

**FINANCIAL TECHNOLOGY AND BUSINESS OPERATIONS OF SELECTED FINANCIAL
TECHNOLOGY FIRMS IN LAGOS**

SAKA, RAHMONOLAWALE (PhD)
Department of Business Administration
Lagos State University, Ojo, Lagos, Nigeria.
E-mail: rahmon.saka@lasu.edu.ng

&

OLOWO, RABIUONOLAPO (PhD)
MBA Programmes
Lagos State University, Ojo, Lagos, Nigeria
E-mail:rabiulowo@gmail.com

Abstract

Financial technology is a broad phenomenon that is evolving daily as more technology entrepreneurs enter the industry and transform it according to social needs. Financial technology could be considered a financial service, which is intervened by innovative technologies to satisfy the requirements of today and future: high efficiency, cost reduction, business process improvement, rapidity, flexibility, and innovation. This study has explored some of variables of financial technology which includes: technological innovation, financial innovation and financial accessibility on variables of business operations. The study adopted a descriptive survey design and the population of the study was 92 members of staff of selected financial technology firms in Lagos, Nigeria. A structured questionnaire was administered online which gave a response rate of 82%. The instrument was validated using content validity index, and a test retest was done for the reliability of the instrument. The data gathered was analyzed through descriptive, linear regression analysis. Findings revealed that technological innovation has a significant effect on efficiency and effectiveness ($\text{sig} = 0.000 < 0.05$), $R^2 = 0.657$ and $t\text{-statistic} = 12.697$, financial innovation has a significant effect on profitability ($\text{sig} = 0.000 < 0.05$), $R^2 = 0.336$ and $t\text{-statistic} = 6.404$ and financial accessibility has no significant effect on sales revenue at a significant ($\text{sig} = 0.435 > 0.05$), $R^2 = 0.008$ and $t\text{-statistic} = -0.785$. The study observed that financial technology makes firms to save great resources and reduces costs of operations, reduce cost per transaction in business operations and enable firms to satisfy their customer's needs. The study recommended that organizations should invest in technology and development of members of staff so that the system can reflect innovativeness in their technological operations as this has proven in this study that it would bring about efficiency and cost minimization.

Keywords: financial technology, business operation, innovation, efficiency.

Introduction

Financial technology is a broad phenomenon that is evolving daily as more technology entrepreneurs enter the industry and transform it according to social needs (Congressional research service, 2020). Financial technology could be considered a financial service, which is intervened by innovative technologies to satisfy the requirements of tomorrow: high efficiency, cost reduction, business process improvement, rapidity, flexibility, and innovation (Dapp et al. 2014). Over the years, innovation has continuously assumed a key part in the money related functions of businesses in ways that the clear majority underestimate and may not ever observe. Financial technology has beyond reasonable doubt affected the financial performance of firms. Banks have been forced to use financial technologies to increase their efficiency and effectiveness. This is done through mobile money transfers and lending, internet of things and agency banking. Businesses have also integrated this into developing applications and platforms for online payment for services and rendering other services required by customers. With this, firms have been able to process customer requests,

information leading to reduction of queues, reduction of staff cost and idle time (Kemboi, 2018). By enabling digital payments, mobile money reduces dependency on cash whilst providing a platform for customers to access a much broader range of financial services (Cagri 2013). Vaidya (2011) stated that the world is becoming so much captivated to performing trade across the internet along with World Wide Web. This means the customers can transact remotely without necessarily visiting the banking halls or buildings/stores of businesses.

Financial technology, also known as Fin Tech, is the use new technology and innovation with other available businesses in order to compete in the marketplace of traditional financial institutions and intermediaries in the delivery of financial services (Chishti & Barberis, 2016). Financial services are the economic services provided by the finance industry, which encompasses a broad range of businesses that transfer, save, manage and spend monies as a medium of exchange. They could also be referred to as companies that do a combination of financial services and modern technologies and in turn offer internet based and application oriented services that are user friendly, automated, transparent and efficient (European Federation, 2015). It offers a host of technological solutions geared towards achieving convenience, faster turnaround times and operation efficiency. Though several scholars have pointed out that payment space is the most advance segment among the financial technology (Douglas & Janos, 2015). Financial technology involves the introduction of technology to the way money changes hands. It enables its users to do all financial transaction electronically. The service offers customers the opportunity to make payments services including online shopping, Insurance premium, restaurants services (with delivery), ticket purchases and payments for general goods and services, Internet banking, Debit and credit Card banking etc (Iriobe & Akinyede, 2019). However, anytime the internet network is poor no transaction is made till it resurfaces.

This technological progress has spurred financial innovations that have altered many financial products, services, production processes, and organizational structures. To the extent that such financial innovations reduce costs or risks, social welfare may be improved. Of course, many financial innovations fail owing to fundamental design flaws or simply being replaced by better alternatives (Frame, Wall & White, 2018). According to Leong and Sung (2018), there are various applications of FinTech and those applications could be classified under four major operational business process; payment, advisory services, financing and compliance. The complementary use of these technologies to deliver financial services could potentially create benefits. Many technologies aim to create efficiencies in financing, which reduce costs for financial service providers. Certain cost savings may be passed along to consumers through reduced prices. With lower prices, some customers that previously found services too expensive could enter the market. In addition, some individuals and businesses that previously could not access financial services because of price or lack of available financial information could gain access at lower prices or through increased data availability and improved data analysis. Financial technology also may allow businesses to reach new customers that were previously restricted by geographic remoteness or unfamiliarity with products and services. Increased accessibility may be especially beneficial to traditionally underserved groups, such as low-income, minority, and rural populations (Congressional Research service, 2020).

Statement of Problem

There has been a greater utilization of financial technology by firms globally in order to help boost and support their business operations and consequently attain high performance and return. This pattern has significantly improved efficiency in the operations of firms with usage of internet, electronic payment, product invention and innovation, etc. which has brought about a tremendous cost savings and seamless operations. Financial technology is slowly disrupting traditional ways of doing business with evolved technologies designed to enhance efficiency as well as effective quality services to customers.

Firms are now taking their businesses online to either sell or buy by integrating financial technologies into their operations in order to better satisfy and meet their customer's needs. Financial technology has helped bring businesses and their offerings closer to the customers whereby customers can remotely order for goods and services and even make transactions without physically stepping out of their comfort zones. However, because financial technology operations just evolved and not yet integrated completely into the systems and coupled with some environmental forces not yet considered could pose serious discomfort to their business

plans and mode of operations. As clearly seen that financial technology sector needed stable electricity, internet, fair regulations, cyber security and clear cut government plans and models to function. The experience and inability of Fintech firms to aligning its operations with government plans has been identified in a commercial capital of the country, Lagos which negatively affected their operations (FintechO’pay and others). Though, the integration of financial technology into the operations of businesses certainly influence the operations and performance of firms but the pattern of deploying these services need to be examined in order to better understand its effects on the firm itself, customers and the system as a whole, this forms one of the reasons for this study.

Research Objectives

The principal aim for conducting this research is to examine the effects of financial technology on the operation of business organizations.

The secondary objectives are:

- i. To identify the effect of technological innovation on organization’s efficiency and effectiveness.
- ii. To identify the effect of financial innovation on increased profitability.
- iii. To identify the effect of financial accessibility on increased revenue.

Research Questions

The following questions will help guide this study to avoid confusion and ensure transparency in carrying out this research. Therefore, the research questions for this study are as follow:

- i. Does technological innovation have a significant influence on organization’s efficiency and effectiveness?
- ii. Does financial innovation have a significant influence on organization’s profitability?
- iii. What kind of relationship exists between financial accessibility and increased sales revenue?

Research Hypotheses

Ho1: Technological innovation doesn’t have a significant influence on organization’s efficiency and effectiveness

Ho2: Financial innovation doesn’t have a significant influence on profitability

Ho3: No relationship exists between financial accessibility and organization’s sales revenue

Literature Review

Financial Technology

Technology services are professional services designed to facilitate the use of technology by businesses and customers, thereby providing specialized technology-oriented solutions by combining the processes and functions of software, hardware, networks, telecommunications and electronics. The rapid advancement in technologies has made technology is an important ICT tool for development due to its ability to easily leapfrog the infrastructure barriers in remote and rural areas in Africa (Shankar, O’Driscoll, and Reibstein, 2003). Financial technology, also known as Fin Tech, is the use new technology and innovation with other available businesses in order to compete in the marketplace of traditional financial institutions and intermediaries in the delivery of financial services (Chishti & Barberis, 2016). Financial technology companies consist of both startups and established financial and technology companies trying to replace or enhance the usage of financial services of incumbent companies. Financial services are the economic services provided by the finance industry, which encompasses a broad range of businesses that transfer, save, manage and spend monies as a medium of exchange. Financial technology is a broad phenomenon that is evolving daily as more technology entrepreneurs enter the industry and transform it according to social needs (Congressional research service, 2020). Financial technology could be considered a financial service, which is intervened by innovative technologies to satisfy the requirements of tomorrow: high efficiency, cost reduction, business process improvement, rapidity, flexibility, and innovation (Dapp et al. 2014). Financial technology, also known as Fin Tech, is the use new technology and innovation with other available businesses in order to compete in the marketplace of traditional financial institutions and intermediaries in

the delivery of financial services (Chishti & Barberis, 2016). They could also be referred to as companies that do a combination of financial services and modern technologies and in turn offer internet based and application oriented services that are user friendly, automated, transparent and efficient (European Federation, 2015).

Financial Innovation

Financial innovation is the process of creating new financial products, services, or processes (Chen, 2020). Financial innovation has come via advances over time in financial instruments and payment systems used in the lending and borrowing of funds. These changes – which include updates in technology, risk transfer, and credit and equity generation – have increased available credit for borrowers and given banks new and less costly ways to raise equity capital (Chen, 2020). Financial innovation is defined as the activity of making changes to products and processes, new organizations and gathering new knowledge that is carried out continuously by the company, and also the development of distribution of new products or services (Tufano, 2003). Financial innovation is the act of creating new financial instruments as well as new financial technologies, institutions, and markets. Some types of financial innovation are driven by improvements in computer and telecommunication technology. For example, Paul Volcker suggested that for most people, the creation of the ATM was a greater financial innovation than asset-backed securitization (Reuter, 2009). Other types of financial innovation affecting the payments system include credit and debit cards and online payment systems like PayPal. These types of innovations are notable because they reduce transaction costs. Households need to keep lower cash balances—if the economy exhibits cash-in-advance constraints then these kinds of financial innovations can contribute to greater efficiency. One study of Italian households' use of debit cards found that ownership of an ATM card resulted in benefits worth €17 annually (Alvarez and Lippi, 2009). These types of innovations may also affect monetary policy by reducing real household balances. Especially with the increased popularity of online banking, households are able to keep greater percentages of their wealth in non-cash instruments. In a special edition of *International Finance* devoted to the interaction of e-commerce and central banking,

Technology Innovation

Technological innovation is the successful implementation of technological idea (in commerce or management) new to the institution creating it. Schumpeter (1942) explains three stages in the process by which a new, superior technology permeates the marketplace. Invention constitutes the first development of a scientifically or technically new product or process. Innovation is accomplished when a new product or process is made available on the market. Diffusion (or dissemination) is the process that sees a successful innovation gradually coming to be widely available for use in relevant applications through adoption by firms or individuals. "Technology innovation" gives a sense of working on technology for the sake of technology. "Technological innovation" better reflects the business consideration of improving business value by working on technological aspects of the product or services. Moreover, in a vast majority of products and services, there is not one unique technology at the heart of the system. It is the combination, the integration and interaction of different technologies that make the product or service successful. Technological innovation is a part of the total innovation discipline. It focuses specifically on technology and how to embody it successfully in products, services and processes. Technology as a body of knowledge might thus be seen as a building block for technological innovation, serving as cornerstone to research, design, development, manufacturing and marketing. Other definitions of technological innovation may be found in literature, yet they all make some reference to Invention, realisation, or Implementation.

Financial Accessibility

Access to finance is the ability of individuals or enterprises to obtain financial services, including credit, deposit, payment, insurance, and other risk management services (Demirguc-Kunt and Honohan, 2008). Those who involuntarily have no or only limited access to financial services are referred to as the unbanked or underbanked, respectively. Accumulated evidence has shown that financial access promotes growth for enterprises through the provision of credit to both new and existing businesses. It benefits the economy in

general by accelerating economic growth, intensifying competition, as well as boosting demand for labor. The incomes of those in the lower end of the income ladder will typically rise hence reducing income inequality and poverty (Beck, Demircuc-Kunt and Levine, 2007). The lack of financial access limits the range of services and credits for household and enterprises. Poor individuals and small enterprises need to rely on their personal wealth or internal resources to invest in their education and businesses, which limits their full potential and leading to the cycle of persistent inequality and diminished growth (Demircuc-Kunt, Beck and Honohan, 2008). The World Bank defines financial accessibility as "the proportion of people or enterprises that use financial services and products in a formal institution" and the growing recognition that access to financial services plays a fundamental role in "reducing extreme poverty, promoting prosperity for all and contributing to inclusive and sustainable development". Kumar et al (2007) also mention three dimensions of access: physical access, affordability and eligibility. Physical access refers to the number and convenience of service points. Financial accessibility refers to the costs associated with using the services. Eligibility refers to the conditions required to obtain financial services. However, the World Bank agrees that "improving access then means improving the extent to which financial services are available to all at an equitable price" World Bank (2008). Moreover, the cost of financial services is often a constraint for low-income individuals.

Diffusion Theory of Innovation

Diffusion of innovation theory, developed by Rogers in 1962, is one of the oldest social science theories; it originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system (Léger & Swaminathan, 2007). It is a theory that seeks to explain how, why and at what rate new ideas and technology spread. Rogers and Scott (1997) define innovation, as simply "an idea perceived as new by the individual and diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system, or a special type of communication concerned with the spread of messages that are perceived as new ideas. Communication patterns or capabilities must be established between parties as a minimum for diffusion to occur (Ghoshal, Bertlett, 1988). The social system is the combination of external influences (mass media, surfactants, organizational or governmental mandates) and internal influences (strong and weak social relationship distance from opinion leaders) Strong, Soule, Sarah (1998). There are many roles in a social system, and their combination represents the total influences on a potential adopter (Rogers 1983) Innovations are not adopted by all individuals in a social system at the same time. Instead, they tend to adopt in a time sequence, and can be classified into adopter categories based upon how long it takes for them to begin using the new idea. Practically speaking, it's very useful for a change agent to be able to identify which category certain individuals belong to, since the short-term goal of most change agents is to facilitate the adoption of an innovation. Adoption of a new idea is caused by human interaction through interpersonal networks. If the initial adopter of an innovation discusses it with two members of a given social system, and these two become adopters who pass the innovation along to two peers, and so on, the resulting distribution follows a binomial expansion. Expect adopter distributions to follow a bell-shaped curve over time (Rogers, 1971).

Adopter Categorization

The criterion for adopter categorization is innovativeness. This is defined as the degree to which an individual is relatively early in adopting a new idea than other members of a social system. Innovativeness is considered "relative" in that an individual has either more or less of it than others in a social system (Rogers, 1971).

Adopter distributions closely approach normality. The above figure shows the normal frequency distributions divided into five categories: innovators, early adopters, early majority, late majority and laggards. Innovators are the first 2.5 percent of a group to adopt a new idea. The next 13.5 percent to adopt an innovation are labeled early adopters. The next 34 percent of the adopters are called the early

majority. The 34 percent of the group to the right of the mean are the late majority, and the last 16 percent are considered laggards (Rogers, 1971).

Open Innovation Theory

Open innovation is a paradigm which states that firms can and should use external ideas as well as internal ideas, internal and external paths to the market as the firms look to advance their technology (Chesbrough, 2006). This open innovation theory considers that research and development is an open system where ideas come from both the internal and external sources. In the open innovation system they are no solid boundaries of the firm and both the internal and external paths to the market are considered similarly. This ensures that there is a vast knowledge database and resources in the industry thus fuelling innovations fast (Naqshbandi & Garib Singh, 2015). Open innovations are divided into two dimensions namely inbound open innovation and out-bound open innovation (Naqshbandi & Garib Singh, 2015). In the case of inbound open innovation it involves leveraging on discoveries made by others and establishing key business relationships with external firms with hope of enhancing its competencies towards innovation (Naqshbandi & Garib Singh, 2015). Out-bound open innovation is about the outflow of existing knowledge or technology with intent to leverage existing external technological capabilities. This exploitation of ideas can occur in different markets by selling intellectual property and increasing capabilities by diverting ideas to the external market (Gassmann, Enkel, & Chesbrough, 2010).

Fast pace developments in technology and the explosion of mobile technologies shortened product life spans. Thanks to the new information technologies, reaching information became extremely easy and this led the emergence of new entrants in various industries. Because of the high competition, companies are developing tailor made products in shorter periods. Even the most famous companies are struggling in competition and fulfilling customer demands. They try to find new ways to change this situation (Chesbrough, 2010). According to Chesbrough (2010), distributed knowledge and manufacturing, very low cost transportation of manufactured goods around the world, the reduction in time for a product to stay in the market create a commodity trap for product focused companies. Once a company produces a competitive product, it is easy for others to learn how to develop a similar one. This situation forces companies to change their product focused strategies (Chesbrough, 2010). Open service innovation is a beneficial way to break this commodity trap. It consists of four steps. Firstly, companies should assess their products or services as open businesses for creating differentiation. This view requires a change in organizations. Innovation process can be separated as innovation in back-end processes and innovation in frontoffices (Silva, 2014). Some companies are separating their front-end and back-end organizations since they require execution of different strategies. While front-end organizations are facing with customers and require customized solutions, back-end systems are more cost and efficiency focused. Secondly, they should include their customers for the creation process. Thirdly, companies should employ Open Innovation methods for enhancing service innovation. This can reduce the required time and costs for transformation. Lastly, creating a platform will make it possible to benefit innovations developed by other organizations (Chesbrough, 2010).

There are two important terms for companies to expand their businesses and increase their revenues. These are economies of scale and economies of scope. Economies of scale refers to the reduction of costs as the volume of production increases. On the other hand, economies of scope reflects the increase in efficiency when various products and services are offered to customers from a single source. This decreases the costs for additional offerings. For instance, cross-selling banking services are examples for economies of scope. This has great importance for open service innovations since customers play critical roles in services. Economies of scope also relies on the specialization of companies in different fields. In this sense, Chesbrough (2010) brings up modern farming. In contrast to traditional farming, modern farmers give importance to specialization and they focus on one or very few crops since different crops require different machinery and production methods. Platforms which aggregate these specialized producers offer best products and services to their customers. Chesbrough (2010) brings up changing automobile ownership through service platforms. According to his example, customers can be freed from ownership of a vehicle and wide variety types of vehicles can be provided through platforms. This disruptive model can enhance

customer satisfaction since customers won't be limited with ownership of a car and providers can expand their business models with collaboration and creation of different services. Instead of assessing the car as a transaction, new approach see it as a delivery method for services. In addition, smartphone-based vehicle sharing systems reflects that there is such a transition in automobile industry (Alli et al., 2012).

Disruptive Innovation Theory

Disruptive innovations is a theory by Clayton Christensen which states that these innovations that enable creation of new markets and value networks which eventually disrupt the legacy system of networks and markets over a period of time. These innovations assist in improving quality of products and services in new ways that the market does not expect and it's only the radical innovations that can ensure growth (Hamel, 2009). Disruptive innovation can be defined as the successful configuration of a product or service that changes the demands of a market and its needs ending up displacing the legacy players in the market (Yu & Hang, 2010). The characteristics of these disruptive innovations are that they are inferior to the market place product attributes, provide unique and new value system to the either a new consumer or to market that is price oriented, prices are lower and they enter and succeed in the market from niche to mainstream(Govindarajan&Kopalle, 2006). Disruptive technologies offer alternative values from the mainstream technologies and at the beginning could perform lower than the legacy technologies which could result to resistance from traditional customers. Disruptive innovations occur as a process which seeks to develop and improve products to serve a niche market which does not consider the nonstandard attributes. Market disruptions occur when the new seemingly inferior products overtake and displace the traditional mainstream products despite the performance (Hamel, 2009). They occur from gaps that exist in the market where small ideas are combined with a different world perspective which challenges the status quo and looks into new horizons. They set unthinkable goals and set the customers to a new unexplored view challenging their expectations (Harvey16 *et al.*, 2012).

Methodology

The study adopted a descriptive survey research design to carry out this study. This research design aided the eliciting of responses to the research questions. This approach described the theoretical or hypothetical constructs which answers the questions asked in the research study. The population of the study were from the selected financial technology firms in Lagos. The research instrument adopted for this study was questionnaire. It was adopted to elicit primary data from the population of the study. It was distributed among the members of staffof selectedfinancial technology firmsoperating in Lagos in order to get the information required to carry out this research study. The research instrument was administered using a simple random sampling technique. However, the researcher utilized the Yamane (1967) sample size determination techniques to arriveat ninety-two (92) sample size (respondents). Therefore, a total number of ninety-two (92) employees were selected among the financial technology firms used for the study.

Data Presentation and Interpretation

Research Hypotheses

- Ho1: Technological innovation doesn't have a significant influence on organization's efficiency and effectiveness
- Ho2: Financial innovation doesn't have a significant influence on profitability
- Ho3: No relationship exists between financial accessibility and organization's sales revenue

Table 4.1: Regression Summary for Hypothesis 1

Variable(s)	Coefficient	t-value	p-value
Constant	1.878	1.725	0.088

Technological Innovation	0.851	12.697	0.000
F-stat=161.222P-value=(0.000)			R ² =0.657

Source: SPSS (2020)

The results on table 4.1 above reveals that technological innovation has a significant effect on efficiency and effectiveness. This can be deduced from the regression co-efficient and the probability value (B=0.851, P< 0.05). This implies that a one unit change in technological innovation, will lead to a 0.851 change in efficiency and effectiveness. The co-efficient of determination (R²) of 0.657 indicates that technological innovation accounts for 65.7% variation in the firm’s efficiency and effectiveness. Therefore, the null hypothesis will be rejected while the alternative hypothesis will be accepted.

Table 4.2: Regression Summary for Hypothesis 2

Variable(s)	Coefficient	t-value	p-value
Constant	4.528	2.534	.013
Financial Innovation	0.695	6.404	.000
F-stat=41.015P-value=(0.000)			R ² =0.336

Source: SPSS (2020)

The results on table 4.2 above reveal that financial innovation has a significant effect on profitability. This can be deduced from the regression co-efficient and the probability value (B=0.695, P< 0.05). This implies that a one unit change in financial innovation, will lead to a 0.336 change in profitability. The co-efficient of determination (R²) of 0.33 indicates that financial innovation accounts for 33.6% variation in profitability. Therefore, the null hypothesis will be rejected while the alternative hypothesis will be accepted.

Table 4.3: Regression Summary for Hypothesis 3

Variable(s)	Coefficient	t-value	p-value
Constant	16.985	6.436	.000
Financial Accessibility	-0.127	-0.785	0.435
F-stat=0.617 P-value=(0.435)			R ² =0.008

Source: SPSS (2020)

The results on table 4.3 above reveal that financial accessibility has no significant effect on sales revenue. This can be deduced from the regression co-efficient and the probability value (B= -0.127, P> 0.05). This implies that a one unit change in financial accessibility, will not lead to a change in sales revenue. The co-efficient of determination (R²) of 0.008 indicates that financial accessibility doesn’t account for a variation in the firm’s sales revenue. Therefore, the null hypothesis will be accepted while the alternative hypothesis will be rejected.

Conclusion and Recommendations

The study concludes that implementation of financial technology makes the firm to save great resources and reduces costs of operations, reduce cost per transaction in businessoperations and enable firms to satisfy their customer’s needs. The study also observed that implementing product, process and financial and technology innovation makes the firm become more flexible in their operations as it leads to efficiency and increased profitability in the organization. Consequently, the study recommends that firms should try inculcating innovation in their technological operations as this has proven in this study that it would bring about efficiency and cost minimization. This study also recommends that firms in Nigeria should embrace the modern financial innovativeness and new unique technological based ways of operating as this will lead to increased profitability. Furthermore, firms should also align government policies to their strategies and plans so that sudden change in government policy will not negatively affect their operations. In view of this,

financial technology should be encouraged and integrated into business operations, activities and systems in order to enhance efficiency and effectiveness and also encourage employees to be technologically creative so that deployment of technology can be seamless and easy for them to do.

REFERENCES

- Adams, W., Einav, L. and Levin, J. (2009). Liquidity Constraints and Imperfect Information in Subprime Lending, *American Economic Review* 99(1), 49-84.
- Ajzen, I. & Fishbein, M. (1980) *Understanding attitudes and predicting social behavior*, Englewood Cliffs, NJ: Prentice-Hall
- Alli, G., Baresi, L., Bianchessi, A., Cugola, G., Margara, A., Morzenti, A., Ongini, C., Panigati, E., Rossi, M., Rotondi, S. and Savaresi, S. (2012). Green Move: towards next generation sustainable smartphone-based vehicle sharing. In *Sustainable Internet and ICT for Sustainability (SustainIT)*, 2012, 1-5.
- Alvarez, F. & Francesco, L. (2009). *Financial Innovation and the Transactions Demand for Cash*.
- Assadi, D. (2015). *Strategic Approaches to Successful Crowdfunding*, 1st ed. IGI Global.
- Beck, T. and Frame, W.S. (2018) *Technological Change, Financial Innovation, and Economic Development*, in *Handbook of Finance and Development* edited by T. Beck and R. Levine. Cheltenham UK: Edward Elgar
- Chen, H., Chiang, R.H. and Storey, V.C., (2012). Business Intelligence and Analytics: From Big Data to Big Impact. *MIS quarterly*, 36(4), 1165-1188.
- Chesbrough HW (2006) *Open Innovation: A New Paradigm for Understanding Industrial*. In: Chesbrough HW, Vanhaverbeke W, West J (eds) *Open innovation: researching a new paradigm*. Oxford University Press.
- Chesbrough, H. (2003). *Open innovation: The new imperative for creating and profiting from Technology*, Boston: Harvard Business School Press.
- Chishti, S., & Barberis, J. (2016). *The FINTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries*. John Wiley & Sons
- Claudio, C., Teresa, G. & Cristina, B. (2006). Does technological innovation efficiency really matter for firm performance?
- Congressional Research Service (2020). *Fintech: Overview of Innovative Financial Technology and Selected Policy Issues*.
- Dapp TF, Slomka L, Deutsche Bank AG, Hoffmann R (2014) *Fintech—The digital (r) evolution in the financial sector*. Deutsche Bank Research.
- Dapp TF, Slomka L, Deutsche Bank AG, Hoffmann R (2014) *Fintech—The digital (r) evolution in the financial sector*. Deutsche Bank Research.
- Demirgüç-Kunt, A., Beck, T., & Honohan, P. (2008). *Finance for All?: Policies and Pitfalls in Expanding Access*. Washington, D.C.: The World Bank.
- DeYoung, R. (2005). The Performance of Internet-Based Business Models: Evidence from the Banking Industry, *Journal of Business* 78(3), 893-947.
- Di Castri, S. (2013). *Mobile money: Enabling Regulatory Solutions*. Available at SSRN: <https://ssrn.com/abstract=2302726> or <http://dx.doi.org/10.2139/ssrn.2302726>
- European Banking Federation (2015). *The Digital Transformation of Banks and the Digital Single Market*. www.ebf.eu
- Festinger, L. (1957) *A theory of Cognitive Dissonance*, Stanford, CA: Stanford University Press
- Frame, W.S., Wall, L. & White, L.J. (2018). *Technological Change and Financial Innovation in Banking: Some Implications for FinTech*.
- IOSCO. (2017). *Research Report on Financial Technologies (Fintech)* Retrieved from <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf>:
- Iriobe, G. & Akinyede, O. (2017). *The Effect of Financial Technology Services on Banks Customers Satisfaction in Nigeria*. *Electronic Journal*.

- Iriobe, G. & Akinyede, O. (2017). The Effect of Financial Technology Services on Banks Customers Satisfaction in Nigeria. *Electronic Journal*.
- Kahiga, D.M. (2014). Effect of Financial Innovation on Profitability of Deposit Taking Microfinance Institutions in Kenya.
- Kemboi, B.J. (2018). Effect of Financial Technology on the Financial Performance of Commercial Banks in Kenya. Masters Research Project. University of Nairobi.
- Kim, Y., Young-Ju P., Jeongil C, and Jiyoung Y. (2016). The adoption of mobile payment services for Fintech.” *International Journal of Applied Engineering Research* 11 (2), 1058–1061.
- Lin, Y., Deng, N. & Gao, H. (2018). Research on Technological Innovation Efficiency of Tourist Equipment Manufacturing Enterprises. *Sustainability*.
- Maholtra, P. and Singh, B. (2007): “Determinants of Internet Banking Adoption by Banks in India”, *Emerald Internet Research* 17(3); 323-339 10.
- McCance, D. (2017). EY to take to the sky with new audit drones. *Economia*.
- PwC. (2016). *Financial Services Technology 2020 and Beyond: Embracing Disruption* (PDF).
- Richardson, B. (2008). Enhancing Customer Segmentation Processes and Optimising Adoption Techniques to Support Efforts to "Bank the Unbanked." Presentation given during the Mobile Banking & Financial Services Africa conference in Johannesburg, South Africa.
- Rogers, E.M, (1983), *Diffusion of innovations* (3rded.). New York: Free Press of Glencoe.
- Sanicola, L. (2017). What is FinTech?. *Huffington Post*. Retrieved August 20, 2017.
- Schueffel, Patrick (2017). Taming the Beast: A Scientific Definition of Fintech. *Journal of Innovation Management*. 4(4), 32–54.
- Schuettel, P. (2017). *The Concise Fintech Compendium*, Fribourg: School of Management Fribourg.
- Schüffel, P. (2016). Taming the Beast: A Scientific Definition of Fintech. *Journal of Innovation Management*. p. 32–54.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, UK: Harvard University Press
- Starbuscks, (2017). Starbucks reports record Q3 FY17 financial and operating results, Starbucks.
- The World Bank GFDR Report
- Venkatesh, V., Morris, M. G., Davis, G. B. & Davis, F. D. (2003) User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478
- Wu, J. H. and Wang, S C. (2005), "What drives mobile commerce? An empirical evaluation of the revised technology acceptance model", *Information and Management*, 42 (5), 719–729