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INFORMATION TECHNOLOGY (IT) INTEGRATION AND FIRM PERFORMANCE

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Abstract

A review of industry practices and literature reveals that studies examining the association between IT and firm performance are divergent in how they conceptualize key constructs and their interrelationships. Using a pragmatist philosophical approach coupled with triangulation, it is evident that comparative and empirical research on IT and Strategy relationship, inaccurately frames Information Technology (IT) Integration as only a functional-level imperative. This under-appreciation of the business-level role of IT Integration is the driving need for the substantial re-theorizing of its role in strategy and its complex and interdependent relationship with the mechanisms through which firms generate superior firm performance. It is therefore important to examine the direct and indirect effects of IT Integration on firm performance and understand how IT Integration influences firm performance through a finite and simple chain of practical industry based variables. This paper proposes and establishes a conceptual model based on micro constructs of the following key constructs; IT Integration, Firm characteristics, Business Operations strategy and Firm performance. This model affirms and calibrates industry and field observations. It provides researchers and practitioners with pragmatic toolsets to operationalize financial technology strategies within their organizations.

Keywords: IT Integration, Strategy, Firm characteristics, Firm performance

INTRODUCTION

Although literature sources on Information technology and firm performance are rich with insights and macro-theoretical developments, empirical studies find that the firm micro-dynamics on how Information technology integrates with strategy and firm performance is lacking at micro-level. From this it is evident that a clear understanding of the internal dynamics of organizations is required so as to explain the productivity paradox associated with IT Integration and how financial services firms shall be or are able to navigate the dynamism and environmental turbulence that characterize their industry. Organizations that are able to manage this turbulence are expected to have superior firm performance. Arising from the above therefore this study sought to investigate the relationship between IT integration, Business Operations Strategy, Firm Characteristics and Firm Performance of Commercial Banks and Micro Financial Institutions (MFI). The specific objectives were; examine the relationship between IT Integration, Business Operation Strategy, effect of Business Operations Strategy, influence of Firm Characteristics on IT Integration, Business Operations Strategy and Firm Performance and lastly to investigate and establish the joint effect of IT Integration, Firm Characteristics, Business Operations strategy is greater than the effect each individual variable on the Firm's Performance. Dynamic capabilities theory is used as the foundational theory, supplemented by strategic alignment theory and the resources based theory. The research design was cross sectional descriptive survey. The results findings show a statistically significant direct relationship between IT integration and business operations strategy on firm performance. The results also show that relationship between IT integration, business operations strategy and firm performance is moderated by firm characteristics. This study contributes to understanding of the link between IT integration, business operations strategy and firm performance, while at the same time confirms the findings of previous studies that have found a significant positive link between IT integration and firm performance, and thus help in unravelling the related productivity paradox that has been associated with IT. The conclusions from this study demonstrates the substantive re-theorizing of IT Integration from a functional imperative to a business strategy level. In conclusion a well-organized IT integration strategy for financial institutions is indeed its business strategy to counter external financial technology companies, and therein orchestrate its own internal financial technology strategy.

Information Technology Integration

IT Integration includes the advancement and reconfiguration of information technology (IT) to bolster business systems. Information technology integration is the use of IT tools in business operations strategy so as to bring a positive impact on performance (Kim *et al.* 2011). Kim et al.

(2011) recognized IT administration abilities, IT work force skill and IT Infrastructure adaptabilities as the essential measurements of IT Integration, in parallel with the scientific classifications of physical, human, organizational perspectives, created by Barney (1991). They additionally asserted that these measurements are interrelated and the cooperative energy that impacts the fast changes in company's business processes and which in turn prompt prevalent firm strategy. This perspective seems to stand out from a portion of the earlier research, where some research work characterized each of the measurements as IT assets; some grouped IT framework as IT assets, with IT staff thought to be of a higher order; and others recognized IT foundation and IT work force skills as capacities, (Ravichandran and Lertwongsatien, 2005; Fink and Neumann, 2007).

Business Operations Strategy

Mintzberg (1978) drew out the significance of the relationship between business operations and operations strategy as the path through which organizations execute strategy, however operations strategy is the functional approach to reach and keep up the organization focused day to day needs, while aligned to the overall strategy. According to Porter (1985), firms with a clear strategy outpace firms without a strategy. Hossain S, Sohrab K, Jamshid N & Mahmood A (2012), through an empirical study of Iranian firms, proposed a model that presented an arrangement in the organization's strategy window, by making the centralization of business system and operations strategy framework, as a proxy for business operations strategy. Thompson & Strickland (1990), refer the same concept as functional strategy, and which is adding details to business strategy with its main role being to support the overall competitive strategy. A business operations strategy in this manner depicts how an organization creates competitive advantage in an industry with respect to its adversaries (Acquaah, 2011). The most common business operations strategies employed by organizations center on cost leadership and differentiation

Firm Performance

Firm performance includes the yield or after effects of a firm as measured against its expected yields, objectives and targets (Banker, Chang, Pizzini, 2004). This has necessitated the need of adjusting the precision and respectability of monetary measures with the drivers of future firm strategy of the organization (Banker et al, 2000).

Different approaches to the measurement of firm performance for financial services organizations have been used to analyze the efficiency and performance of financial sectors across the world. The traditional approach involves analyzing major financial indicators of the

organization over time (Rahut, Castallanos & Sahoo, 2010). Operational efficiency, profitability, proficiency in asset utilization and liquidity, capital adequacy, product development were utilized by Rahut et al. (2010) to represent traditional measures of performance of financial institutions. Ngumi et al. (2013) analyzed the effect of financial innovations on the performance of commercial banks in Kenya. The study used profitability, total income, total assets and customer deposits as proxies of performance of commercial banks.

The Strategic Balanced score card provides a system in which both financial and nonfinancial achievement measures are connected by the firm's strategy (Banker, Chang, Pizzini, 2004). It takes a view of strategy from four points of perspective: financial, customer, internal processes and learning and development. Robert Kaplan and David Norton, built up this approach in three articles distributed in the Harvard Business Review (1992, 1993 and 1996a). Their thought was that conventional financial related measures (like the ROI, for instance) ought to be supplemented with operational measures concerning consumer loyalty, inside procedures and the capacity to advance.

THEORETICAL FRAMEWORK

Several foundational theories can be used to explain the relationship between IT Integration and Firm Performance. Strategic alignment theory, the Resource Based Theory, Dynamic Capabilities theory and Systems Theory have been used by several strategic information system (SIS) scholars to show the relationship and possible perspectives of theoretically connecting business strategy, operations strategy, operations management, sustainable competitive advantage, firm performance with Information technology. In this paper the Dynamic Capability framework is selected, as the theoretical foundation for a conceptual model, to explain Information Technology Integration and Firm Performance, intervened and moderated by business operations strategy and firm characteristics, respectively.

Dynamic Capabilities Theory

The term dynamic indicates a firm's ability to revive its capabilities in a changing business condition. Firms ought to have the capacity to adjust to the changing business condition with a specific end goal to remain ahead of competition to take market leadership position. The term capability describes the ability and degree of management to steer a firm's strategy. Put together, dynamic capability therefore stresses the importance of management in adjusting, incorporating, reconfiguring the firm's inside and outside assets while cognizant of its practical abilities to adapt to the changing market environments. The dynamic capability theory (DCT) is considered an offshoot from Resource Based View and addresses the issue of resource origin

that eludes RBV (Crook *et al,* 2008). The dynamic capability theory has extended RBV to the realm of evolving capabilities (Okoth, 2013). Dynamic Capacities aims to provide a consistent framework for the understanding of competitive advantage driven by sustainable good firm performance. Teece *et al.* (1997) adopted the efficiency approach from the earlier works of Klevorick*et al.,* (1995); these original works addressed the roles of routines, and their influences on sharing and constraining the ways firms grow and adapt to changing environments. Firm performances are evaluated on efficiency aspects rather than market positions.

Teece et al (2001) wrote on the dynamic capability theory and defined dynamic capability as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." He introduced the need to develop the capability to respond quickly to the changes in both the internal and external environment and recognized the multiplicity of variables that come together to influence superior performance. The theory gives a systematically structured view and specifies that successful players cannot restrict the variables they consider to perform well and have to continuously seek which other variables come to play jointly with others for the best results and within their current and future business strategies (McMillan, 2002).

Empirical Studies and Variable Relationships

Rivard, Raymond and Verreault (2006) studied the contribution of IT to the firm performance building on resource based view theory and taking strategy as a positioning perspective. Similarly Huang, Ahn& Lee (2009) explored the existence of the mediating role of IT innovation success, Integration and institutional pressures, in the underlying mechanism between IT Integration and firm performance found a positive correlation between IT and firm performance. This is also underscored by works of Rivard et al. (2006), Tarafdar and Gordon (2007), Aral and Weill (2007), McAfee and Brynjolfsson (2008), Haand, Jeong (2010) and Mithas, Ramasubbu and Sambamurthy (2011). Binuyo and Aregbeshola (2014) examined the impact of information technology on the performance of commercial banks in South Africa. The study focused on the effect of IT integration, cost efficiency and IT investment on performance of commercial banks.

Many studies have proposed multiple dimensions of IT Integration, including organizational, human and physical capabilities, Bharadwaj et al., (1999), Bhatt and Grover, (2005), Bharadwaj et al.,(2010). Bharadwaj et al. (1999) reported a Delphi study that identified the factors leading to IT Integration. The Delphi panel included experts on IT management drawn from academia, consulting and industry. A set of 30 capabilities were identified and categorized into six groups: IT business partnerships, external IT linkages, business IT strategic thinking, IT business process integration, IT management and IT infrastructure. This study provided a basis for

treating IT capability as an organization-wide dynamic capability, and presented a better understanding of the influences of intangible IT resources within the IT capability construct.

Bharadwaj (2000) directly linked IT to firm performance. Employing Grant (1997) classification model, she categorized the IT Integration as: IT infrastructure (tangible resources), human IT resources, and intangible IT resources (e.g. knowledge assets, customer orientation and synergy). IT Integration was found to be directly associated with firm performance. Firms with effective IT Integration were able to obtain superior financial performance. She argued that firm performance is achieved through the complementary effects of complex interactions between tangible, human and intangible IT resources.

Santhanam and Hartono (2003) extended and confirmed Bharadwaj's (2000) findings, establishing that firms with strong IT Integration had superior current and sustained performance when compared to average industry performance. IT Integration had a sustained impact on firm performance, which was a phenomenon that had not been examined in prior research.

Bhatt and Grover (2005) identified the factors leading to IT Integration, such as IT infrastructure, IT business experience, relationship infrastructure and intensity of organizational learning. They identified that IT infrastructure was not a significant constituent for attaining competitive advantage. The authors argued against the conventional view that IT infrastructure, IT business experience and relationship infrastructure were essential components for competitive advantage. Rather, they claimed that IT infrastructure and IT capabilities across organizations were largely similar. This may be due to the open standards, modular development approaches and openly available software and hardware. In contrast, they emphasized the importance of IT personnel expertise as an inimitable and valuable asset for firms. Organizations with highly competent IT personnel are able to create greater sustainable competitive advantage.

In an ongoing scholarly discourse about the true classification of IT assets and resources, Bharadwaj (2000) recognizes capacities from assets and clarifies; "IT abilities are capacities that prepare and generate IT assets into a portfolio abilities that drive specific business objectives and strategies". She embraces Grant's order (1991) that IT assets are in three classes: IT infrastructure, human IT assets; and thirdly IT relationships. In her examination, she found that the mix and collaboration of IT assets and different assets empowers the making of sustainable competitive advantage.

From the interior perspective, predominant strategy relies on upon the nature of the "fit" among the organization's market position and its physical, human, and organizational assets, asserts Slater et al., (2006)). From the outer perspective, Bharadway et al. (2000) contends that

it is the possession of uncommon and difficult to imitate assets that permits a firm to beat its rivals, while Fahy (2000) showed unrivaled strategy as driven by market leadership and superior financial acumen not expressly identified with contenders. Bharadwaj (2000) further found that organizations which have unrivaled IT abilities have an essentially superior strategy over firms that do not exploit the full potential of IT innovation. She contended that IT must be a source of comparative advantage if firms comprehend and create IT as IT capabilities. To accomplish this, she enumerated three imperatives: IT learning, IT operations, and thirdly IT infrastructure. IT work force skills are also an important part of IT capabilities and critical in defining a competitive advantage position. These three imperatives speak to co-specific assets within the IT and business alignment framework. An examination of its outcomes demonstrate that they indirectly and directly affect firm strategy. In particular, they demonstrate that organizational synergy towards better firm performance is moderated between IT capability and firm strategy.

Drnevich and Croson (2013) examined the relationship between IT and business strategy. According to the study, IT plays an integral role in ensuring the success of the competitive strategy of the organization. They contended that IT influences industry structure and the arrangement of business-level key options and value creation openings that a firm may seek after. Naming IT as integral with organizational changes, they expressed that IT improves the company's present (normal) abilities and empowers new (element) capacities, including the adaptability to concentrate on quickly changing opportunities or to surrender losing activities while rescuing significant resource esteem. The review inferred that IT decides the amount of significant worth, once made, can be secured by the firm and how much will be dispersed through rivalry or through the energy of significant worth chain accomplices, the administration of which itself relies on upon IT.

Research Hypothesis

Based on the above below are the research hypotheses-

H_1: There is a relationship between IT integration and firm performance

H_2: There is relationship between business operations strategy and firm performance

H_3 Business operation strategy has a significant effect on the relationship between IT integration and firm performance

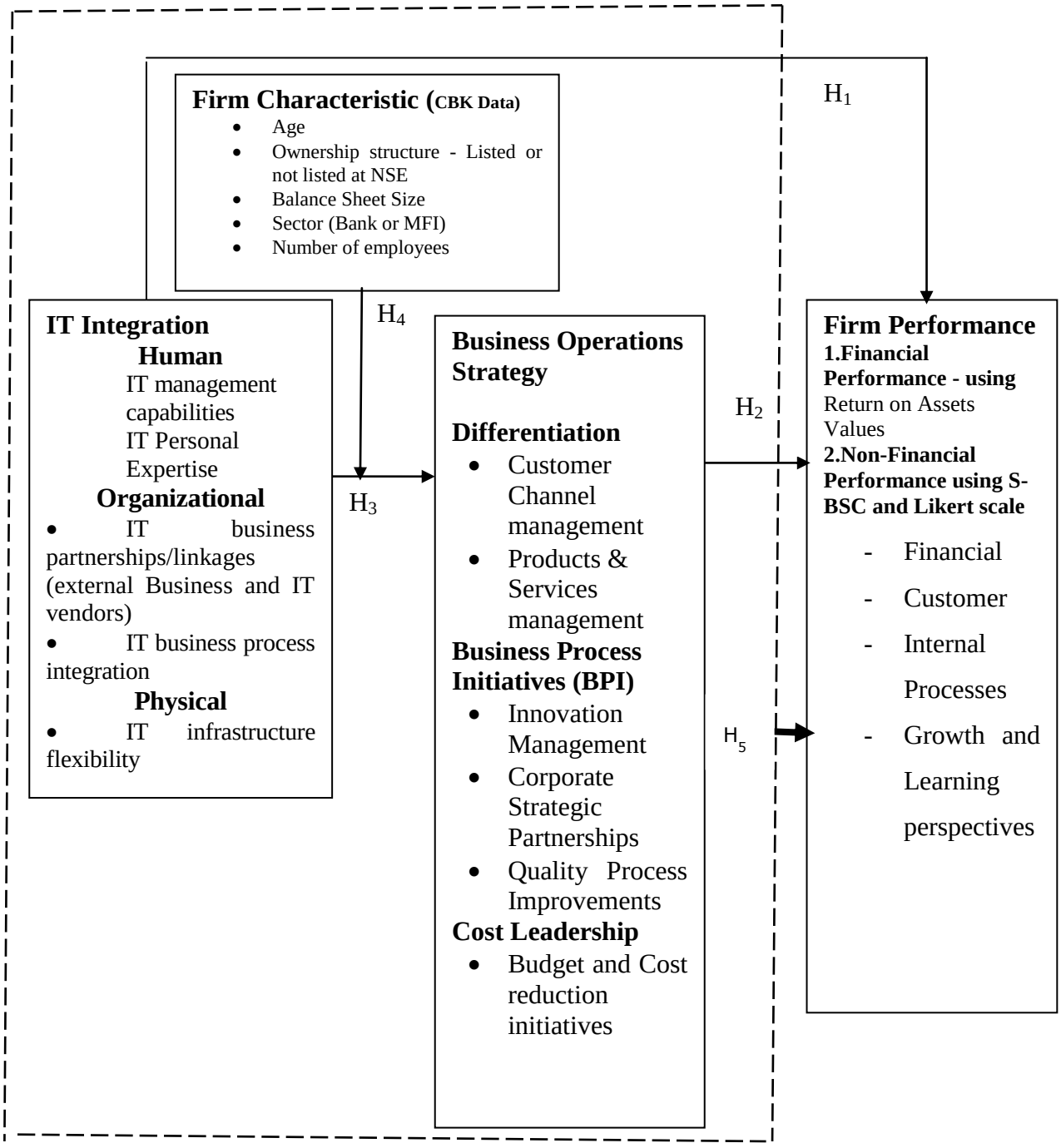
H_4 The strength of relationship between IT integration, business operations strategy and firm performance is influenced by the firm characteristics.

H_5 The joint effect of IT Integration, Firm characteristics and Business Operations strategy on Firm Performance is significantly greater than the individual predictor variables on the firm performance.

Conceptual Framework

The inter-relationships which form the basis upon which the paper is based is captured in the conceptual framework model as provided in Figure 1 below.

Figure 1: Conceptual Model



RESEARCH METHODOLOGY

This study adopted a pragmatist philosophical approach. Pragmatism is based on the premise that theories and models are judged primarily by their practical results (McDermid, 2006). Pragmatism underpins mixed research methodology; essentially the combination of qualitative and quantitative approaches. It blends the philosophical assumptions and approaches from both qualitative and quantitative research methods (Creswell, 2009).

Triangulation is used to explicitly account for qualitative aspects of research and how they relate to each other. These two approaches can be: (a) used sequentially, one after the other and (b) used in parallel (Neuman, 2006). The researcher started from hypothesis statements, backed by facts obtained in data sourced from respondents and secondary data obtained from company's annual reports and Central Bank of Kenya reports. The research design was cross sectional descriptive survey.

Research Design

This study adopted a cross-sectional survey design deemed appropriate because it accorded the researcher an opportunity to capture data from the respondents at the same time and provide data that objectively shows whether significant associations among variables exist (Cooper & Schindler, 2008). Other scholars among them Lindell and Whitney (2001), Irungu (2007) and Ongore (2008) used this research design successfully to test hypotheses. Further cross sectional surveys have been ascertained to be robust in relationships studies given their ability to capture the population characteristics in their free and natural occurrence (O'Sullivan & Abel, 2007). The cross sectional survey design also helps to collect uniform and comparable data that captures respondents' similarities and differences across the sampled organizations to enrich the study findings. This design is therefore in tandem with the philosophical orientation, purpose and scope of the research work and facilitates an in depth understanding of the complexities underpinning IT Integration, Business Operations Strategy, Firm Characteristics and their relationships to Firm Performance through a pragmatist philosophical approach.

Population and Sampling

The target population of for the study consists of all Commercial Banks, Micro Finance Institutions/Banks (MFI). They are 44 Commercial banks, 12 Micro Finance Institutions in Kenya (CBK, 2015, centralbank.co.ke). This population offers the research with a good mix of research population, critical set of data and the appropriate geographical spread.

Table 1: Population Categories

Category	Population
Commercial banks	43
Micro Finance Institutions	12
Total	55

Data Collection

Data collection refers to the process of gathering raw and unprocessed information that can be processed into meaningful information, following the scientific process of data analysis (Gall, Gall and Borg, 2007). Both primary and secondary data was collected for this study to avoid mono-method bias. Primary data was collected or obtained from the original sources. It is first-hand information collected by an individual group or organization. Semi structured questionnaire was used to collect primary data. The questionnaire was structured into personal profile of the respondents, organizational profile and information addressing research questions. The questionnaire was administered to one Senior IT Executives of the selected institutions. It was dropped and picked later by trained research assistants. A five point type likert scale ranging from 5 - denoting to a greater extent to 1 - denoting to a less extent was used.

Polit and Beck (2003) explain that secondary research involves the use of data gathered in a previous study to test new hypotheses or explore new relationships. They also indicate that analysis of existing data is efficient and economical because data collection is typically the most time-consuming and expensive part of a research project. Secondary data for this research was used to validate the findings from analysis of primary data. The secondary data was extracted from the annual reports and financial statements of the companies as the most recent reports (2015) from the Central Bank of Kenya, supervisory department. These were collected and presented using the secondary data collection sheet. The strategy of using both primary and secondary data to address the same study objectives is meant to improve the interpretive coherence and improve both communicative and pragmatic validity of the study results.

Operationalization of Variables

The study's independent variable was IT integration. The dependent variable was firm performance. The moderating variable, firm characteristics. Table 2 presents the operationalization of the study variables.

Table 2: Operationalization of the Study Variables

Variables	Indicators	Rating measures	Supporting Literature	Questionnaire items
IT integration	**Human** >IT management capabilities >IT Personal Expertise **Organizational** >IT business partnerships/linkages >IT business process integration **Physical** >IT infrastructure flexibility	Interval scale	Bharadwaj (2000), Kim et al. (2011). Duarte et al., (2011), Brown, et al. (2010)	Section A. Questions 1-10
Operations Strategy	-Customer focused Initiatives (Differentiation) -Business Process Initiatives (BPI) -Cost Reduction Initiatives (Cost Leadership)	Ratio scale	Anwar et al., (2014) Tehrani (2003)	Section B
Business Operations	-Products management -Innovation Management -Corporate-Strategic Partnerships -Quality Process Improvements -Project management -Customer Channel management	Ratio scale	Duarte et al., (2011), Brown, et al. (2010)	Section C. Questions 1-10
Firm Performance using BSC	-Financial -Return on Assets -Customer Perspective -Internal Processes Perspective -Growth and Leaning Perspective	Ratio scale	Rahut et al. (2010), Ngumi et al. (2013)	Section A. Questions 1-4
Firm Characteristics	-Number of employees -Total assets -Number of employees	Ratio scale	Rahut et al. (2010), Ngumi et al. (2013)	

Research Instrument

Structured questionnaire was used for data collection (See Appendix).

ANALYSIS AND FINDINGS

The tests of hypotheses were performed and the results presented on the relationships between IT Integration and firm performance; IT Integration and Business Operations Strategy; and Business Operations Strategy and firm performance. Also tested and presented are the results of the effect of Firm Characteristics on the relationship between IT Integration and Business Operations Strategy; and the effect of Business Operations Strategy on the relationship between IT Integration and firm performance. This study also tested and presented the results of individual and the joint effects of IT Integration, Firm Characteristics and Business Operations Strategy on firm performance.

Table 3. Summary of Hypotheses Testing

Objective	Hypotheses	Results	Remarks on hypotheses
1.To establish the relationship between IT Integration and firm performance	**H_1**:There is a relationship between IT integration and firm performance	Adjusted R^2=0.149;R^2=0.167, p<0.01; F=9.606; β=0.402;t=3.99,p<0.01.	Supported
2.To assess the effect of business operations strategies on firm performance.	**H_2**:There is relationship between business operations strategy and firm performance	Adjusted R^2=0.259;R^2=0.274, p<0.01; F=18.092; β=0.312;t=4.253,p<0.01.	Supported
3.To determine effect of Business Operations Strategy on the relationship between IT Integration and Firm Performance	**H_3**:Business operation strategy has a significant effect on the relationship between IT integration and firm performance	IT integration*BOS: Adjusted R=.438, R2=.461; F=20.129, p<0.01; IT integration β=.427, t= 4.046, p<0.01;BOS β=.324, t=5.07, p<0.01	Not supported
4.To evaluate the influence of Firm Characteristics on the relationship between IT Integration, Business Operations Strategy and Firm Performance.	**H_4**:The strength of relationship between IT integration, business operations strategy and firm performance is influenced by the firm characteristics.	IT integration, business operations strategy*Firm characteristics: adjusted R=.680, R2=.707, F=26.494, p< .001; β=.019, t=3.819, p<0.01	Supported
5.To investigate and establish the joint effect of IT Integration, Firm Characteristics, Business Operations strategy is greater than the effect each individual variable on the Firm's Performance.	**H_5**:The joint effect of IT Integration, Firm characteristics and Business Operations strategy on Firm Performance is significantly greater than the individual predictor variables on the firm performance.	Combined effects: adjusted R=.583, R2=.609, F=23.401, p<0.01; β=.381, t= 3.068, p<0.01	Supported

From the study's empirical data and application of the same on the model, Human IT Integration, Organizational IT Integration and physical IT Integration micro constructs, as a union parametric statistical derivative and defined as IT Integration construct explain 57.6% of Non-financial firm performance and 44.1% of financial firm performance (ROA) results. These

are significant findings with great industry implication to strategy and the affirmation that the IT Integration construct indeed is a business level strategic imperative. Business operations strategies explained 27.4% of the change in firm performance while Firm characteristics explained 34% of the change in firm performance. The joint predictor variables: IT Integration, Firm Characteristics and Business Operations strategy explain 60.9% of the change in firm performance, which was significant. The results of the current study indicate that the joint effect of IT Integration, Firm Characteristics and Business Operations strategy on firm performance is greater than the individual effects of IT Integration, Firm Characteristics, and Business Operations strategy on firm performance.

CONCLUSION

The attendant findings and conclusions from this research work contribute towards addressing the productivity paradox and the related theoretical and methodological flaws, in business and IT research field. From a managerial perspective, the findings provide valuable insights for managing investments in IT. For practitioners whose financial firms are besieged by an ecological ferment of changing technologies, fickle markets, and competitor mergers for global scale, understanding the internal dynamics of how IT Integration can influence firm performance is crucial for their business' survival. Similarly for managers faced with the dilemma of deciding on 'the next technological investments for their firms', the findings from this research provide valuation criteria for redefining operations strategy through investments in IT Integration.

In conclusion a well-organized IT integration strategy for financial institutions is indeed its business strategy to counter external financial technology (Finitech) companies, and therein orchestrate its own internal Fintech strategy. A bank's or microfinance's Fintech strategy would include the following key imperatives: integrated customer technologies, payment infrastructures and ecosystems, digital financial services products, a digital operations strategy, data analytics framework, an innovations culture and a differentiated organization and governance standard. These imperatives are consistent with this study's micro constructs, namely Human IT integration, Physical IT integration, organizational integration and governance, cost leadership, innovations management, customer channel management, product differentiation, focus on niche market and development of customer and supplier intimacy. Firm performance micro constructs in the study are defined by return on assets (ROA) and within the strategic balance score card's, four perspectives of financial, customer, internal processes, learning and growth perspectives.

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APPENDIX 1: RESEARCH INSTRUMENT / QUESTIONNAIRE

PART ONE: GENERAL INFORMATION

1.1 Organizational Information

1. Type of the institution (Tick)

Commercial bank ☐

Microfinance bank ☐

4.8 Respondent (Senior IT Executive) particulars

1. Title/designation ……
2. Highest level of education
3. How many years have you worked with this bank? …….
4. How many years have you worked in the banking industry? ……..
5. Does the most senior executive in Information Technology, directly report to the Chief Executive Officer?
    a. 1. Yes [ ]
    b. 2. No [ ]
6. Does the company have an Information Technology Board committee?
    a. 1. Yes [ ]
    b. 2. No [ ]
7. Are enterprise projects and programmes managed by InformationTechnology?
    a. 1. Yes [ ]
    b. 2. No [ ]

PART TWO: IT INTEGRATION

2.1 Indicate the level of proficiency of your Chief IT officer in the following areas (Human IT integration**)**

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent (Tick)

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
a	ICT hardware management					
b	ICT software management					

c	ICT security management					
d	Digital Internet and Mobile					

2.2To what extent does the bank use the following vendor supplies (Organizational intergration**)?**

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
a	ICT hardware vendors/suppliers					
b	ICT software vendors/suppliers					
c	ICT security vendors/suppliers					
d	Networking hardware					
e	Digital Channels – Internet and Mobile					

What was the approximate percentage of IT budget allocated to the following against the total company budget?

	Indicator Statement(s)	**approximate percentage of IT budget allocated**
a	ICT strategy plan	
b	ICT disaster recovery plan	
c	ICT security plan	
d	Networking hardware	
e	Digital Channels – Internet and Mobile	

Rate the degree of IT usage in the following areas

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
A	Customer relationship management					
B	Marketing processes					
C	Human resource management					
D	Customer credit procedures					
E	Product development and research					
F	Risk management					

2.3Rate the flexibility of the following ICT elements in allowing new modules (Physicalintegration**)?**

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
A	ICT hardware					
B	ICT software					
C	ICT network					
D	Digital internet and Mobile					

Does IT Flexibility lead to business growth ?

1. Yes [ ]
2. No [ ]

Does IT influence operational performance, please indicate in the space provided below

……
……

Does IT influence financial performance, please indicate in the space provided below

……
……

Does IT Integration offer business agility, flexibility and better quality, please elaborate……

……
……

PART THREE: BUSINESS OPERATIONS STRATEGY

3.1 Indicate to what extent your company has differentiated in the following (Differentiation strategy**)**

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
a	Customer management					
b	Channels management					
c	Product management					
d	Services management					
e	Innovation strategy					
f	Industry practice benchmarking					
g	Representation of senior executive in Information Technology in Top management structure					

3.2 Indicate to what extent your company has implemented the following business process initiatives (BPI**)**

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
A	Innovation Management					
B	Corporate Strategic Partnerships					
C	QualityProcess Improvements					

3.How much has been spent in automating the following processes against the total budget?- Budget and Cost reduction initiatives (cost leadership strategy)

Use the scale where 1= Not at all 2= to less extent 3=moderately 4= to high extent 5= to a great extent

	Indicator Statement(s)	**1**	**2**	**3**	**4**	**5**
A	Customer relationship management					
B	Marketing processes					
C	Human resource					
D	Customer credit procedures					
E	Product development and research					
F	Risk management					

PART FOUR: FIRM PERFORMANCE USING BALANCE SCORE CARD

4.0 Kindly rate the extent to which your company from the year 2012-2015has performed in each of the following key performance indicators by ticking on the appropriate box.

Use the scale where 1= Not at all, 2= Smallextent 3=moderately extent 4= Large extent 5=Very large extent

	Financial Perspective (Contains financial performance indicators which measure financial outputs of the business).					
	Financial - Criteria Domain	1	2	3	4	5
a)	Gross revenue generated by the company increased					
b)	Net profit of the company increased					
c)	Cost base of the company decreased					
2	**Customer Perspective** (Contains measures that identify the customer and market segment in which the business unit competes and the measures of the business unit's performance in these targeted segments)					
a)	Attracted many customers.					
b)	Had satisfied customers.					
c)	Retained customers.					
d)	Resolved customer complaints.					
e)	Market share has expanded.					
3	**Internal Business Processes** (Measures the critical internal processes in which the organization must excel)					
a)	Offered products /services of high quality.					
b)	Increased operational efficiency.					
c)	Offered after sales service to our customers.					
d)	Company introduced new products.					
4	**Learning and Growth Perspective** (Measures the infrastructure that the organization must build to create long term growth and improvement)					
a)	Developed new products.					
b)	Entered new markets.					
c)	Developed management competency.					
d)	Enhanced the ability of managers to perform their work.					

e)	Enhanced research and development.					

If you may have any other comments, feedback, contribution or suggestions to this topic, kindly elaborate
……
……
……
……
…….....

APPENDIX II: SECONDARY DATA COLLECTION SHEETS

PART ONE: FIRM CHARACTERISTICS

Kindly indicate the firm characteristics in respect to the following

Firm characteristics	
Age	
Total Assets	
Type of ownership structure – Local Vs Foreign	
Number of employees	

PART TWO: FIRM PERFORMANCE

5.1Indicate the financial performance of your of your organization from 2012-2015 using the following indicators

Year / Measure	Indicator	2015
Gross profit	RE1	
Operating income	GR1	
Net profit	GR2	
ROA	RE2	
ROE	RE3	

RE: Revenue; GR: Growth