whole levels of computerisations for all three circuits when combined tend to go up with elevated star rating (Table 9; Figure 6). Commonly, the Nairobi cluster records the highest levels of computerisation, followed by the coastal cluster, and with the nature reserves cluster having comparatively slumped values (Table 9 and Figure 6). Computer literacy levels follow rather closely the patterns that have been observed for levels of computerisation. Nairobi continues its dominance with the highest scores in general. The coastal cluster follows it, while the nature reserves come a weak last. By and large, computer literacy grows with stepping up of the star rating, for both the Nairobi and coastal clusters.

Vol. 10, No. 03; 2025

ISSN: 2456-3676



** BIML: Number, type and capacity of computers and their duration of use. Figure 6: Level of computerisation in hotels for the three respective tour circuits (The Nairobi, Coast and Nature Reserves clusters). Source: Author[1], 2005.*

Table 9: Level of computerisation in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters).

	2* hotels	3* hotels	4* hotels	5*hotels
BIML means Nairobi	3.9	4.61	.	5.39
BIML means Coast	1.28	2.3	5.07	4.51
BIML means Nature Reserves	1.67	1.74	0.3	1.69
BIML means 3 circuits	1.77	1.96	1.84	3.93

** BIML: Number, type and capacity of computers and their duration of use. Source: Author[1], 2005, field data.*

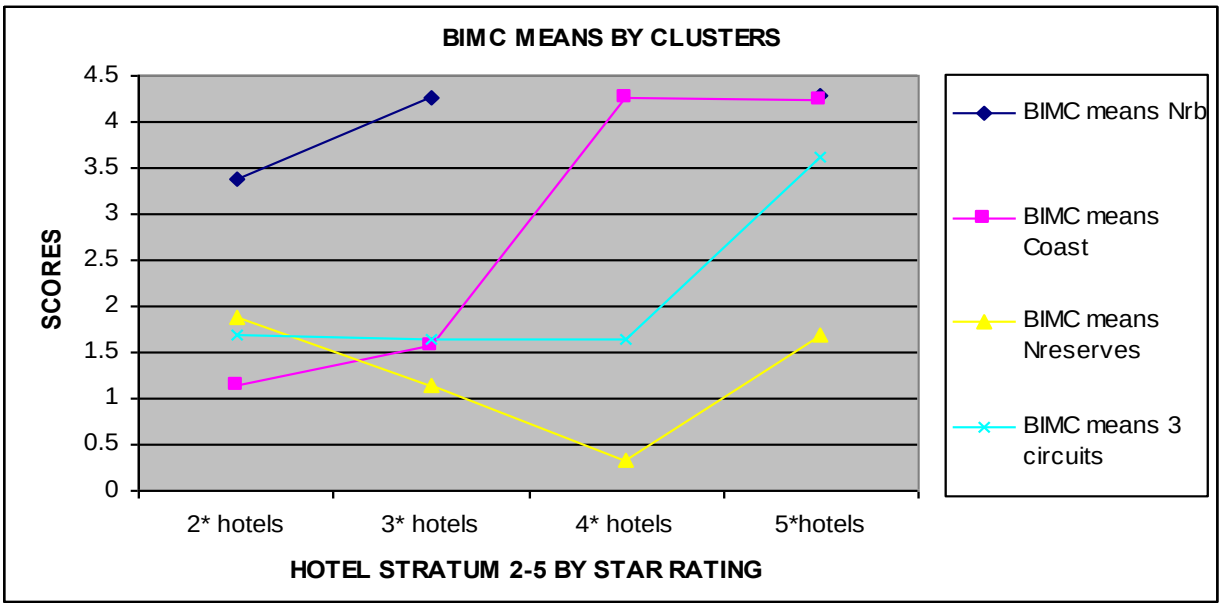
Table 10: Computer literacy levels in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters)

	2* hotels	3* hotels	4* hotels	5*hotels
BIMC means Nairobi	3.38	4.27	.	4.28
BIMC means Coast	1.15	1.57	4.27	4.25
BIMC means Nature Reserves	1.89	1.14	0.34	1.68
BIMC means 3 circuits	1.68	1.63	1.65	3.62

** BIMC: Frequency of use, type of work done, software in use, and duration of use. Source: Author[1], 2005, field data.*

Vol. 10, No. 03; 2025

ISSN: 2456-3676



** BIMC: Frequency of use, type of work done, software in use, and duration of use. Figure 7: Computer literacy levels in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters). Source:Author[1], 2005.*

There is a confirmed trend of diminishing computer literacy levels from two-star rated through the three-star rated and eventually to the four-star rated hotels for the nature reserves cluster (Table 10; Figure 7). When all three clusters are brought together, computer literacy rises more or less progressively, with growing star rating. Hotels with higher star rating then generally portray higher computer literacy levels (Table 10; Figure 7).

Table 11: Demand level of the resource in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters).

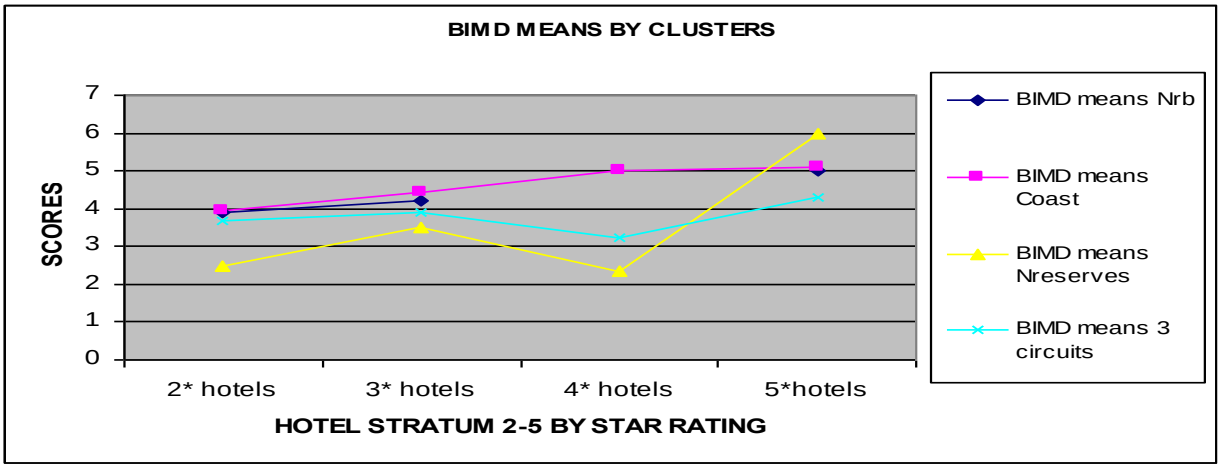
	2* hotels	3* hotels	4* hotels	5*hotels
BIMD means Nairobi	3.88	4.19	.	5.02
BIMD means Coast	3.96	4.41	5	5.1
BIMD means Nature Reserves	2.47	3.52	2.35	6
BIMD means 3 circuits	3.7	3.89	3.23	4.31

** BIMD: demand level for the resource (Room, Conferencing, and Dining). Source: Author[1], 2005, field data.*

Trends for the demand levels of the resource (room, conferencing, and dining) tend to reflect more agreement between the clusters. Here then there is a reasonably consistent rise in demand levels as the hotel star rating grows (Table 11; Figure 8).

Vol. 10, No. 03; 2025

ISSN: 2456-3676



**BIMD: demand level for the resource (Room, Conferencing, and Dining). Figure 8: Demand level of the resource in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters). Source: Author[1], 2005.*

For this particular feature of hotels though, the coastal cluster overtakes the Nairobi cluster, turning in higher values. The nature reserves cluster on its part remains at the bottom of the ranking with the least scores. When all three clusters are looked at as one, they collectively reinforce the pattern already observed, where demand levels rise with growing hotel star rating. The lower star-rated hotels then feature minimal demand in contrast to the higher star-rated hotels, which latter have heightened demand levels (Table 11; Figure 8).

Table 12: Profiles of Information and Communication Technology in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters)

	2* hotels	3* hotels	4* hotels	5*hotels
BIM means Nairobi	3.06	4.33	.	4.59
BIM means Coast	1.48	2.03	4.52	4.39
BIM means Nature Reserves	1.85	1.44	0.5	2.14
BIM means 3 circuits	1.88	1.96	1.84	3.93

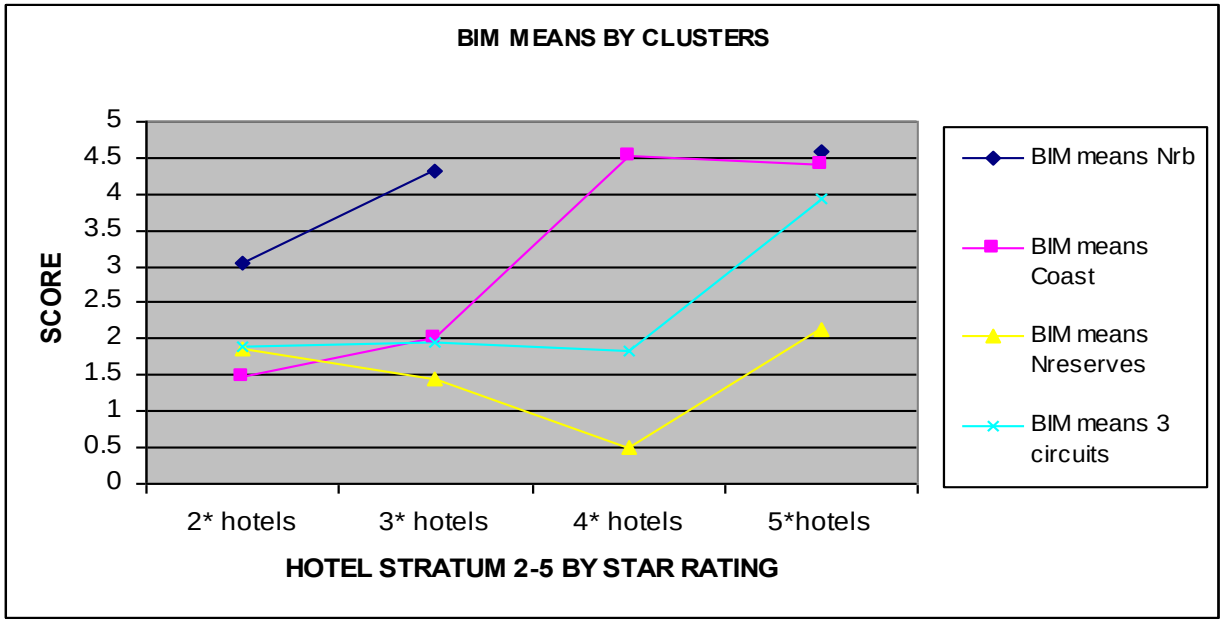
** BIM: Information technology (computerisation, computer literacy and demand for the resource combined). Source: Author[1], 2005, field data.*

Overall profiles of Information and Communication Technology that are derived from these three variables or aspects (these being computer literacy, levels of computerisation, and resulting demand levels for the resource) are consistent with the common trends so far observed. In principal, the profile of information technology generally improves with the rising star rating of the hotels as seen in the profile for the combined three circuits. The Nairobi cluster remains on top with generally the highest scores, and therefore the best profile. The coastal cluster follows

Vol. 10, No. 03; 2025

ISSN: 2456-3676

it, and as is seemingly the norm here the nature reserves tags in last with conspicuously low values (Table 12; Figure 9).



** BIM: Information technology (computerisation, computer literacy and demand for the resource combined). Figure 9: Profiles of Information and Communication Technology in hotels for the three respective tour circuits (the Nairobi, Coast and Nature Reserves clusters)._Source: Author[1], 2005.*

Further, between the two, three, and four star rated hotels of the nature reserves cluster, the already observed tendency for a slump in values is repeated here – the profile dips with rising star rating (Table 12; Figure 9).

When the three variables of the information technology aspect (levels of computerisation, literacy levels, and demand levels of the resource) are compared, a clear hierarchy of dominance or pre-eminence emerges. Demand levels for the resource lead in value of scores by a notable margin, followed by levels of computerisation, with the computer literacy levels tailing in this hierarchy. By and large all increase progressively with rising star rating, such that those hotels with lesser star rating depict a generally poor showing. This pattern remains the same when all three aspects are combined into one variable of information technology (Tables 13; Figure 10).

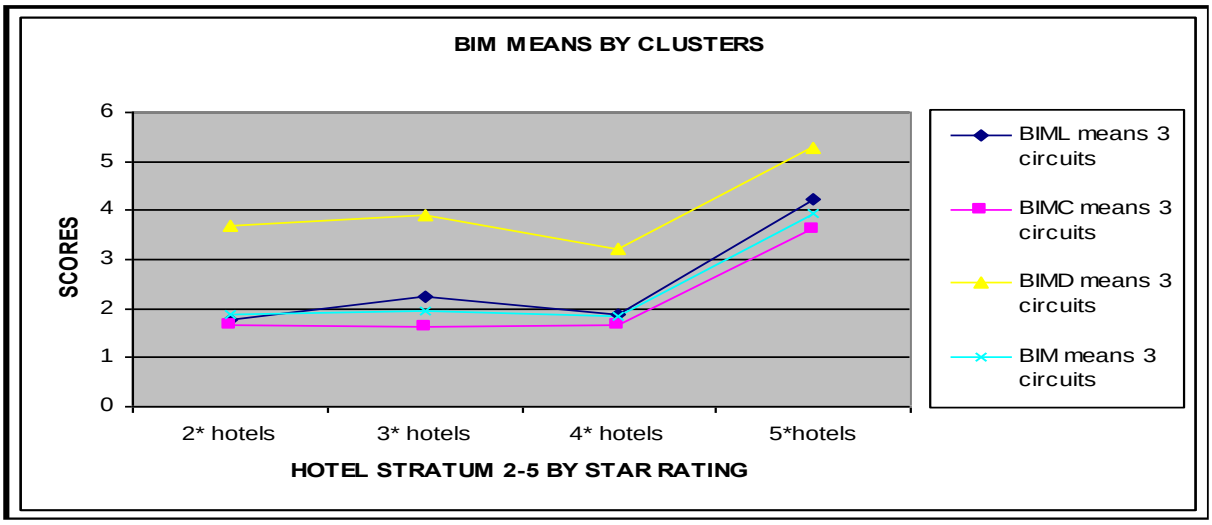
Vol. 10, No. 03; 2025

ISSN: 2456-3676

Table 13: Profiles of information technology in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

	2* hotels	3* hotels	4* hotels	5*hotels
BIML means 3 circuits	1.77	2.25	1.89	4.25
BIMC means 3 circuits	1.68	1.63	1.65	3.62
BIMD means 3 circuits	3.7	3.89	3.23	5.29
BIM means 3 circuits	1.88	1.96	1.84	3.93

** BIML: Level of computerisation; BIMC: Computer literacy levels; BIMD: Demand level of the resource; BIM: Information technology (computerisation, computer literacy and demand for the resource combined). Source: Author[1], 2005, field data.*



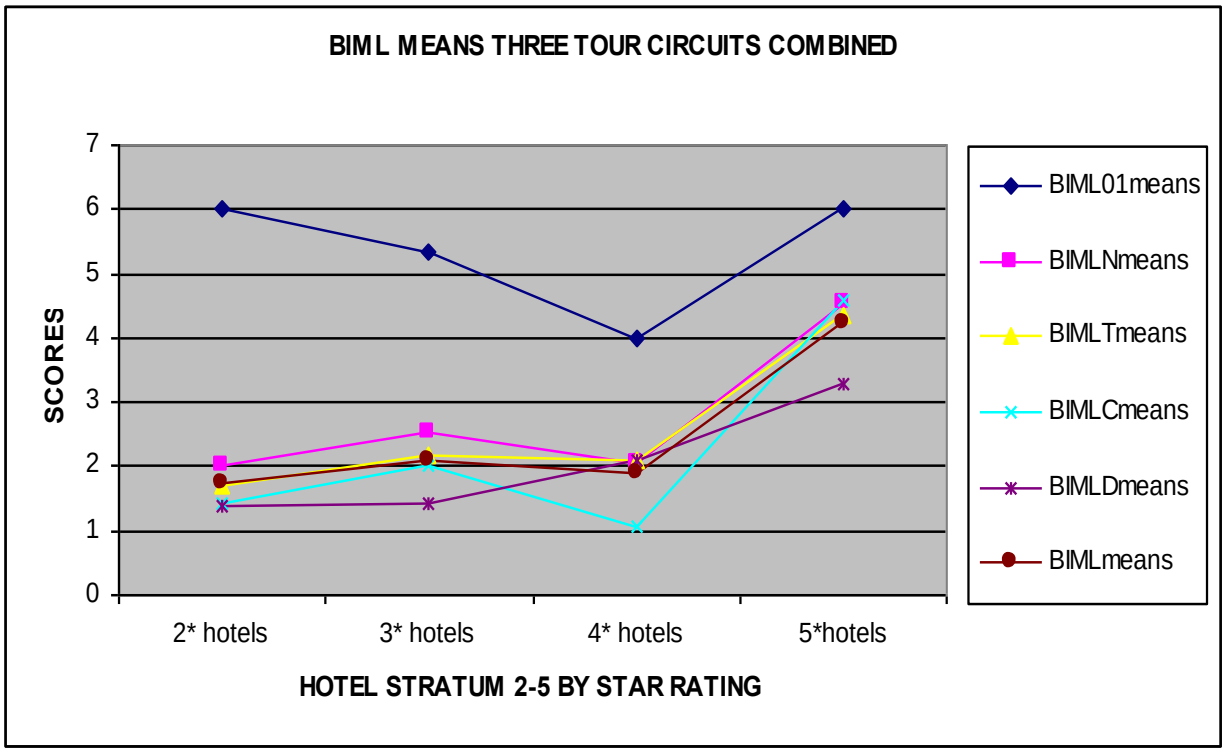
** BIML: Level of computerisation; BIMC: Computer literacy levels; BIMD: Demand level of the resource; BIM: Information technology (computerisation, computer literacy and demand for the resource combined). Figure 10: Profiles of information technology in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined. Source: Author[1], 2005.*

An examination of the internal composition or measurement of the levels of computerisation does a lot to confirm the patterns that have so far been revealed. The numbers of computers in place, types, capacities and durations of use generally grow or improve in worth progressively as the star rating of the hotels increases (Table 14; Figure 11).

The use of branded and high performance computers is more common at the upper end of the star rating hierarchy. The hotels with higher star rating come through here as generally having had access to such superior computer facilities longer. They also by and large have more computers. The numbers of computers in place, types, capacities and durations of use generally grow or improve in worth progressively as the star rating of the hotels increases (Table 14; Figure 11).

Vol. 10, No. 03; 2025

ISSN: 2456-3676



** BIML01: Computers in the hotel; BIMLN Number of computers; BIMLT: Type of computers; BIMLC: Capacity of computers; BIMLD: Duration of use of computers BIML: Level of computerisation. Figure 11: Level of computerisation in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined. Source: Author[1], 2005.*

Curiously, there is a general inclination for hotels to record decreasing presence of computers from the two, to three, to four-star rated hotels. This situation is only redeemed by a clear upswing on the prevalence of computers within the five-star rated hotels. All in all, though the score values for computer provision is way above that achieved by the other five aspects, which are used to measure level of computerisation. (Table 14; Figure 11).

Table 14: Level of computerisation in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

		2* hotels	3* hotels	4* hotels	5*hotels
THREE CIRCUITS COMBINED	BIML 01 means	6	5.33	4	6
	BIMLN means	2.01	2.51	2.07	4.55
	BIMLT means	1.69	2.16	2.11	4.35
	BIMLC means	1.41	2.02	1.07	4.6
	BIMLD means	1.38	1.43	2.11	3.3
	BIML means	1.73	2.11	1.89	4.25

Vol. 10, No. 03; 2025

ISSN: 2456-3676

** BIML01: Computers in the hotel; BIMLN Number of computers; BIMLT: Type of computers; BIMLC: Capacity of computers; BIMLD: Duration of use of computers BIML: Level of computerisation. Source: Author[1], 2005, field data.*

A more articulate picture of the internal scene within levels of computer literacy serves well to confirm the trends that have already been observed. In this regard then, a common rise in value for the general literacy of management staff, types of software in use, type of work done, and duration of use is observed. This same trend is replicated for the aggregate computer literacy measure, which progressively increases with rising star rating of hotels (Table 15; Figure 12).

Table 15: Computer literacy levels in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

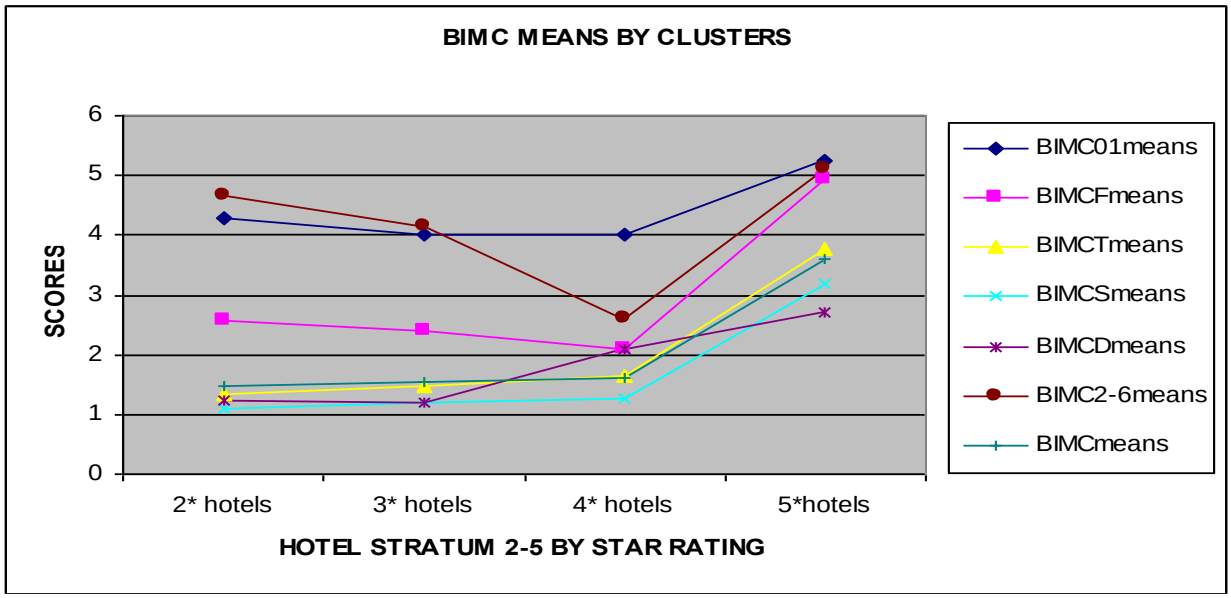
		2* hotels	3* hotels	4* hotels	5*hotels
THREE CIRCUITS COMBINED	*BIMC01 means*	4.29	4	4	5.25
	BIMCF means	2.57	2.41	2.11	4.95
	BIMCT means	1.33	1.49	1.64	3.76
	BIMCS means	1.09	1.2	1.28	3.18
	BIMCD means	1.23	1.21	2.11	2.7
	BIMC2-6 means	4.66	4.15	2.6	5.1
	BIMC means	1.47	1.54	1.63	3.61

** BIMC01: Computer literacy of management; BIMCF: Frequency of use of computers; BIMCT: Type of work done; BIMCS: Software of computers; BIMCD: Duration of use of computer software; BIMC2-6: Internet services; BIMC: Computer literacy levels. Source: Author[1], 2005, field data.*

A fascinating variation from this pattern is nevertheless discernible in the area of frequency of use of computers. There is less intense use of computers in the four star rated hotels, than in the three star rated ones, and these latter hotels in turn portray less frequency of the use of computers than the two-star rated hotels. This trend however is drastically reversed with a major surge in frequency of use of computers in the five star rated hotels, attaining levels that conspicuously exceed those realised by the two-star rated hotels (Table 15; Figure 12).

Vol. 10, No. 03; 2025

ISSN: 2456-3676



** BIMC01: Computer literacy of management; BIMCF: Frequency of use of computers; BIMCT: Type of work done; BIMCS: Software of computers; BIMCD: Duration of use of computer software; BIMC2-6: Internet services; BIMC: Computer literacy levels. Figure 12: Computer literacy levels in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined. Source: Author[1], 2005.*

The efficiency with which Internet services are provided however experiences progressive decline up the rising hierarchy of star rating of hotels, from the two to three and then four-star rated hotels. This trend is eventually reversed with the five star rated hotels displaying a marked improvement in Internet provision, that surpasses the levels achieved by the two-star rated hotels (Table 15; Figure 12).

When the three tour circuits are aggregated together and examined for the demand levels of the resource (room, conferencing, and dining), they reveal intriguing variations in trends. They do not solidly reinforce the trends so far underscored for the individual demand levels of the resource in each of the three clusters, and their respective overall profiles of Information and Communication Technology (Table 16; Figure 13).

All, star rated hotels receive much of inquiry for their product and services, at a level that is more or less constant. Further, demand for the room, dining, and the practice of making or facilitating reservations through the Internet, and its ability for virtual tours, affiliate marketing, and chain linking on the web all share a similar trend. They, together with the overall demand level for the resource here loose value up the hierarchy of star rated hotels, from the two to the four-star rated hotels. It is only the five-star rated hotels that introduce change in this trend with a drastic rise in value for all these aspects of demand level of the resource (Table 16; Figure 13).

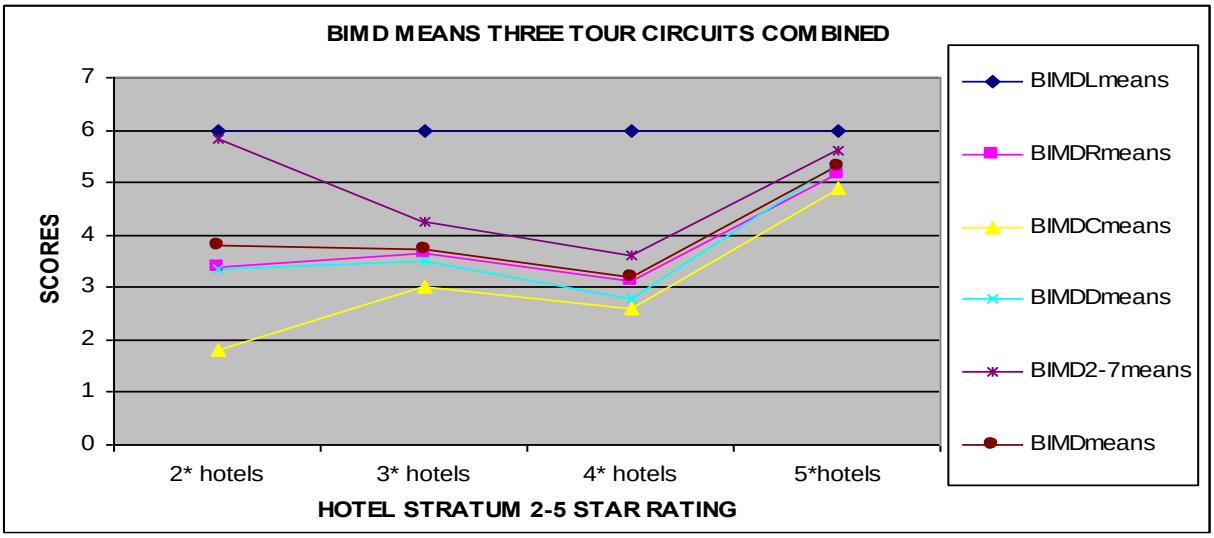
Vol. 10, No. 03; 2025

ISSN: 2456-3676

Table 16: Demand levels of the resource in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

		2* hotels	3* hotels	4* hotels	5*hotels
THREE CIRCUITS COMBINED	BIMDL means	6	6	6	6
	BIMDR means	3.4	3.65	3.14	5.15
	BIMDC means	1.79	3	2.61	4.9
	BIMDD means	3.36	3.5	2.8	5.4
	BIMD2-7 means	5.82	4.24	3.61	5.63
	BIMD means	3.8	3.74	3.2	5.32

** BIMDL: Demand level of resource; BIMDR: Rooms; BIMDC: Conferencing; BIMDD: Dinning; BIMD: 2-7 Web site; BIMD: Demand level for the resource (room, conferencing, and dining). Source: Author[1], 2005, field data.*



** BIMDL: Demand level of resource; BIMDR: Rooms; BIMDC: Conferencing; BIMDD: Dinning; BIMD:2-7 Web site; BIMD: Demand level for the resource (room, conferencing, and dining) BIMD: Demand level for the resource (room, conferencing, and dining). Figure 13: Demand levels of the resource in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined. Source: Author[1], 2005.*

The sole exception to this pattern is the demand level for conferencing that experiences a continuous rise in value up the increasing hierarchy of star rating for the hotels. Generally, demand levels are highest for the room, followed by the dining, and finally by conferencing (Table 16; Figure 13).

Vol. 10, No. 03; 2025

ISSN: 2456-3676

3.1.2 Performance in pre-emptiveness

The competitive advantage in hotels, of pre-emptiveness that is of interest here is one that takes place in response to the application of ICT. The study attended to the resulting rise in performance as it related to total quality management innovation in the pre-emptiveness activity level in terms of cost measures of performance. The three functions of pre-emptiveness reviewed here are strategic planning, sales & marketing, and reservations management. Alongside these were four aspects of pre-emptiveness. They included development of standards & practices in the industry, achieving unique access to channels (affiliate marketing), forcing unfavourable market postures on competitors and mounting barriers against imitations.

Effective pre-emptiveness that promotes competitive advantage is about obtaining first mover advantage with respect to the four aspects of standards and practice, unique channels, competitor market posture, and containment of imitation barriers, with a leadership technological strategy (LTS). In these respects, then, total quality management incentives (TQM-I) do need to necessarily be applied in the areas of strategic planning, marketing and sales, and reservations management of the hotels.

The Nairobi cluster dominates the others in recording consistently the most positive response levels of competitive advantage to ICT interventions. All through, it displays the strongest relationship of competitive advantage by pre-emptiveness and ICT application in hotels. This cluster further exudes the trend where performance of pre-emptiveness rises up from the two star rated hotels to the three star rated hotels to achieve highest response level possible, which level then is maintained up to the five star rated hotels (Table 17; Figure 14). The coastal cluster on its part displays falling response and therefore strength of relation to the application of ICT, initially, from the two-star to the three-star rated hotels. Thereafter the trend changes, rising to the four-star rated hotels, and then staying constant up to the five star rated hotels, having achieved the strongest relationship possible (Table 17; Figure 14).

Table 17: Competitive advantage of pre-emptiveness in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) in response to the application of information technology.

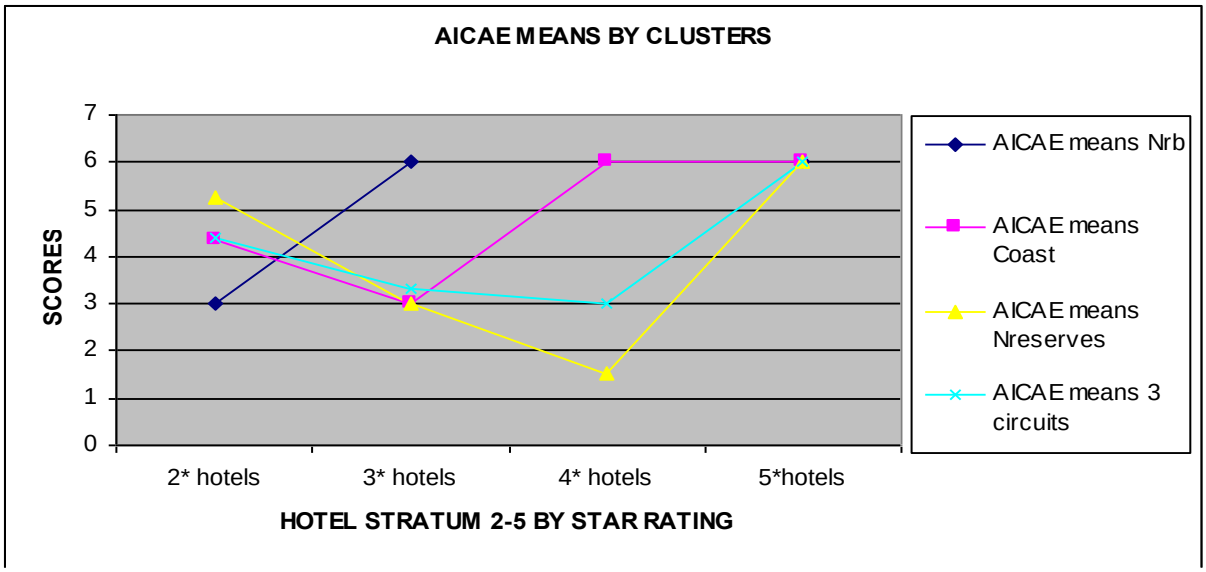
	2* hotels	3* hotels	4* hotels	5*hotels
AICAE means Nairobi	3	6	.	6
AICAE means Coast	4.33	3	6	6
AICAE means Nature Reserves	5.25	3	1.51	6
AICAE means 3 circuits	4.4	3.33	3	6

** AICAE: Competitive advantage of pre-emptiveness in terms of improved efficiency and performance as a result of the application of ICT in hotels. Source: Author[1], 2005, field data.*

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Against this background is layered a contrary trend for the nature reserves cluster, that shows a predominantly falling performance of pre-emptiveness with rising star rating, as a response to the application of ICT in hotels. The response level here drops continuously from the two-star rated hotels to the four-star rated hotels. With the five-star rated hotels however, the trend experiences a reversal whereby the response level overshoots that previously recorded for the two-star rated hotels (Table 17; Figure 10).



** AICAE: Competitive advantage of pre-emptiveness in terms of improved efficiency and performance as a result of the application of IT in hotels. Figure 14: competitive advantage of pre-emptiveness in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) in response to the application of information technology. Source: Author[1], 2005.*

Table 18: Competitive advantage of the elements of pre-emptiveness in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined in response to the application of information technology.

		2* hotels	3* hotels	4* hotels	5*hotels
	AICAEU means	4.43	3.33	3	6
THREE CIRCUITS COMBINED	AICAEV means	4.39	3.33	3	6
	AICAEW means	4.39	3.33	3	6
	AICAE means	4.4	3.33	3	6

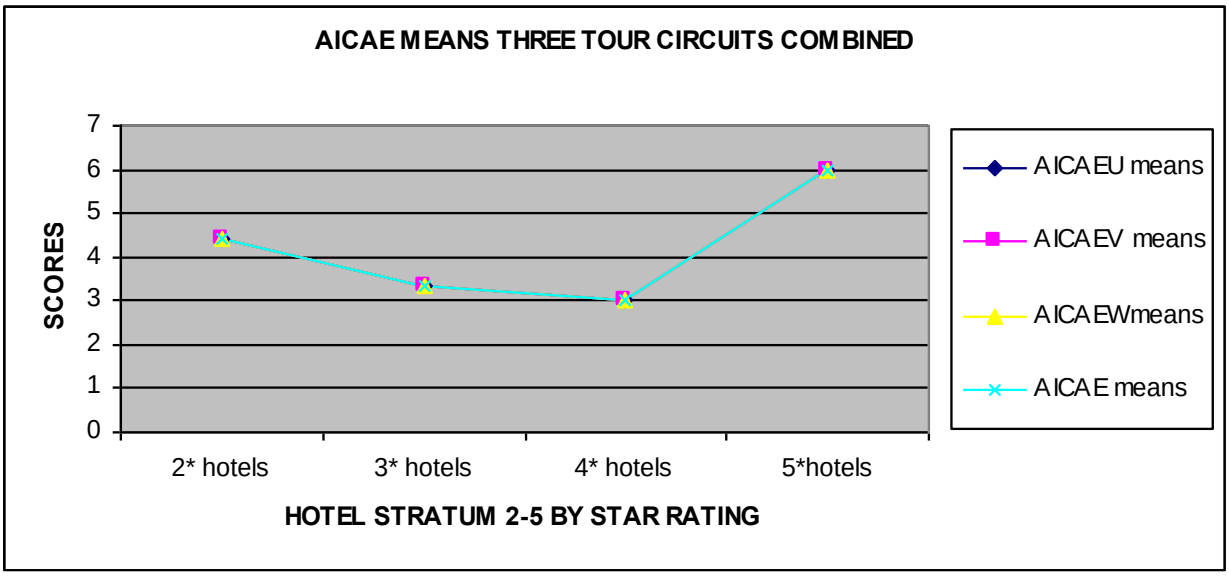
** AICAEU: Competitive advantage of strategic planning; AICAEV: Competitive advantage of marketing and sales; AICAEW: Competitive advantage of reservations management - all in terms of improved efficiency and performance as a result of the application of IT in hotels. Source: Author[1], 2005, field data.*

Vol. 10, No. 03; 2025

ISSN: 2456-3676

The aggregate competitive advantage for all three clusters that derives from a positive response of pre-emptiveness in hotels to the application of ICT is merely a moderated version of trends in the nature reserves cluster. This cluster then seems to enjoy monopoly over the Nairobi and coastal clusters when constituting the aggregate profile of competitive advantage by pre-emptiveness for all three clusters combined (Table 17; Figure 14).

Strategic planning, marketing and sales, and reservations management all enjoy similar concurrence with their derivative pre-emptiveness in their pattern of levels of response to the application of ICT, with changing star rating of the hotels when all three clusters are put together. Their response profiles agree with that of the derived pre-emptiveness in influencing standards and practice, creating and promoting unique channels, fighting competitor market posture, and imitation barriers, as well as in fostering a suitable leadership technological strategy (Tables 17 & 18; Figures 14 & 15). These elements of pre-emptiveness generally experience waning strength of relationship between them and the application of ICT from the two to the four-star rated hotels. In the five-star rated hotels though a drastic rise in response level is discernible that attains levels beyond those of the two-star rated hotels (Tables 17 & 18; Figures 14 & 15).



** AICAEU: Competitive advantage of strategic planning; AICAEV: Competitive advantage of marketing and sales; AICAEW: Competitive advantage of reservations management - all in terms of improved efficiency and performance as a result of the application of IT in hotels. Figure 15: Competitive advantage of the elements of pre-emptiveness in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined in response to the application of information technology. Source: author[1], 2005.*

None of these three elements of pre-emptiveness show detectable dominance, one over another, over their sensitivity to the application of ICT in the hotels (Table 18; Figure 15). Here too, the

Vol. 10, No. 03; 2025

ISSN: 2456-3676

clear concurrence between the elements and their derivative, in this case, pre-emptiveness suggests strongly at similar agreement between the response profiles of strategic planning, marketing and sales, and reservations management, and their resulting pre-emptiveness, for the Nairobi, coastal, and nature reserves clusters (Tables 17 & 18; Figures 14 & 15).

3.2 Inferential analysis and discussion

The implied trends so far encountered were probed further and tested for actual correlation using the Pearson's product-moment and Spearman's rank correlation coefficient tests as was found appropriate. This correlation coefficient is pertinent given the ordinal form of data measurement that was adopted for use in this inquiry (Gregory 1978, Hayslett 1983).

The preceding analysis has shown that pre-emptiveness, its functions and aspects all respond better to the application of ICT with rising star rating. This implies a general trend of improved efficiency and productivity in the pre-emptiveness activity node with rising star rating of hotels. The patterns are only interrupted by an explainable slump in efficiency, at times for the three-star rated hotels, and more commonly for the four-star rated hotels, as a result of the dynamics of changing hotel status. A rising star rating coincides with advances in hotel facilities and personnel. In this inquiry, better hotel facilities are taken to represent good socio-economic profiles of the hotel premises with respect to proximity of location, longer years of operation, higher bed capacities, and increased reliance on the international market. In turn, better personnel are assumed to reflect a good socio-economic profile of the hotel management. This is a management that is generally older, more educated, increasingly of foreign extraction, with larger families. It generally also displays higher incomes, is mainly male, has stronger job specialisation, is married, and has more years working for the present employer.

The study therefore did fully address the set objectives, establishing that all the pre-emptiveness dimension of the CAPITA construct responds to the application of ICT. As a result, it occasions improved performance and competitive advantage as the socio-economic profiles of both the hotel establishment and management improves.

The hypothesis that was set for testing in this study is a scientific hypothesis. It is represented here below as a null (H_0) hypothesis and also as an alternate (H_1) hypothesis:

H_0 = There is no relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels with respect to the pre-emptiveness activity level or node.

H_1 = There is a relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels with respect to the pre-emptiveness activity level or node.

For the pre-emptiveness dimension of the CAPITA model of hotels, competitive advantage is seen to respond to the application of ICT. The response level generally grows with improvements in hotel facilities and personnel; in other words, as the star rating rises. These responses are confirmed for each of the three clusters, although with variations in intensity from one cluster to another, and also for the overall country as it is represented by the three clusters

Vol. 10, No. 03; 2025

ISSN: 2456-3676

combined. The relationship generally becomes more intense with rising star rating of hotels. From these trends it is clear that there is a relationship between competitive advantage in the pre-emptiveness center of activity of hotels, with the application of ICT. The alternate hypothesis (H_1 = There is a relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels) is therefore accepted. In effect then, the null hypothesis (H_0 = There is no relationship between the application of Information Technology & Competitive Advantage in Kenyan hotels with respect to the pre-emptiveness activity level or node) is rejected. The magnitude and direction of this relationship can however only emerge with tests of association.

Correlation tests between, the quality of hotel facilities and personnel, computerisation, in all seven the activity levels of the CAPITA model of hotels were conducted. They confirmed a strong positive relationship between the response of competitive advantage to the application of ICT, and e-hotels or computerisation. This relationship had a correlation coefficient r = 0.679**. It had a p-calculated value of 0.000 being significant at an alpha error value of 0.01, and therefore a confidence level of 99.9% (Table 19). A similar profile can be inferred for the specific pre-emptiveness activity levels as it was integral to the correlation tests conducted.

Table 19: Correlation tests for the quality of hotel facilities and personnel, computerisation, and the response of competitive advantage to the application of Information and Communication Technology in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

		SEI	BIM	AICAP	
SEI	Correlation coefficient	1.000	.425*	.194	
	Sig. (2-tailed)	.	.019	.314	
	N	30	30	29	
BIM	Correlation coefficient	.425*	1.000	.679**	
	Sig. (2-tailed)	.019	.	.000	
	N	30	30	29	
AICAP	Correlation coefficient	.194	.679**	1.000	
	Sig. (2-tailed)	.314	.000	.	
	N	29	29	29	

** Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed). ***SEI: Socio-economic profile of hotels (quality of hotel facilities and personnel); BIM: Computerisation; AICAP: Competitive advantage in terms of improved efficiency and performance as a result of the application of ICT in hotels. Source: Author[1], 2005.*

Also confirmed was a modest positive association between the quality of hotel facilities and personnel, and e-hotels or computerisation. Here the correlation coefficient, r = 0.425*. This relationship was significant with a 2-tailed (α) alpha error value of 0.05, and therefore a confidence level of 99.5%, with a p-calculated value was 0.019 (Table 19). Quality of personnel

Vol. 10, No. 03; 2025

ISSN: 2456-3676

in hotels entirely failed to associate with level of computerisation, computer literacy levels (Table 20). It also did not relate at all with the pre-emptiveness activity node in hotels (Table 21).

Positive but varied relationships do exist between the quality of facilities and personnel, computerisation, and ICT stimulated competitive advantage in hotels (Tables 20 & 21). Rising performance of hotels, and consequential improved competitive advantage do therefore emerge from the application of ICT. This is attained through actual concurrent improvements in computerisation levels and also in the levels of computer literacy of personnel in hotels. Improvements in the quality of hotel facilities and personnel also promote better e-hotels. Cyclically, this status provokes improved levels of computerisation, and also a rise in the levels of computer literacy in hotels.

Table 20: Correlation tests for the elements of quality of hotel facilities and personnel, and the elements of computerisation in hotels for the three tour circuits (the Nairobi, Coast and Nature Reserves clusters) combined.

		BIML	BIMC	BIM	
SEIH	Correlation coefficient	.387*	.398*	.438*	
	Sig. (2-tailed)	.035	.030	.015	
	N	30	30	30	
SEIR	Correlation coefficient	.285	.254	.254	
	Sig. (2-tailed)	.127	.175	.175	
	N	30	30	30	
SEI	Correlation coefficient	.421*	.406*	.424*	
	Sig. (2-tailed)	.021	.026	.020	
	N	30	30	30	

*** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).***SEIH: Quality of facilities in hotels; SEIR: Quality of management - personnel in hotels; SEI: Socio-economic profile of hotels (quality of hotel facilities and personnel); BIML: Level of computerisation in hotels; BIMC: Computer literacy levels in hotels; BIM: overall computerisation in hotels. Source: Author[1], 2005.*

Quality of personnel in hotels failed entirely to associate with level of computerisation, individual computer literacy levels, and the overall computer literacy levels in hotels (Table 20). The quality of facilities in hotels in its turn registered a moderate positive association with the pre-emptiveness activity level of hotels. This was reflected in a correlation coefficient, r = 0.427*, significant with a 2-tailed (α) alpha error value of 0.05, and therefore a confidence level of 99.5%, and recorded a p-calculated value of 0.021 (Table 21). The socio-economic profile of hotels as represented by the quality of facilities and personnel portrayed a modest positive correlation with level of computerisation, computer literacy and overall computerisation in hotels. It registered the respective coefficient r = 0.421*, 0.406* and 0.424* with these three

Vol. 10, No. 03; 2025

ISSN: 2456-3676

aspects of ICT. The corresponding p-values recorded here were 0.021, 0.026 and 0.020 in a 2-tailed (α) alpha error value of 0.05; r = and therefore a confidence level of 99.5%.

All of the elements of computerisation or e-hotels display fairly strong positive correlations with the pre-emptiveness activity nodes and by extension its three functions and four aspects. They respectively register correlation coefficient r values of 0.523**, 0.572**, 0.509**, and 0.594**. Their respective p-values are 0.009, 0.001, 0.005 and 0.001. These relationships are all significant to a 2-tailed (α) alpha error value of 0.01 and therefore a confidence level of 99.9%. Only one element of the quality of the hotels clinches a significant association with the pre-emptiveness activity node, its functions and aspects. This the quality of facilities in hotels. It registers a modest positive correlation coefficient with an r value of 0.427*, and a p-value of 0.021. This association is significant to a 2-tailed (α) alpha error value of 0.05 and therefore a confidence level of 99.5%.

Table 21: Correlation tests for computerisation and quality of hotel facilities and personnel with the pre-emptiveness activity level: Competitive advantage arising from the application of information technology in hotels for the three tour circuits (the Nairobi, Coast and Nature reserves clusters).

Elements of Computerisation		AICAE: Pre-emptiveness	Quality of hotel facilities and personnel		AICAE: Pre-emptiveness	
BIML	Correlation coefficient	.523**				
	Sig. (2-tailed)	.004				
	N	29				
BIMC	Correlation coefficient	.572**	SEIH	Pearson Correlation	.427*	
	Sig. (2-tailed)	.001		Sig. (2-tailed)	.021	
	N	29		N	29	
BIMD	Correlation coefficient	.509**	SEIR	Pearson Correlation	.098	
	Sig. (2-tailed)	.005		Sig. (2-tailed)	.614	
	N	29		N	29	
BIM	Correlation coefficient	.594**	SEI	Pearson Correlation	.245	
	Sig. (2-tailed)	.001		Sig. (2-tailed)	.200	
	N	29		N	29	

*** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).*** BIML: Level of computerisation in hotels; BIMC: Computer literacy levels in hotels; BIMD: level of demand for the resource (room, conferencing, and dining) in hotels BIM:*

Vol. 10, No. 03; 2025

ISSN: 2456-3676

*overall computerisation in hotels; ***SEIH: Quality of facilities in hotels; SEIR: Quality of management - personnel in hotels; SEI: Socio-economic profile of hotels (quality of hotel facilities and personnel); AICAE: Pre-emptiveness in hotels. Source: Author[1], 2005.*

The quality of management personnel in hotels does have a relatively strong positive correlation with the pre-emptiveness activity nodes and by extension its three functions and four aspects. It registers a correlation coefficient r value of 0.614 with a p-value of 0.249 but fails to attain any significant (α) alpha error value. This relationship is therefore not significant. It has no confidence level and should at best be ignored. The socio-economic profile of hotels as seen in the quality of hotel facilities and personnel scores a low r = 0.245 correlation coefficient, denoting a weak association and with no notable significance level. The suggested relationship should also be disregarded.

4. Conclusions recommendations & implications

Of value here is a brief appreciation of the achievements made in inquiry as specifically guided by the set objectives. Lessons learnt, are also brought to view. Practical guidelines for action are drawn out to guide policy makers, and professionals, to implement the findings of this study. This is followed up with an identification of new directions for possible future research.

At this point in time, it has emerged that activity at the pre-emptiveness node of e-hotels relies much on data or information. Its acquisition or generation, assessment or evaluation, storage, and communication or information flows drives activity in the node. This makes the pre-emptiveness activity level amenable to ICT interventions. The efficiency of ICT in data management and communication engenders improved operations and delivery of results. E-hotel posture can gain much from contemporary superior Information and Communication Technology systems. ICT has recognised, well-attested ease of data management and transmission of information. Pre-emptiveness and its specific functions and aspects have been shown to respond well to ICT interventions. This activity node then stands to gain much by way of improved efficiency in its operations, improving the service value offer of e-hotels. The specificity that is realised in articulating this responding relationships also makes intervention in e-hotels with ICT, an orderly, well targeted viable option.

4.1 Conclusions

From the preceding analysis, it emerges that hotels with higher star rating also have higher levels of computerisation, and more computer literate staff. They also reflect higher demand levels for their rooms, conferencing and dining. The higher star rated hotels seem to have more computers in place, whose capacities and performance, as well as software are more sophisticated. In these hotels, the duration of exposure to these technologies is longer, while staffs access the more superior analytical software more.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Investment in computers remains an expensive and novel venture in this country. As such, the hotels with higher star rating forge further ahead, and invest more on computerisation than their less privileged counterparts. It is these hotels with higher star rating that also show commonality between higher computerisation, more computer literacy and higher demand levels for the resource (room, conferencing, and dining). Given their general international orientation, they are more likely to insist on standards of competence for their personnel, in order to match the market posture. They have serious concern to offer services that are commensurate with the expectations of the international customers.

Naturally, hotels with lower star rating feel less the need to measure up to international trends, since their markets primarily incline more to the local scene. This local market has in the past portrayed low levels of computer literacy. It would therefore respond less to computerisation of hotels. For this reason, hotels with lower star rating will prioritize computerisation less, given its reduced likelihood to influence their primary markets that remains primarily local. As expected then the demand that is directed towards their resource (room, conferencing, and dining) is lower. This can be explained by the expected lower affordability of the local market. Moreover, this local market is considerably smaller than the international market.

Another pattern that is notable from the analysis is that the Nairobi cluster fully dominates the coastal and nature reserves cluster in their profiles on information technology. These trends arise from the fact of Nairobi being a cosmopolitan city, which boasts of being a center for local, regional and international business. It enjoys higher developments in the computing and telecommunications technology, and with more advanced computerisation. Further, the city features a high concentration of easily accessible and affordable information and communication technology training institutions of repute. Institutions of international repute, which offer specialized training for hoteliers, are also plentiful here. In contrast the coastal cluster has a relatively undeveloped infrastructure along its rather spread out coastal strip. Manpower development remains a challenge, while its main urban centers of Lamu, Kilifi, Malindi, Mombasa, and Ukunda remain in most cases as local business centers. Computer literacy then in this cluster is a continuing handicap.

The nature reserves cluster emerges with the lowest standing in respect of computerisation, computer literacy, and demand levels for the resource (room, conferencing and dining). Its remote location, within relatively undeveloped areas, where there is little education opportunity, and purely very local urban centers contributes much to this standing. Establishing these hotels alone is quite a task, as skilled labour and employees must almost in all cases be sourced from far off places. Telephone is mainly by wireless, which option of communication comes under stringent licensing conditions and procedures. Internet that relies on this system is therefore rather handicapped.

This study has established clearly that the pre-emptiveness activity node of e-hotels derives improved performance from ICT interventions. There are manifestly good grounds for the

Vol. 10, No. 03; 2025

ISSN: 2456-3676

rejection of the null hypothesis (H_0**:** There is no relationship between the use of Information and Communication Technology and efficiency at the pre-emptiveness activity level in e-hotels). It is reasonable to accept the alternative (H_1: There is a relationship between the use of Information and Communication Technology and at the pre-emptiveness activity level in e-hotels). Pre-emptiveness enjoys a significant modest association with the application of ICT. This relationship grows stronger along the hierarchy of a rising star rating. This implies a general trend of improved efficiency and productivity in the pre-emptiveness activity node with rising star rating of hotels.

The patterns are only interrupted by an explainable slump in efficiency, at times for the three-star rated hotels, and more commonly for the four-star rated hotels, as a result of the dynamics of changing hotel status. It is strongest in the City of Nairobi, medium level in the Coastal Cluster and least in the Nature Reserves. These hierarchies match increasing levels of computerisation, ICT literacy levels and quality of physical facilities. Interestingly, the quality of management personnel and its ICT disposition has little influence on pre-emptiveness. This an understandable turn of events as pre-emptiveness is mainly operationalised by middle level staff in e-hotels working with the ICT departments. It is important to note that the hierarchies of relationships that are observed here constitute guides for investment of ICT in e-hotels. Such investment would target to maximise the impact on performance and efficiency in the pre-emptiveness activity level, and by extension the competitive advantage of e-hotels.

Competitive Advantage will therefore emerge from a strategy application Information and |Communication Technology. The seven activity hubs are ideal targets of this intervention. In this regard the pre-emptiveness node or level of activity can be used to improve productivity in hotels in order to offer services with increased efficiency. This activity level responds well to the application of ICT, translating hotels into the e-hotel or e-commerce business mode. Here then customers can be accessed more effectively and interactively, on a one-on-one basis. It also facilitates for easier, effective, more extensive and therefore more competitive affiliations and chain linking. By pursuing competitive advantage in hotels, through the application of ICT, Kenyan hotels stand a better chance of retaining and even expanding their share of the international market.

4.2 Recommendations and implications

The challenge of loses arising out of a dwindling international market, increases with falling quality of hotel ICT facilities. Hotels in the nature reserves are particularly most affected, followed by those in the Kenyan coast. This threat of a shrinking market base is least for Nairobi hotels. The unstable condition of three and four-star rated hotels is another area that needs urgent attention, in order to improve performance. Hotels are less efficient and therefore less competitive when characterized by low levels of computerisation and computer literacy and therefore ICT.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Where the differential performance of hotels and tour circuit cluster are concerned, it is important that the hotels with low star rating prioritize their investments that improve their ICT facilities. General support infrastructure in form of roads, water, sewerage, telephone, electricity, and educational institutions, are upgraded within the nature reserves and coastal clusters. When hotels upgrade to three and four-star rated hotels, they are properly guided to lay equal emphasis on building ICT infrastructure.

In as far as efficiency and productivity of hotels goes, it is necessary then that there is more investment on computers. These computers should be more in number and of the high-performance branded types. The requisite updated software also needs to be made available. Emphasis should be laid on computer training, which promotes better and more intense use of computers in hotels. Hotels should also build in an efficient ICT infrastructure that will include local area networks, competent ISP providers, and a stable telephone service base for Internet. It is also important for hotels to set internal ICT policies for all operations and services to be computer based.

These are the postures on computerisation that introduce useful initiatives within the seven centers of activity in hotels on the application of ICT. The net result is improved performance within each of these activity centers, and between them. Information flows are made more efficient; with the result that service and product delivery to the customers is better.

The recommended improvements in the quality of hotel computerisation, and training in computers are best channelled into centers of activity that contribute most to improved performance such as the Pre-emptiveness activity node. This activity level is suitable as it focuses is on obtaining first mover advantage with respect to standards and practice, unique channels, competitor market posture, and containment of imitation barriers, with a leadership technological strategy (LTS). In these respects, then, total quality management incentives (TQM) are necessarily applied in the areas of strategic planning, marketing and sales, and reservations management of the hotels.

Finally, it is necessary to pursue integration of the application of ICT, and commitment of functional units to the use of ICT. Continuous innovation in the application of ICT, and enhancement of the application of ICT will also add a lot of value to performance. Overall, there is need for technological expert support for ICT application, and top management support in the application of ICT.

4.3 Operationalisation and measurement of pre-emptiveness

It will be necessary to operationalise of pre-emptive actions as challenges detected with the aid of ICT as outlined above emerge. This will require a poise in hotels of strategic, dynamic forward planning that is driven by regular, deliberate anticipation of possible challenges and needs of hotel guests. Basic strategies to use in this venture would include identification of

Vol. 10, No. 03; 2025

ISSN: 2456-3676

vulnerable activities of hotel service workflows. Establishing human resource and ICT based monitoring systems is a natural follow through.

These are then reinforced with appropriate pre-emptive action that emerge from established rapid response arrangements. Such arrangements would require regular on-the-job upskilling of hotel workers. On its part, measurement of performance does require the use of quantifiable metrics that can serve as key performance indicators. Such would include guest satisfaction scores and complaints rates, employee feedback and response rates as well as pre-emptive actions taken, volume of repeat visitors

5. Important considerations excluded on account of the appointed study scope.

Making Kenyan hotels the choice destination is not the exclusive preserve of competitive advantage. There are other incentives that promote the country's attractiveness to tourists. A venture to holistically resolve the observed problem of a dwindling international market share would necessarily embrace other alternative avenues of investigation. These would include understanding the place of governance, security, infrastructure and international geo-politics in marketing. They in this case constitute useful leads that would guide future research.

Marketing also takes many forms, bringing together other players other than the hotels. It for instance is necessary to understand the role of the electronic and print media in posturing the country as an ideal tourist destination. Initiatives to build diversity and therefore expand the attractions that draw tourists to this country can be pursued through well-guided research. Lessons from other international destinations that do not enjoy the advantage of the uniquely rich flora and fauna that we have provide other interesting options for investigation.

The CAPITA construct of hotels has been shown in this study to be a useful tool by which to relate competitive advantage to the application of ICT. Its composition has however not been tested in this study. This can be done with more focused investigation that seeks to confirm and if possible re-define the basic centers of activities in hotels. Such an investigation would necessarily require the use of advanced multivariate analytical techniques to authenticate the actual identity of these constituents of the CAPITA model. They would also move research to the next natural step of accurately determining the relative contribution of each of the dimensions so identified to defining this CAPITA construct.

Competitive advantage in the sense of improved efficiency and productivity depends on other aspects of the hotel than just the application of ICT. Hotels can be efficient depending on their organizational structure and management, as well as leadership styles. There are some mainstream theories in this respect such as total quality management, and autocratic, dictatorial, paternalistic, democratic, charismatic, empowering, consultative, laissez faire, task oriented, and people-oriented leadership styles, that bear testing in the country, to determine how effectively they influence performance of hotels. Research in these areas would be a welcome boost as it

Vol. 10, No. 03; 2025

ISSN: 2456-3676

would when combined with the focus of this study on the application of ICT, provide more comprehensive resolution that helps improve the performance of hotels.

The determined interest of this study, to attract the international market, raises questions regarding the role of our local market in promoting business for Kenyan hotels. Research that seeks to understand this local market, and one that also seeks to drive innovation into ways of stimulating the market to play a more competitive role in consuming hotel products and services. It would bring stability to this important sector of the national economy, and to a great extent, help ameliorate the malignance of the threats that result from international competition in the international market. Further, research into possibilities of diversifying away from the traditional international markets that have in the past patronised Kenyan hotels and the tourism trade in this country would serve well to diminish the current stranglehold that these traditional markets have on our tourism trade.

Finally, it would be interesting to investigate the types of computer systems in use in hotels nationally, and to also determine their usefulness, with a mind to recommend the ideal versions or forms that would best serve the purposes for which hotels are in operation.

6. Suggestions on specific related areas for further research

There is value in determining particular relationships of the elements of ICT and the functions of the pre-emptiveness activity node. This would promote more effective positive intervention for improved performance. Additionally, focused attention on the function and aspects of pre-emptiveness, and their surrogates can yield increased accuracy in detecting specific points at which to direct necessary intervention. Attention should also be directed to those variables that yield no response to determine possible re-design of their dispositions to stimulate sensitivity to ICT interventions. How to stimulate this change so that their salient information and communication nature becomes active is a worthwhile challenge to pursue. There is additional value in expanding the respondent composition to include customers and their assessment of the services offered by the hotels. This would serve as a believable validation of the current judgement of performance that relies solely on the perspectives of hotel management and systems operators.

References

Alaa-Eldeen, Mennatullah, Tawfik, Ahmed and Eldeen, Ashraf Tag, 2023. Crisis of Competition: A Conceptual Review of Hospitality and Tourism Industries. Athens Journal of Tourism - Volume 10, Issue 1, March 2023 – Pages 45-62.

Alonso, Kok, Bressan, O'Shea, Sakellarios, Koresis, Solis, and Santoni, 2020. COVID-19, aftermath, impacts, and hospitality firms: An international perspective. International Journal of Hospitality Management. doi: 10.1016/j.ijhm.2020.102654.

Anser, Muhammad Khalid; Yousaf, Zahid; Usman, Muhammad; Yousaf, Seemab; 2020. Towards Strategic Business Performance of the Hospitality Sector: Nexus of ICT, E-

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Marketing and Organizational Readiness. Sustainability 2020, 12(4), 1346; https://doi.org/10.3390/suf12041346.

Birrell, Carole Louse, 2020. Teaching Sample Survey Design. A project Using a Virtual Population. Pages 165-174. Journal of Statistics Education. Published online: 16, July 2020. https://doi.org/10.1080/10691898.2020.1780173.

Buhalis, Dimitrois, 1997. Information technology as a Strategic Tool for Economic, Social, Cultural and Environmental Benefits Enhancement of Tourism at Destination. Region, Progress Tourism and Hospitality Research, 3, pp., 71-93.

Central Bureau of Statistics, 2002. Economic Survey of Kenya. Ministry of Planning and Finance, Republic of Kenya, pp., 185.

Central Bureau of Statistics, 2003. Economic Survey of Kenya. Ministry of Planning and Finance, Republic of Kenya, pp., 185,188 &189.

Central Bureau of Statistics, 2005. Economic Survey of Kenya. Ministry of Planning and Finance, Republic of Kenya.

Cho, W & Olsen, M., 1998. A case study to understanding the Impact of Information Technology On Competitive Advantage in the Lodging Industry. Journal of Hotel Tourism Research, Vol. 22, (4), pp., 376-394.

Central Bank of Kenya, Monetary Committee, 2022. Hotels Survey, July 2022. Republic of Kenya.

Cooper, Donald R. & Emory William C., 1995. Business Research Methods. Irwin Advantage series for Computer Education, Irwin series in Statistics, Chicago, McGraw-Hill Companies Inc.

Ndubi, Edgar, 2009. Factors Influencing Hotel Room Supply and Demand in Kenya: A Simultaneous Equations Model. Productive Sector Division, Kenya Institute for Public Policy Research and Analysis. KIPPRA Discussion Paper No. 97, 2009.

Gacheke, Kendi, 2023. Influence of Digital Marketing Strategies on Customer Loyalty among four-star Hotels within Nairobi, Kenya. Unpublished Master's degree thesis, United States International University of Africa.

Ghanad, Anahita 2023. An Overview of Quantitative Research Methods. International journal of multidisciplinary research and analysis. Page No. 3794-3803, DOI: 10.47181/ijmra/v6-i8-52,I.

Gregory, S., 1978. Statistical Methods and the Geographer. 4th edition, Longman Group Limited.

Hayslett, H. T., (Advisory Editor: Patrick Murphy) 1983. Statistics Made Simple. William Heinemann Ltd.

Kilali, Beatrice Nduku, 2016. Factors Influencing Adoption of Information Communication Technology in Management of Hotels. Unpublished Master's degree thesis, University of Nairobi, Kenya.

Kiptanui, Jepkorir Marion; Karei, Racheal & Makomere, Julie, 2024. Effect of Automated Check in on Service Delivery in Star-Rated Hotels in Uasin Gishu County, Kenya. Journal of Frontiers of Humanities and Social Sciences (pp. 68-79). Issue DOI: https://doi.org/10.69897/jofhscs.v2i3.

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Kothari, C. R., 1996. Research Methodology: Methods and Techniques. 11th reprint, V. S. Johri for Wishwa Prakashan, a Division of Wiley Eastern Limited, New Delhi.

Knott, Eleanor; Rao, Aliya Hamid; Summers, Kate; and Teeger, Chana, 2022. Interview in the social sciences. Nature review – methods primers. ID: (2022) 2:73.

Lapin, Lawrence, L., 1981. Statistics for Modern Business Decisions. 3rd edition, Harcourt Brace Jovanovich, Inc.

Maringa, Leah Wamuyu Kagumba and Maringa, Paul Mwangi. 2011. Gaining Competitive Advantage in Hotels Through the Application of Information Technology: A case of 2 – 5 star rated hotels in Kenya. East African Journal of Information Science (EAJIS), Volume 3.1, 2011. Department of Information Science, Moi University, Eldoret, Kenya, http://www.mu.ac.ke/academic/schools/is/journal/eajis.html, http://www.mu.ac.ke/academic/schools/is/eajis.html.

Maringa, Leah Wamuyu Kagumba and Maringa, Paul Mwangi. 2009. Performance Enhancement of the Catering Information Systems in E-Hotels through ICT Interventions. Africa Habitat Review (AHR), vol. 3 No. 3, [October 2009), pp., 189 – 199, Journal of the School of the Built Environment, University of Nairobi.

Mezmir, Esubalew Aman, 2020. Qualitative Data Analysis: An Overview of Data Reduction, Data Display and interpretation. Research on Humanities and Social Sciences. ISSN 2224-57666 (paper). ISSN 2225-0484 (online), vol.10, No.21.

Miller, Delbert 1991. Handbook of Research Design and Social Measurement. 5th Edition, Sage Publications.

Moenga, Alice & Rotich, Dorothy, 2023. Influence of Technology and ICT Policies on Hotel Guest Satisfaction in the Hotel Industry: A Case of 4 and 5 Star Rated Hotels in Nairobi City. Journal of Hospitality and Tourism Management Volume 6(2) pp., 42-59. Stratford Peer Reviewed Journals and Book Publishing. https://doi.org/10.53819/81018102t6054.

Mohajan, Haradhan Kumar, 2020. Quantitative Research: A Successful Investigation in Natural and Social Sciences. Journal of Economic Development, Environment and People, Volume 9, Issue 4, 2020, pp.52-79.

Mugenda and Mugenda, 1999. Research Methods: Qualitative and Quantitative Approach. Act press, Nairobi.

Muriuki, E.M. & Tumuti, J., 2024. Influence of Information Communication Technology Infrastructure on Operational Efficiency of Upscale Hotels in Nyeri County, Kenya. Eastern Africa Journal of Contemporary Research, 4(1), 33–42.

Mwangi, Z. M., & Ngari, J. M., 2022. Technology Orientation and Sustained Competitive Advantage in Star-Rated Hotels in Kenya. The University Journal, 5(1), 131-142.

Nachmias, C and Nachmias D., 1996. Research Methods in Social Sciences. 5th edition, St. Martin's. New York.

National Tourism Crisis Management Steering Committee (NTCMSC), 2020. Digitizing Travel and Tourism Industry in Kenya. Ministry of Tourism and Wildlife. Government of Kenya.

Obonyo George Otieno; Okeyo David Omondi & Kambona, Oscar Ouma 2017. Effect of Management Practices on Actual ICT Application in Kenyan Hotels: A PLS-SEM

Vol. 10, No. 03; 2025

ISSN: 2456-3676

Approach, International Journal of Hospitality & Tourism Administration. DOI: 10.1080/15256480.2017.1305311.

Sethi, V., and W. R. King 1994. Development of Measures to assess the extent to which an Information Technology Application provides Competitive Advantage. Management Science, 40 (12), 1601-1627.

Shaughnessy, J. J., and B. E., Zechmeister 1997. Research Methods in Psychology. 4th Edition, McGraw-Hill Companies Inc.

Spoerr, Daniel, 2020. Analysis of Hotel Selection Attributes and Their Significance for Different Groups of German Leisure Travelers. Journal of Quality Assurance in Hospitality & Tourism, 22 (3), 312-335. https://doi.org/10.1080/1528008X.2020.1774032.

Yego, Stellah Chebet, 2015. Strategic Factors Influencing Growth of Hotels in Kenya, (A Survey of Selected Hotels in Mombasa County). International Journal of Business Management. Vol 3, Issue 10, October 2015.

Taherdoost, Hamed, 2021. Data Collection Methods and Tools for Research: A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects. International Journal of Academic Research in Management (IJARM), 2021, 10 (1), pp. 10-38. hal-03741847.

Thorndyke, Edward L., 2023. Measurement in the Social Sciences – Whatever exists at all exists in some amount. Sage publications inc.

Wu, Changbao and Thompson, Mary E., 2020. Sampling Theory and Practice. 3-030-44246-0 (eBook) https://doi.org/10.1007/978-3-030-44246-0, Springer.