DISRUPTIVE INNOVATION STRATEGIES AND PERFORMANCE OF SELECTED AIRLINES IN KENYA

[1*]Eunice Thecla Chepkemboi

[1]Post-Graduate Student: Jomo Kenyatta University of Agriculture and Technology

[*]Corresponding Author email: eunichep@gmail.com

[2]Dr. Samson Nyang'au Paul

Lecturer: Jomo Kenyatta University of Agriculture and Technology

Abstract

Purpose: This study sought to identify the effect of the uptake of disruptive innovations on the performance of selected airlines in Kenya. Its specific objectives included to determine the impact of digital platforms, mobile technology, Blockchain technology and travel intermediaries on the performance of selected airline in Kenya. This study was restricted to three airlines in Kenya, namely, Kenya Airways, Jambojet and Fly540.

Methodology: It focused on 120 staff working within the Nairobi offices of these airlines based on their familiarity with strategic initiatives employed in responding to disruptive innovations. The theoretical review featured the following theories: the theory of disruptive innovations; radical innovations theory; the theory of open innovation; and diffusion of innovations theory. This study applied a descriptive research design since it was focussed on describing the characteristics of the participants involved in the study since this is a social research. It adopted a census method for determining the sample size. It used self-administered questionnaires on 120 respondents from the target population who were given two weeks to complete the questionnaires before collection using a drop and pick arrangement was adopted. The study used a five point Likert scale to develop the questionnaire to use in tandem with two measures of central tendency, standard deviation and mean, to describe the data. The data was then examined using the Statistical Package for Social Sciences (version 22) to conduct regression analysis, descriptive analysis and inferential analysis. The results were then presented using graphs and tables.

Results: The results indicate that travel intermediaries had the strongest positive correlation with performance followed by mobile technology adoption, digital platforms and blockchain technology, respectively. Further, whilst organisations in the industry have established commendable strategies to ensure digital platforms reliability and mobile technology adoption, they have yet to embrace blockchain technology as a strategy for coping with disruptive innovations. The same case applies to travel intermediaries where the local airline companies have not implemented effectively thus losing market to other upcoming international airlines.

Unique contribution to theory, practice and policy: The study recommends that the management of airlines in Kenya to adopt blockchain technology in order to further strengthen their IT systems and use this as a means of resisting possible blockchain technology-driven disruptive innovations. The companies also ought to embrace appropriate technologies to support travel intermediaries through which they tap the low income earners thus sustaining their performance.

Key Words: *Digital Platforms, Mobile Technology, Blockchain Technology, Travel Intermediaries and Performnce of Airlines*

1.1 INTRODUCTION

This study is guided by the theory of disruptive innovation by Christensen M. Clayton (Christensen, Raynor & McDonald, 2015) who describes 'disruptive innovation' as a new technology that unexpectedly displaces an established one. It is a process by which a product or service takes root initially in simple application at the bottom of a market and then relentlessly moves up market, eventually displacing established ones. In analysing the theory, King and Baatartogtokh (2015) observe that it has been so widely accepted that its influence has spread beyond the business world to encompass a myriad of social problems including poverty, lack of access to healthcare, illiteracy, and unemployment. According to Christensen (2015), 'disruption' describes a process whereby a smaller company with fewer resources is able to successfully challenge an established incumbent business. Specifically, as incumbent focus on improving their products and services for their most demanding (and usually most profitable) customers, they exceed the needs of some of the segments and ignore the needs of others. Entrants that prove disruptive begin by successfully targeting overlooked segments, gaining a foothold by delivering more-suitable functionality-frequently at a lower price (Christensen, 2015). Michael Porter identified three generic strategies that an organization can adopt, namely, cost leadership, differentiation and focus (Tanwar, 2013). Such strategies can be harnessed to disruptive innovation through a process of development, implementation and execution of strategy-to-innovation relationships ensuring that proper integration of the same so as to enhance the much-needed flexibility of the strategies whenever barriers arise (Zentner, 2015). Indeed, Vertakova (2016) affirm that firms that sell disruptive strategies through the conquest of new markets benefit through the lack of competition and consumption since their products are so cheap and easy to handle those large groups of the population, who hitherto were unaware of the products begin to consume them.

1.2 Statement of the Problem

There is an ongoing race in the global digital economy to find better, faster and more efficient technologies to support the value chain of any organization. The information technology platform should both effectively support the organization and simultaneously seek innovative technologies that will give the organization a competitive advantage within a specific industry marketplace. However, when disruptive technologies enter the industry marketplace, the potential to change the business landscape is increased (Kothman & Faber, 2016). The airline industry has been a great benefactor of the changes brought about by disruptive innovation and in particular airlines in Kenya. Examples of such technologies are; adoption of electronic documents, development of mobile payments platforms for example M-pesa, Airtel money, and Equitel which have influenced customer buying habits, Internet and social Media, and the emergence of mobile platform as an airline distribution channel. However, according to Viellechner and Wulf (2010), many incumbent airlines have tended to display unfortunate lethargy in their responses to disruptive innovations owing to a number of factors including knowledge insufficiencies, inadequate self-concept, inflexibilities, and financial concerns. This implies that these airlines have been underperforming in the task of responding appropriately to disruptive innovations due to the excuses given. Gemici and Alpkan (2015) add that established airlines tend to overlook disruptive innovations initially since interpret them as inappropriate to their current customer preferences which invariably proves to be foolhardy since the disruptive innovations continue to evolve into better solutions to the available offerings by performing better in launching more progressive products. The airline industry in Kenya faces increasing

pressures to adopt best industrial practices since there is an increasing number of visitors arriving through the Jomo Kenyatta International Airport (JKIA) and Moi International Airport, in fact the numbers increased from 74,838 in January 2016 to 105,862 in December 2017 (KNBS, 2018). According to Accenture (2016), 39% of all airline executives tend to view the potential sources of disruption to be likely to emerge from within the industry which is exemplified by indications that within three years, less than 50% of all passengers will make their bookings through airline websites. Due to the development of these disruptive innovations, that provide convenience, efficiency and flexibility for accessing and making payments for a wide variety of goods and services in other industries, consumers expect that the same will be offered in the airline industry. The study, therefore, sought to investigate the effect of disruptive innovations on organizational performance with its main focus being selected airlines operating in Kenya.

1.3 Research objectives

i)   To determine how digital platforms affect the performance of selected airlines in Kenya.
ii) To find out how mobile technology adoption affects the performance of selected airlines in Kenya.
iii) To investigate the effect of blockchain technology on the performance of selected airlines in Kenya
iv) To analyse the influence of adoption of travel intermediaries on performance of selected airlines in Kenya

2.0 LITERATURE REVIEW

2.1 Theoretical Review

Theory of Disruptive Innovation

This theory was propagated by Clayton Christensen in 1997, in his seminal book *The Innovator's Dilemma*, where he provided an explanation for the failure of respected and well managed organisations by arguing that good managers run the risk of ignoring rivals with disruptive innovations by doing the very things that they needed to succeed (King & Baatartogtokh, 2015). According to Christensen, Davidian, Kaiser and Foust (2011), established or incumbent firms compete in a given market by developing the performance metrics for meeting the needs for both low-end and high-end customers, and in the course of time the performance provided exceeds the performance demanded causing a performance surplus. However, this situation changes when new entrants come up with innovations that are either "sustaining"-these can evolutionary improvements of established technologies, or technological breakthroughs that raise the level of product performance; or "disruptive" -these can be either "low-cost" or "new market" and tend to be simpler, less expensive, and more convenient that products offered by incumbent organizations. Disruptive innovations help create new markets and value networks by improving products and services in ways that the market does not expect, over a period of time thereby leading to displacement of earlier technology (Naqshbandi & Singh, 2015). Whilst disruptive innovations may be initially inferior and unwanted by the consumers, they eventually overtake the existing products and technologies and are a viable strategy for use by an organization seeking growth. In fact Christensen, Raynor and McDonald (2015) explain that entrants target overlooked segments in the market and gain a foothold by delivering more suitable functionality such as lower prices, and are able to escape the attentions of the incumbents who are initially unperturbed; but, these entrants then move upmarket and start delivering the performance that

mainstream customers require, while preserving the advantages that drove their early success then cause disruption when these customers start adopting their products.

Radical Innovations Theory

This theory which was the brainchild of Joseph Schumpeter, holds that large organisations are destroyed by entrepreneurs when they seize commercial opportunities from inventors and introduce innovations that so superior that they not only compete but destroy incumbent firms and their respective economics of scale (Kasmire, Korhonen & Nikolic, 2012). Coccia (2016) posits that a radical innovation is a new product, process or service that fundamentally alters the behaviour of organisations, habits of users and the structure of markets and is a source of strategic advantages for the organisations and improvement of the societal well-being. Vercauteren (2008) argues that the development of highly innovative products requires a strong customer orientation which invariably leads to increased performance of radically innovative products. Albors-Garrigos and Hervas-Oliver (2012) affirm that radical innovation is typically characterized by discontinuities that either enhance (initiated by incumbents) or destroy (initiated be new entrants) the competences of an organization in an industry. This is a view that is echoed by Coccia (2016) who maintains that radical innovations are discontinuous events which are unevenly distributed over sectors and over time. Competence-enhancing discontinuities are order-of magnitude improvements in price or performance which build on existing knowledge and skills by refining and extending an established product's design; while competence destroying discontinuities significantly change alter the knowledge and skills required to develop and produce a product, thereby rendering existing knowledge obsolete (Bergek, Berggren, Magnusson & Hobday, 2013).
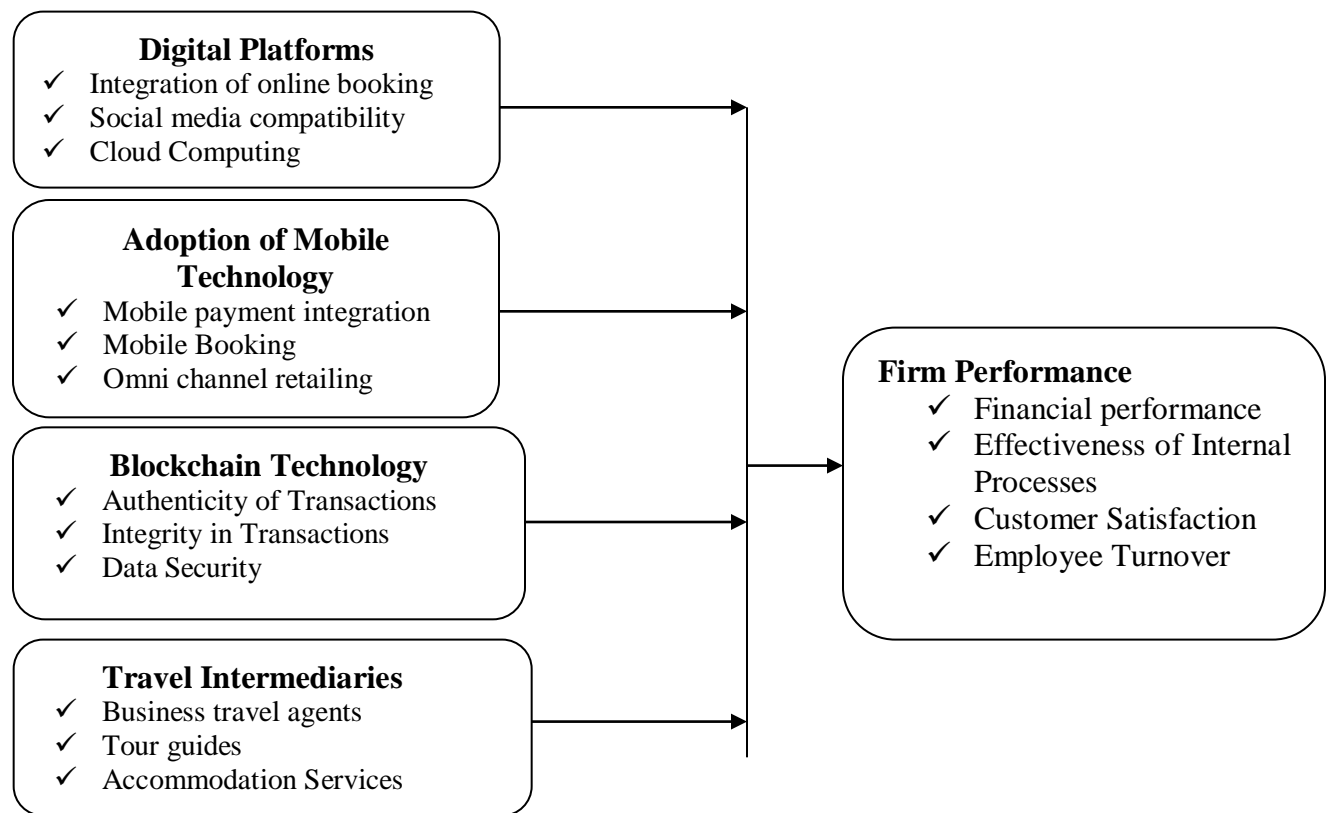
Theory of Open Innovation

This theory supposes that organisations can and should utilise external as well as internal ideas, and internal and external channels to market, while they endeavour to advance their technology (Dabić, Bašić, & Vlajčić, 2016). The utilization of alternative paths to the market will ensure that organisations become more productive, effective in their use of internal and external resources, introduce higher quality products into the market, and reduce delays in the supply and value chains (Juell-Skielse & Hjalmarsson-Jordenius, 2017). According to Van de Vrande, de Jong, Vanhaverbeke, and de Rochemont, (2009) there are three dimensions of open innovation: inbound the process of seeking innovation on the market and incorporating it into organizational processes; coupled-collaboration in innovation; and outbound-externalization of financial and non-financial innovation at least partially developed by the organization but which might be a good fit for the organizational vision and strategy. According to Vanhaverbeke and Roijakkers (2013), service-oriented organizations can apply open innovation to determine which strategic drivers to leverage in order to gain competitive advantages, then other companies can utilize technological innovations to leverage the strategic drivers that have been identified; thus, the initial organizations need to setup a network that includes the latter organizations so that they can derive competitive advantages from their technological innovations so as to boost their service delivery. Liang, Chen and Pee (2013) add that in order for such organizations to exploit open innovation effectively, they should ensure that they incorporate appropriate knowledge distribution and internal knowledge culture, as well as interaction and collaboration among the employees which will be driven by both internal and external IT capability.

Diffusion of Innovations Theory

The proponents of this theory suggest that individuals and organisations use interpersonal communication channels to evaluate a new idea and decide whether or not to adopt the idea on the basis of discussions with peers or organisations that have already adopted or rejected the innovation (Rogers, Singhal & Quinlan, 2009). The innovation diffusion process attempts to reduce uncertainty about the innovation by considering a number of attributes including: relative advantage-the degree to which an innovation is perceived as being superior to the idea that it is superseding; compatibility-the extent to which an innovation is viewed as consistent with the existing values, past experiences and needs of potential adopters; complexity-the extent to which an innovation is seen to be difficult to understand and use; trialability-the extent to which an innovation may be experimented with on a limited basis; and observability-the extent to which the results of an innovation are visible to others (Dearing & Cox, 2018). Ultimately, individuals' or organisations' perception of these characteristics influence their adoption of innovations. According to Lien and Jiang (2017) individuals' personal characteristics their rate of adoption of innovations and these characteristics can be used to categorize adopters into five groups: innovators make up approximately 2.5% of the total adopters and are the pioneers with the most courage to accept an innovation; the next 13.5% are early adopters who are stakeholders in a social system and usually lead others to change; the third group are early majority that are highly alert and interested in new ideas but only adopt them after others' successful experiences; the fourth group are the late majority who are usually more conservative, cautious and suspicious so adopt innovations after half the population has already adopted; and laggards who are vulnerable groups with resource constraints, limited information and unstable incomes.

2.2 Conceptual Framework

Independent Variables   **Dependent Variable**

Journal of Business and Strategic Management
ISSN 2520-0402 (Online)
Vol.4, Issue No.1 pp 47-68, 2019
www.carijournals.org

Figure 1 Conceptual Framework

2.3 Empirical Review

Digital Platforms

Digital platforms refer to a type of as-a-service business model ecosystem where online internet based computer technologies are applied as the infrastructure to connect collaborative and interactive networks of suppliers and consumers in real time as the value proposition (Parker, Alstyne & Choudary, 2016). In order for digital platforms to be reliable they must be replicable consistently across organisations and industries. Hossain and Larsen (2017) explain that digital platforms exhibit reliability through consistent delivery of capabilities such as problem-solving, co-creation, online marketing, public crowd-sourcing, collective intelligence, and freelancing. Bouwer (2016) posits that the digital platform ecosystem facilitates the direct procurement of new innovations by consumers, otherwise known as Business-to-Business-to-Consumer (B2B2C) type of business model.

Mobile Technology Adoption

Mobile technology adoption refers to rate of uptake or the use of hand-held devices such as mobile phones and tablets to relay information over a wireless network (Darcey, Maxwell & Green, 2016). The first indicator of mobile technology is mobile payment integration. According to Gannamaneni, Ondrus and Lyytinen (2015), mobile payment platforms refer to mechanisms that avail mobile proximity payments for goods and services using a mobile phone at a physical point of sale terminal and can be conducted both online and offline. The second indicator of mobile technology is mobile booking applicability. Mobile booking refers to the use of mobile systems that incorporate features such as wireless interface and location-based services to provide travellers with access to information anytime on demand in order to fulfil their mobility-related requirements (Park & Tussyadiah, 2017). The third indicator of mobile technology is the integration of omni-channel retailing. Murfield, Boone, Rutner and Thomas (2017) define omni-channel retailing as the use of multi-channel distribution outlets to satisfy customer requirements through several but distinct distribution channels determined by the method of purchase (for example, in-store or online purchases) and fulfilment preference (for example, home delivery or pick-up in store). Hüseyinoğlu, Galipoğlu, and Kotzab (2017) quote Fairchild (2014) by stating that omni-channel retailing combines conventional commerce with electronic commerce by integrating business processes aimed at satisfying consumer demand, regardless of place or time, to as to create a seamless shopping experience.

Blockchain Technology

Hill (2017) defines blockchain technology as a form of distributed ledger technology (where ledgers are undeniable, tamperproof, uncensorable records of all transactions from the first transaction) where information is stored in the form of a "chains-of-blocks" data structure across an intricate network. The first indicator of blockchain technology is the authenticity of the transactions. This is the ability of the transactions carried out through the blockchain technology to meet the legitimacy conditions and be verifiable by the clients. The second indicator of blockchain technology is the integrity in the transactions. The motive behind adoption of any disruptive technology is to meet customer needs and this can only come with first winning the customer trust(Beck, Stenum, Lollike, & Malone, 2016). The third indicator of blockchain technology is data scrutiny. This is the ability to analyse the customer data and ensure that their transactions can be traced and scaled within reasonable period of time(Swan, 2015).

Travel Intermediaries

Travel intermediaries are the parties that the airline companies outsource or partner with to enhance service delivery to their customers. Most airline companies experience cancellation of customer tickets and delayed flights over varied reasons. However, emerging airlines have come up with a strategy to ensure the delayed customers are properly treated by offering them free or subsidized hotels or other accommodation procedures to ensure they are well catered for. This according to Dhar and Sundararajan (2017) is one of the disruptive strategies that modern business ought to adopt. Christensen (2013) contends that a disruptive strategy ought to be customer-focused and focusing a low-income market niche` and this exactly what customer data analytics seeks to achieve. There are three types of travel intermediaries: travel agents, business travel agents and tour operators. Each of them is an integral part of the travel industry. Firstly, travel agents perform as sales intermediaries between the end user and companies such as airlines, car rental and ferry operators. They represent package tour companies, airlines, coach and rail operators, while they advise potential travellers on a large spectrum of travel related issues concerning the journey itself, accommodation and final destination (Bhatia, 2012).

Firm Performance

Performance is a determination of how successfully an organisation has been able to meet its objectives and targets in relation to its competitors and in the face of resource constraints (Elena-Iuliana & Maria, 2016). Jenatabadi (2015) explains that performance is the result of the use of organisational inputs and resources to achieve established organisational objectives. Dobrin, Popescu, Popescu and Popescu (2012) posit that performance is an unstable balance between effectiveness and efficiency since it always in a state of flux. The first indicator of performance is financial performance. According to Naz, Ijaz and Naqvi (2016), financial performance relates to an assessment of the activities that lead to the generation of higher sales, greater profitability, and increased shareholder wealth, and include the management of current and long-term assets, getting financing, equity, revenues and expenses. The second indicator of performance is the effectiveness of internal processes. Internal processes refer to the operational mechanisms through which organisations can achieve their performance expectations and provide a target reference for employees to act, make decisions and make improvements (Tibbs & Lang'at, 2016). The third indicator of performance is the level of customer satisfaction. Customer satisfaction is the psychological response of the customer following his or her previous experience when compared to the expected or perceived performance of a given product or service (Sucháneka & Králová, 2018). Nguyen, Nguyen, Nguyen and Phan (2018) agree with this definition by stating that customer satisfaction is assessed by comparing the actual performance of a product or service relative to the customer expectation.

3.0 RESEARCH METHODOLOGY

The study adopted a descriptive research design. The study targeted 120 staff working from three airlines (Kenya Airways, Jambojet, and Fly540) within the Nairobi offices. The study used structured questionnaires with close ended questions to collect data captured through a 5-point likert scale. Inferential and descriptive statistics was used to analyse data. Results of the analysis were presented by use of tables and figures. Inferential statistics was used to establish the association between independent variables and dependent variable. The study used the following regression model:

Journal of Business and Strategic Management
ISSN 2520-0402 (Online)
Vol.4, Issue No.1 pp 47-68, 2019
www.carijournals.org

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon.$ Where Y = Where: Y= The project's dependent variable (Performance), X_1= the first independent variable (Digital Platform), X_2 = the second independent variable (Mobile Technology), X_3 = the third independent variable (Blockchain Technology), X_4 = the fourth independent variable (Travel Intermediaries), ε= the error term and $\beta0$= the constant term.

4.0 RESULTS AND FINDINGS

The study administered 120 questionnaires where 97 questionnaires were filled and returned. This represented a response rate of 81% which conforms well within the recommended 50% return rate by Mugenda and Mugenda (2013).

4.1 Descriptive Statistics and Analysis

Digital Platforms Reliability

The distribution of responses to questions relating to digital reliability is shown in Table 1 below. According to the results, 90% of the respondents agreed that the organisation has bundled other services such as ability to reserve seats, buy baggage on its online booking application as a means of coping with disruptive innovations. This is consistent with Gautum (2015) who found that many airlines also bundle other services such as airport transfer, accommodation services, car hire and airport parking; additionally, customers are able to check-in online. Further, the results show that approximately 90% of the respondents agreed that the organisation's online booking service allows users to access information pertaining to hundreds of flights which agrees with Garvey and Sankaranarayanan (2012) who determined that many airlines have now divested their holdings to such as Amadeus, Galileo, Sabre, and Worldspan all of which allow users access to flight information pertaining to hundreds of airlines so that they can make flight reservations accordingly. The results also indicate that 63% of the respondents felt that the organisation has aligned its social media with its strategic objectives, however, 25.8% were uncertain about this. This is consistent with Calco and Regusci (2016) who found that the strategic value of social media for the airlines is contingent on its alignment to the company objectives and policies in order to increase customer engagement and fan numbers. Additionally, the results showed that 73.7% of the respondents agreed that the organisation has dedicated staff for managing its social media activities which is in line with NIIT (2010) who posited that airlines generally apply two marketing models when using social media, namely: dedicated use staff whose only work is to manage the social media accounts; and integrated gathers staff from different departments in the airline to manage the social media accounts. There was an even split of 39.2% between those respondents who agreed that the organisation uses cloud computing visualization platform to manage the reservation management, baggage management, finance, safety, customer relationships, and crew scheduling, and those who were uncertain. This contracted the findings of Vagdevi and Guruprasad (2015) that cloud computing systems such as Huawei's Fusion Cloud desktop computing solution enable the attainment of strategic advantages by managing the reservation management, baggage management, finance, safety, customer relationships and crew scheduling in a more efficient and cost effective manner. Lastly, 68% of the respondents were either uncertain (47.4%) or in disagreement (20.6%) that the organisation's use of cloud computing has led to cost savings due to reduced power consumption and lower hardware infrastructure costs. This contradicts Owuonda (2016) who affirmed that cloud computing can benefit the aviation industry.

Table 1: Descriptive Statistics of Digital Platforms

Influence of digital platforms reliability on performance	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
The organisation has bundled other services such as ability to reserve seats, buy baggage on its online booking application as a means of coping with disruptive innovations	0%	3.1%	7.2%	62.9%	26.8%
The organisation's online booking service allows users to access information pertaining to hundreds of flights	0%	2.1%	8.2%	63.9%	25.8%
The organisation has aligned its social media with its strategic objectives	1.0%	10.3%	25.8%	48.5%	14.4%
The organisation has dedicated staff for managing its social media activities	2.1%	4.1%	16.5%	49.5%	27.8%
The organisation uses cloud computing visualization platform to manage the reservation management, baggage management, finance, safety, customer relationships, and crew scheduling.	6.2%	15.5%	39.2%	29.9%	9.3%
The organisation's use of cloud computing has led to cost savings due to reduced power consumption and lower hardware infrastructure costs	6.2%	14.4%	47.4%	25.8%	6.2%

Mobile Technology Adoption

The breakdown of the responses to questions on mobile technology adoption are illustrated in Table 2. According to the results, "the organisation's mobile booking app enables customers to book, pay for flights, view flight information, select and reserve seats, and download boarding passes" had the highest mean of 4.3402 indicating that most of the respondents agreed with it. This affirms Mobgen (2015) who found that mobile payments have been adopted by airlines such as the British Airways where the airline's app enables customers to book, pay for flights, view flight information, select and reserve seats, download boarding passes, receive notifications and passwords for using the lounge Wi-Fi, collect loyalty points and immediately spend them on booking new flights. The next factor in terms of popularity was "the organisation has integrated the use of mobile wallets which has enabled mobile payments for electronic transactions" with a mean of 4.2887 indicating that the majority of respondents were in agreement. This was consistent with Rose (2011) who averred that that mobile phones have been transformed into mobile wallets which have been facilitated by agreements between telecommunication companies, banks and credit card companies, and compete with cash in many emerging markets such as Africa and India where they are used to pay for electronic transactions although their usage in the airlines industry. The results also indicated that the respondents were in agreement that the organisation uses different channels of interacting with its customers including airport kiosk, mobile app or website since this factor had a mean of 4.2062.

This tallied with Ali (2016) who determined that airlines can utilize omni-channel retailing to provide interactions between them and customers consistently and seamlessly on whichever sales

channel (include inflight, booking, or even check-in) they choose through their medium of choice airport kiosk, mobile app or website, to generate competitive advantages over their rivals since customers are willing to pay higher fees for premium inflight services like Wi-Fi and in-seat charging. The next factor was "the organisation uses an m-ticketing solution that enables business travellers to make bookings for their flights at customers' own convenience" with a mean of 4.1546 indicating a high level of agreement amongst the respondents. This is in agreement with Burmistrov (2009) who maintains that mobile booking is a component of mobile commerce as an m-ticketing solution particularly for business travellers (when they are away from their personal computers) on location aware mobile devices using Global Positioning System (GPS) sensors and designed in such a way that there is one operation per screen during the booking procedure. Most of the respondents also agreed that the organisation has gained strategic advantages by integrating different channels of interacting with customers as evidenced by the mean of 4.0206. The last factor in terms of popularity was the organisation has incorporated a mobile electronic tourist guide into its mobile app with a mean of 3.1649 indicating that there a moderate level of agreement among the respondents. This was consistent with Chan and Wang (2018) who determined that mobile booking technology has led to the development of relevant mobile information services such as mobile electronic tourist guides.

Table 2: Descriptive Statistics of Mobile Technology Adoption

The Influence of Mobile Technology Adoption on Performance	N	Mean	Std. Dev
The organisation has integrated the use of mobile wallets which has enabled mobile payments for electronic transactions	97	4.2887	.72109
The organisation's mobile booking app enables customers to book, pay for flights, view flight information, select and reserve seats, and download boarding passes.	97	4.3402	.70543
The organisation uses an m-ticketing solution that enables business travellers to make bookings for their flights at customers' own convenience	97	4.1546	.71210
The organisation has incorporated a mobile electronic tourist guide into its mobile app.	97	3.1649	1.03763
The organisation uses different channels of interacting with its customers including airport kiosk, mobile app or website.	97	4.2062	.74914
The organisation has gained strategic advantages by integrating different channels of interacting with customers.	97	4.0206	.73569
Valid N (listwise)	97		

Blockchain Technology

The distribution of responses to questions on blockchain technology applicability are illustrated in Table 3. According to the results 58.8% of the respondents agreed that the organisation has ensured the flexibility of its digital platforms for use in different applications. However, a considerable 29.9% of the respondents were uncertain about this indicating a lack of information amongst these respondents regarding the issue of flexibility. This agrees with Foroglou and Tsilidou (2015) who found that blockchain technology is flexible enough to be applied in different fields. Additionally, the results show that only 32% of the respondents agreed that the organisation has ensured the decentralisation, transparency and reliability of its services by using blockchain technology while the vast majority 43.3% were uncertain about this. This agrees with

D'Oriano et al., (2018) who found that the flexibility of blockchain technology is exhibited in blockchain distributed ledgers being applied in the storage of energy transactions and the enablement of demand response flexibility services at a micro-grid level so as to ensure decentralisation, transparency and reliability.

Table 3: Descriptive Statistics of Blockchain Technology

The Influence of Blockchain Technology Applicability on Performance	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
The organisation has improved the integrity of its information technology by enhancing the level of trust	2.1%	9.3%	29.9%	49.5%	9.3%
The organisation has incorporated the use of FlightChain technology which stores information on the block chain, using smart contracts to settle potentially conflicting data so as to establish a single version of truth for all users.	9.3%	15.5%	43.3%	22.7%	9.3%
The organisation has improved the strength of its IT systems which has enabled it to assume functions that were previously done by third parties.	6.2%	14.4%	18.6%	45.4%	15.5%
The organisation has been able to use Blockchain technology to resolve baggage handling deficiencies and promoting integrity.	16.5%	13.4%	38.1%	27.8%	4.1%
Blockchain has enhanced the level of security offered by organisation's ICT in its proof-of-existence and legal documents by only storing a fingerprint rather than the actual document then ensuring privacy and protecting the information which serves to promote authenticity and data security	12.4%	17.5%	39.2%	25.8%	5.2%
Blockchain technology has enabled the creation of digital identities for passengers, pilots, airport personnel, equipment and even aircraft parts thereby securing personal sensitive information.	10.3%	6.2%	43.3%	28.9%	11.3%

Further, the results indicate that 61% of the respondents agreed that the organisation has had difficulties in ensuring the immutability of its processes across different platforms. This tallied with Landerreche and Stevens (2018) who affirmed that blockchain immutability is assured by the fact that blockchain protocols initiate the process of building the blocks of participating nodes in a simplified append only procedure until such as point when there is an overall consensus on the state of all participating nodes, at which point it becomes unfeasible to erase or change. The results also showed that only 31.9% of the respondents agreed that the organisation' blockchain processes are too rigid to be customised while 38.1% were uncertain about this. This agrees with Braden (2018) who determined that blockchain is too rigid and difficult to change to suit different sets of circumstances. The results also showed that only 31% of the respondents agreed that the scalability of blockchain technology in the organisation has been hampered by the limited block size and prevalent consensus techniques while 39.2% were uncertain about this. Again this is consistent with Chauhun et al., (2018) who found that the scalability of blockchain technology is hampered by the limited block size and prevalent consensus techniques, a problem which escalates with every increment in the number of transactions which necessitate the need

Journal of Business and Strategic Management
ISSN 2520-0402 (Online)
Vol.4, Issue No.1 pp 47-68, 2019
www.carijournals.org

for more nodes to support the network while concurrently requiring an increment in the number of steps needed for the transaction to move and reach full consensus with every node. Finally, 40.2% of the respondents agreed that the organisation has had to perform trade-offs between decentralisation, security and scalability in order to make its blockchain technology more effective. This does tally with Lyons et al., (2019) who affirmed that in order to boost scalability, the designers of blockchain technology platforms should perform trade-offs between decentralisation, security and scalability.

Influence of Travel Intermediaries on firm performance

The fourth objective of the study was to assess the influence of travel intermediaries on performance of airline companies in Kenya. The respondents were asked to rate specific aspects of travel intermediaries in their respective firms based on a five-point Likert's scale where 5= strongly agree 4= agree 3=Moderate 2= disagree 1=strongly disagree. The findings as shown in table 4 revealed that on the first aspect which was that the organizations ensured that there were set travel agents for the travelling clients, majority of the respondents indicated that they practiced this as evidenced by a mean of 3.96 and a standard deviation of 0.73 while on the statement that the organizations cooperated with the travellers destinations' tour guides for subsidized fees, the respondents agreed as shown by a mean of 4.01 and a standard deviation of 0.71. The other aspect was that the organizations had set hotels in their destinations to provide affordable accommodation for the clients and in this, the respondents indicated that they practices as shown by a mean of 3.72 and a standard deviation of 1.08 while on the aspect that there were frequent price reviews to ensure the cheapest intermediaries are involved, most of the respondents agreed and this is evidenced by a mean of 3.59 and a standard deviation of 1.08. The respondents further agreed that as a result of adoption of intermediaries the airline had seen growth in the revenues as evidenced by a mean of 3.91 and a standard deviation of 0.95.

Table 4: Rating Statements on Travel Intermediaries

Statements	Mean	Std. Dev
The organization ensures that there are set travel agents for the travelling clients	3.96	0.73
The company organizes with the travellers destinations' tour guides for subsidized fees	4.01	0.71
There are set hotels in the airline's destinations to provide affordable accommodation for the clients	3.72	1.08
There are frequent price reviews to ensure the cheapest intermediaries are involved	3.59	1.08
Through adoption of intermediaries the airline has seen growth in the revenues	3.91	0.95

Firm Performance

The distribution of responses to questions pertaining to performance are illustrated in Table 5. Accordingly, the factor with the highest popularity amongst the respondents was "the organisation's financial performance influences its short term decision making and strategic planning" with a mean of 4.1443. This is consistent with Teker *et al.,* (2016) who posited that the financial performance of the top 20 airlines in the world is best depicted by four critical performance areas, namely: profitability which is indicated by Return on Asset (ROA), Return on Equity (ROE), and Net Profit Margin (NPM); operating which is indicated by average days

Journal of Business and Strategic Management
ISSN 2520-0402 (Online)
Vol.4, Issue No.1 pp 47-68, 2019
www.carijournals.org

for account receivables, average days for inventories, and average days for account payables; liquidity which is indicated by quick ratio, debt ratio, and times interest earned; and efficiency which is indicated by revenue per employee and revenue per aircraft.

Table 5: Descriptive Statistics of Performance

Performance	N	Mean	Std. Dev.
The organisation's financial performance influences its short term decision making and strategic planning	97	4.14	0.85
The organisation's direct expenditure, overhead costs, and operating lease rental costs have hampered its financial performance	97	4.03	0.93
The organisation has enhanced its internal processes by conducting businesses process re-engineering	97	3.49	0.90
The organisation has improved the efficiency of its core business processes by automating some of its operations	97	3.97	0.82
The organisation's service quality is a source of customer satisfaction	97	4.10	0.74
The number of employees leaving the organization has reduced drastically in the recent past	97	3.82	0.94

The next factor in terms of popularity was "the organisation's service quality is a source of customer satisfaction" with a mean of 4.1031 indicating that most of the respondents were in agreement. This tally with Suhartanto and Noor (2012) who found that among the key determinants of customer satisfaction in the airline industry are: service quality; employee attitude; promptness and accuracy of service; and physical evidence. This was followed by "the organisation's direct expenditure, overhead costs, and operating lease rental costs have hampered its financial performance" with a mean of 4.0309 also reflecting a high approval rating from the respondents. This agrees with Nabosu (2013) who posited that the critical determinants of financial performance at Kenya Airways are the number of aircraft cargo fleets, the amount of cargo, and growth of passenger numbers on the one hand (all of which had a positive influence on financial performance); and direct expenditure, overhead costs, and operating lease rental, on the other (all which had a negative influence on financial performance).

The respondents also agreed that the organisation has improved the efficiency of its core business processes by automating some of its operations as indicated by the mean of 3.9691. This is consistent with Njonjo (2014) who revealed that Kenya Airways decided to conduct business process re-engineering which included the automating of some of its operations such as the back Enterprise Resource Planning (ERP) software that has helped in making the processes that support the core business more efficient. The respondents also agreed that the number of employees leaving the organization has reduced drastically in the recent past as shown by the relatively high mean of 3.8247. This was in agreement with Suhartanto and Noor (2012) who found that among the key determinants of customer satisfaction in the airline industry are: service quality; employee attitude; promptness and accuracy of service; and physical evidence. Finally, the respondents expressed a moderate level of agreement that the organisation has enhanced its internal processes by conducting businesses process re-engineering as evidenced by the mean of 3.4948 which is consistent with Njonjo (2014) who found that Kenya Airways launched an aggressive strategic plan called mawingu which sought to increase its global footprint by increasing the number of flights from 56 to 115, increasing its presence from 4 continents to 6 which led to the increment in

the capacity of the JKIA as part of the improvement of the effectiveness of its internal business processes.

4.2 Inferential Statistics

Correlation Analysis

According to Hall (2015), the Pearson's Correlation Coefficient (r) is the ratio of the covariance of two variables representing a set of numerical data, and normalized to the square root of the variances. Table 6 illustrates the Pearson Correlation Matrix.

Table 6: Pearson Correlation Matrix

		Firm Performance	Digital Platforms	Mobile Technology	Blockchain Technology	Travel Intermediaries
Firm Performance	Pearson Correlation	1				
	Sig.					
	N	93				
Digital Platforms	Pearson Correlation	.547**	1			
	Sig.	.000				
	N	93	93			
Mobile Technology	Pearson Correlation	.411**	.451**	1		
	Sig.	.000	.000			
	N	93	93	93		
Blockchain Technology	Pearson Correlation	.401**	.408**	.309**	1	
	Sig.	.000	.000	.000		
	N	93	93	93	93	
Travel Intermediaries	Pearson Correlation	.533**	.217**	.526**	.401**	1
	Sig.	.000	.006	.000	.000	
	N	93	93	93	93	93

**. Correlation is significant at the 0.01 level (2-tailed).

The table indicates that two of the independent variables, travel intermediaries and digital platforms, had strong positive correlations of r = 0.547 and r = 0.533, respectively, with the dependent variable while blockchain technology and mobile technology had a moderately

Journal of Business and Strategic Management
ISSN 2520-0402 (Online)
Vol.4, Issue No.1 pp 47-68, 2019
www.carijournals.org

positive correlation of r = 0.401 and r = 0.411 with the dependent variable respectively. Additionally, all the independent variables had levels of significance of 0.000, way below 0.05 indicating a statistically significant relationship between each independent variable and the dependent variable. This is consistent with Dahiru (2008) who determined that given intervals of 95%, p-values of less than 0.05 indicate that observed differences between groups are unlikely to be due to chance and, as such, are statistically significant. This reflects the relevance of the p-value as an acceptable test of statistical significance.

Regression

The regression analysis for the study is illustrated by table 7. According to the table, the R Square value for all the variables was 0.701 indicating that the results explained 70.1% of the variation in Performance whenever there was a one percent change in the three independent variables. This is in agreement with Hamilton, Ghert and Simpson (2015) who found that in order for R square values to be significant they should be higher than 0.7.

Table 7: Regression Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733[a]	.701	.581	.47480

a. **Predictors**: (*Constant), Blockchain Technology, Mobile Technology Adoption, Digital Platforms, Travel Intermediaries*

ANOVA Statistics

The findings pertaining to the ANOVA statistics for the research variables are shown in table 8. The results indicate that the ANOVA F-test score, calculated value F_{cal} at 5% level of significance is equivalent to 4.485 which is greater than the F critical value (F_{crit}) of 2.353 indicating that there is a significant relationship between all the independent variables and the dependent variable of performance; while the p-value of 0.000 is less than 0.05 indicating that there is a statistically significant relationship between each of the independent variables and Performance. This demonstrates the goodness of fit of the model.

Table 8: ANOVA Statistics

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.024	4	1.006	4.485	.000[b]
Residual	27.823	92	0.299		
Total	31.847	96			

a. **Dependent Variable**: *Performance*

Beta Coefficients

Table 9 shows the beta coefficients of the multiple regression model of the study. The values of the constant and coefficients enabled the generation of the multiple regression model as follows:

$$Y = 1.134 + 0.286 X_1 + 0.312 X_2 + 0.146 X_3 + 0.371 X_4$$

Where; Y is the project's dependent variable (Performance); X_1 is the first independent variable (digital platform); X_2 is the second independent variable (mobile technology adoption); X_3 is the third independent variable (blockchain technology); X_4 is the fourth independent variable (Travel Intermediaries); ε is the error term; and β0 is the constant term. According to the equation, when all independent variables are zero (digital platforms; mobile technology adoption; blockchain technology and Travel Intermediaries), performance will be a constant equivalent to 1.134. The data analysis of the findings also indicate that a unit increase in Digital Platform will lead to a 0.286 increase in Performance when all other independent variables are held constant. Additionally, a unit increase in Mobile Technology Adoption will lead to a 0.312 increase in performance when all other independent variables are held constant. Further, a unit increase in Blockchain Technology will lead to 0.146 increase in Performance when all other independent variables are held constant. Finally, a unit increase in travel intermediaries will lead to 0.371 increase in Performance when all other independent variables are held constant. A review of the p-values indicates that all the independent variables, namely: digital platform, mobile technology adoption, blockchain technology and travel intermediaries have statistically significant relationships with Performance owing to the fact that their p-values are less than or equivalent to 0.05.

Table 9: Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.134	0.389		2.916	0.004
Digital Platforms	0.286	0.100	0.298	2.854	0.005
Mobile Technology Adoption	0.312	0.104	0.289	3.001	0.003
Blockchain Technology	0.146	0.055	0.236	2.671	0.009
Travel Intermediaries	0.371	0.085	0.122	4.365	0.001

a. **Dependent Variable**: *Performance*

5.0 CONCLUSION AND RECCOMMENDATION

5.1 Conclusions

The organisations have paid a lot of attention to online booking integration and social media functionality as components of the digital platforms reliability in their operational strategies as a means of coping with disruptive innovations. However, the use cloud computing appears to have been neglected implying that it can a source of disruption from other players should they become aware of this oversight. Nonetheless, the strong positive responses relating to online booking integration and social media functionality indicate the importance of digital platforms reliability as a strategy for resisting disruptive innovations. Mobile technology adoption has been emphasized by the three airlines in the study as sources of competitive advantages. This is affirmed by the fact that mobile payments integration, mobile booking applicability, and omni channel retailing integration all got strong endorsements by the respondents. However, the relatively low backing for the incorporation of tourist guide in the mobile app suggests that this can also be an opportunity for disruptive innovation by other players in future. The influence of blockchain technology on the performance of the three organisations has been minimised judging

from the underwhelming response from the participants. In fact, the only aspect of the IT infrastructure in the three organisations that would not be improved much by blockchain technology is the flexibility of its digital platforms for use in different applications. This indicates that blockchain technology is an opportunity that can be exploited by would-be disruptive innovators. On the last objective, the study concluded that adoption of travel intermediaries has a significant and positive influence on the performance of airline companies in Kenya. Through focusing on low-rated hotels and getting into collaborations with travel agents to provide cheaper rates, the airlines attracts a market niche that has been overlooked by the bigger companies hence gaining performance. The three airlines have done a commendable job in the financial performance, internal processes and customer satisfaction which have all contributed towards the overall performance of the organisations. Indeed, the management of the organisations have made due consideration for the increased costs of operation, they have enhanced their internal processes by conducting businesses process re-engineering, they have automated their internal processes, they have emphasized service quality as a source of customer satisfaction, and the employees' attitude contributed towards greater customer satisfaction.

5.2 Recommendations of the Study

Firstly, although digital platforms reliability has been applied as a source of competitive advantages, there are still opportunities to be had in the integration of cloud computing functionality. Organisations in the airline industry should conduct research and development to determine how best to incorporate cloud computing into their operations so as not to fall victim to new entrants who may use this as form of disruptive innovation. Despite the established competencies in mobile technology adoption amongst airlines in Kenya, there are still small deficiencies such as the lack of consideration for tourist guides in mobile apps which should be addressed accordingly. Airlines in Kenya have yet to embrace blockchain technology as a strategy for tackling disruptive innovations. Given the increasing popularity of blockchain technology, it would be prudent for the management of airlines in Kenya to adopt blockchain technology in order to further strengthen their IT systems and use this as a means of resisting possible blockchain technology-driven disruptive innovations. The airline companies in Kenya through their management ought to embrace travel intermediaries as a disruptive innovation strategy to gain competitiveness and enhanced their performance. Since majority of the big airline companies have set high-end standards as far as travelling and making bookings for their clients are concerned, the emerging companies ought to embrace travel intermediaries through collaborating with travel agents and hotels in cheaper places through which they meet the needs of an assumed market niche` of low income earners hence enhancing their performance.

Acknowledgements

References

Accenture (2016). Turbulence ahead: plotting a course through digital disruption. Technology Vision for Airlines 2016. Retrieved from

https://www.accenture.com/t20160601T043737Z__w__/my-en/_acnmedia/PDF-17/Accenture-Airline-Tech-Vision-POV.pdf

Albors-Garrigos, J., & Hervas-Oliver, J. L. (2013, July). Disruptive technology in mature industries: Its contribution to industry sustainability. In *Technology Management in the IT-Driven Services (PICMET), 2013 Proceedings of PICMET'13:* (pp. 585-596). IEEE.

Ali, R. (2016). *The airline industry's connected commerce future - disrupt or be disrupted*. Skift Report. Retrieved from https://www.datalex.com/wp-content/uploads/2016/10/Datalex-Skift-TrendReport_OCT16.pdf

Amoroso, D., & Ackaradejruangsri, P. (2016). Exploring the adoption of mobile technologies in Thailand: Development of a research model. *Journal of Business Management and Research*, *6*(1), 19-28.

Bergek, A., Berggren, C., Magnusson, T., & Hobday, M. (2013). Technological discontinuities and the challenge for incumbent firms: Destruction, disruption or creative accumulation?. *Research Policy*, *42*(6-7), 1210-1224.

Boone, H. N., & Boone, D. A. (2012). Analyzing likert data. *Journal of extension*, *50*(2), 1-5.

Bouwer, L. (2016). *Digital platforms – The embodiment of innovation management theory?* Working paper presented to the Innovation Management Research Institute. Retrieved from https://www.researchgate.net/publication/311735160_Digital_Platforms_-_The_Embodiment_of_Innovation_Management_Theory

Burmistrov, I. (2009, September). Mobile air ticket booking. In *European Conference on Cognitive Ergonomics: Designing beyond the Product---Understanding Activity and User Experience in Ubiquitous Environments* (p. 11). VTT Technical Research Centre of Finland.

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation. *Harvard Business Review*, *93*(12), 44-53.

Coccia, M. (2016). Radical innovations as drivers of breakthroughs: characteristics and properties of the management of technology leading to superior organisational performance in the discovery process of R&D labs. *Technology Analysis & Strategic Management*, *28*(4), 381-395.

Dabić, M., Bašić, M., & Vlajčić, D. (2016). Introduction to the Open Innovation Paradigm. In *Innovation Education Reloaded: Nurturing Skills for The Future*. LUT Scientific and Expertise Publications.

Dahiru, T. (2008). P-value, a true test of statistical significance? A cautionary note. *Annals of Ibadan postgraduate medicine*, *6*(1), 21-26.

Dearing, J. W., & Cox, J. G. (2018). Diffusion of Innovations Theory, principles, and practice. *Health Affairs*, *37*(2), 183-190.

Dobrin, C. O., Popescu, G. N., Popescu, V. A., & Popescu, C. R. (2012, November). The concept of performance in business organizations–case study on the employee performance in Romanian business organizations. In *Proceedings of the INTERNATIONAL MANAGEMENT CONFERENCE* 6(1), 310-316. Faculty of Management, Academy of Economic Studies, Bucharest, Romania.

Elena-Iuliana, I., & Maria, C. (2016). Organizational performance-a concept that self-seeks to find itself. *Annals of'Constantin Brancusi'University of Targu-Jiu. Economy Series*, (4).

Gannamaneni, A., Ondrus, J., & Lyytinen, K. (2015, January). A post-failure analysis of mobile payment platforms. In *System Sciences (HICSS), 2015 48th Hawaii International Conference on* (pp. 1159-1168). IEEE.

Garvey, F., & Sankaranarayanan, S. (2012). Intelligent agent based flight search and booking system. *International Journal of Advanced Research in Artificial Intelligence*, *1*(4), 12-28.

Gemici, E., & Alpkan, L. (2015). An application of disruptive innovation theory to create a competitive strategy in Turkish air transportation industry. *Procedia-Social and Behavioral Sciences*, *207*, 797-806.

Hamilton, D. F., Ghert, M., & Simpson, A. H. R. W. (2015). Interpreting regression models in clinical outcome studies. *British Editorial Society of Bone and Joint Surgery, London, United Kingdom, 4*(9), 152-153.

Hill, J. B. (2017). *Leading through digital disruption: Gartner insights on spotting and responding to digital disruption*. Retrieved from https://www.gartner.com/imagesrv/books/digital-disruption/pdf/digital_disruption_ebook.pdf

Hossain, M., & Lassen, A. H. (2017). How do digital platforms for ideas, technologies, and knowledge transfer act as enablers for digital transformation? *Conference proceedings at the XXVIII ISPIM Innovation Conference, Vienna, Austria.*

Hüseyinoğlu, I. Ö., Galipoğlu, E., & Kotzab, H. (2017). Social, local and mobile commerce practices in omni-channel retailing: insights from Germany and Turkey. *International Journal of Retail & Distribution Management*, *45*(7/8), 711-729.

Ishmaev, G. (2017). Blockchain technology as an institution of property. *Metaphilosophy*, *48*(5), 666-686.

Juell-Skielse, G., & Hjalmarsson-Jordenius, A. (2017). Accelerating Open Digital Innovation in the Automotive Industry: Action Design Research in Progress. In *Australasian Conference on Information Systems 2017, Hobart, Australia*.

Kasmire, J., Korhonen, J. M., & Nikolic, I. (2012). How radical is a radical innovation? An outline for a computational approach. *Energy Procedia*, *20*, 346-353.

Kothman, I., & Faber, N. (2016). How 3D printing technology changes the rules of the game: insights from the construction sector. *Journal of Manufacturing Technology Management*, *27*(7), 932-943.

Liang, T. P., Chen, D. N., & Pee, L. G. (2013). The Impacts of Open Innovations on Organizational Performance: A Perspective based on Information Technology and Knowledge Ecology. *The Thirty Fourth International Conference on Information Systems*, Milan, Italy.

Lien, A. S. Y., & Jiang, Y. D. (2017). Integration of diffusion of innovation theory into diabetes care. *Journal of diabetes investigation*, *8*(3), 259-260.

Magni, M., Angst, C. M., & Agarwal, R. (2012). Everybody needs somebody: The influence of team network structure on information technology use. *Journal of Management Information Systems*, *29*(3), 9-42.

Mooi, E., & Sarstedt, M. (2014). A concise guide to market research, chapter 7: "Regression analysis". *Berlin: Springer-Verlag*, *10*, 193-233.

Mugenda, O. & Mugenda A. (2003). *Research methods: quantitative and qualitative approaches*.

Murfield, M., Boone, C. A., Rutner, P., & Thomas, R. (2017). Investigating logistics service quality in omni-channel retailing. *International Journal of Physical Distribution & Logistics Management*, *47*(4), 263-296.

Nabosu, S. S. (2013). *The effect of expansion projects on the financial performance of airline companies: A case study of Kenya Airways* (Doctoral dissertation, University of Nairobi).

Naqshbandi, M. M. & Singh, S. K. G. (2015). Theories in innovation management. In *Selected theories in social research*. UM Press (pp. 41-51).

Nguyen, H. T., Nguyen, H., Nguyen, N. D., & Phan, A. C. (2018). Determinants of customer satisfaction and loyalty in Vietnamese life-insurance setting. *Sustainability*, *10*(4), 1151.

NIIT (2010). *Social media for airline industry*. NIIT Technologies white paper. Retrieved from https://www.niit-tech.com/sites/default/files/Social%20Media%20in%20Airline%20Industry(ISG)_0.pdf

Njonjo, S. K. (2014). The application of business process reengineering at Kenya Airways (*Master's degree, University of Nairobi*).

Owuonda, S. O., & Orwa, D. (2016). Cloud computing governance readiness assessment: Case study of a local airline company. *International Journal of Applied Information Systems (IJAIS)*, *10*(8), 33-42.

Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform revolution: How networked markets are transforming the economy and how to make them work for you*. WW Norton & Company.

PwC (2016). *Disrupting Africa: Riding the wave of the digital revolution*. Retrieved from https://www.pwc.com/gx/en/issues/high-growth-markets/assets/disrupting-africa-riding-the-wave-of-the-digital-revolution.pdf

Rogers, S., & Singhal, A. A., & Quinlan, M. M (2008). Diffusion of innovations. *In* Stacks, D. W., & Salwen, M. B. (Eds.). (2014). *An integrated approach to communication theory and research* (pp. 418-434) Second edition. NY: Routledge.

Rose, N. (2011). The always-connected traveller: How mobile will transform the future of air travel. *Travel Tech Consulting Inc*, 1-39.

Sanakulov, N., & Karjaluoto, H. (2015). Consumer adoption of mobile technologies: a literature review. *International Journal of Mobile Communications*, *13*.

Sawyer, S. F. (2009). Analysis of variance: the fundamental concepts. *Journal of Manual & Manipulative Therapy*, *17*(2), 27E-38E.

Singh, A. S., & Masuku, M. B. (2014). Sampling techniques & determination of sample size in applied statistics research: An overview. *International Journal of Economics, Commerce and Management*, *2*(11), 1-22.

Suchánek, P., & Králová, M. (2018). Customer satisfaction and different evaluation of it by companies. *Economic Research-Ekonomska Istraživanja*, *31*(1), 1330-1350.

Suhartanto, D., & Noor, A. A. (2012). Customer satisfaction in the airline industry: the role of service quality and price. In *Asia Tourism Forum Conference* (p. 6).

Tanwar, R. (2013). Porter's generic competitive strategies. *Journal of business and management*, *15*(1), 11-17.

Tibbs, C. Y., & Langat, L. K. (2016). Internal process, learning perspective of balance scorecard and organisational performance. *International Journal of Economics, Commerce and Management, 4*(11), 458-474.

Vagdevi, P., & Guruprasad, H. S. (2015). A Study on cloud computing in aviation and aerospace. *International Journal of computer science & Engineering Technology*, *6*(03).

Vanhaverbeke, W., & Roijakkers, N. (2013). Enriching open innovation theory and practice by strengthening the relationship with strategic thinking. In *Strategy and communication for innovation* (pp. 15-25). Springer, Berlin, Heidelberg.

Vercauteren, A. (2008). *Recognising radical innovation: The importance of perspective and level of analysis*. Retrieving from https://doclib.uhasselt.be/dspace/bitstream/1942/8562/1/IMP08%20Journal%20Seminar.pdf

Vertakova, Y. V., Rudakova, O. V., Shadrina, V. V., Kobersy, I. S., & Belova, I. N. (2016). Strategy of disruptive innovation in emerging regional markets: Factors of success and failure. *International Journal of Economics and Financial Issues*, *6*(8S), 274-279.

Viellechner, O., & Wolf, T. (2010). *Incumbent inertia upon disruptive change in the airline industry: Causal factors for routine rigidity and top management moderators* (No. 100). HHL Working Paper.

Zentner, A. (2015). Disruptive innovation: A catalyst for change in business and market modeling. Retrieved from https://www.researchgate.net/publication/268105538_Disruptive_Innovation_A_Catalyst_for_Change_in_Business_and_Market_Modeling