

*Agnieszka Wójcik-Czerniawska*

SGH Warsaw School of Economics

Orcid: 0000-0002-9612-1952

## Financial innovations and new tools in finance

---

### ABSTRACT

---

A benefit in and of itself is not what makes innovation so valuable. In order to make the company 'more innovative,' you might hear someone advise a certain course of action. Additionally, a company's ability to innovate successfully can serve as a magnet for the best and brightest in the industry. They become steadfast employees who appreciate the opportunity to be part of the company's innovation efforts. Managing innovation is a systematic strategy to implement changes that aim to improve a company's products, processes, or overall position. There must be an increase in sales or customer satisfaction, a stronger working relationship between the company's many divisions, or a better working environment for employees as a result of the changes. Financing innovation refers to the development of new financial products, services, or procedures. Throughout the years, innovations in financial instruments and payment methods have fuelled financial innovation. Bank performance depends on financial innovation because it has the potential to boost the industry's efficiency and profitability. Banks utilise financial and organisational innovation to save money and improve the sector. Using a cash dispensing machine provides users with an ability to withdraw money whenever and wherever they want. With a single click, you can receive or pay cash via mobile banking. This is a great choice for people who do not feel comfortable going to typical bank offices. With negligible transaction costs, it is one of the most cost-effective ways to evaluate financial services.

**Keywords:** financial innovation, financial sector, mobile banking, ATM, financial strategies, innovation new tools

**JEL Classification:** G00, G1, G10

---

---

## Introduction

Managing innovation is a systematic strategy to implement changes that aim to improve a company's products, processes, or overall position. For a company's innovation efforts to be fruitful, the market must respond positively, either through increased sales or customer happiness, a more positive public perception of the company, or improved interactions between employees and the various divisions of the organisation [Asmundson, 2011, pp. 46–47]. There must also be a careful balance between preserving the long-term viability of the organisation while also ensuring that new ideas are not jeopardising it. In order to understand innovation, it is not enough to focus solely on the quality of the items we offer. We have an ability to transform the company's business operations, products, and general focus and direction. However, a well-balanced control mechanism for innovation management is required [Lopez Rodriguez, Garcia Lorenzo, 2011].

Management accounting, management theory, and human resources administration are all included in this type of Management Control System. An important part of this management system is its emphasis on interdisciplinary knowledge and skills, which include mastering planning tools based on research, objectives, visions, and missions (management), as well as control tools based on evaluations of deviations and the proposal of risk management measures (controlling). For a firm to succeed, one must understand all of its operations and their interrelationship.

## Objectives of the study

1. To examine the new financial products, services, or processes, which are the result of financial innovation. Inventions in areas such as technology, risk management, risk transfer, credit and equity formation are all examples of such shifts.
2. To manage innovation strategies in the organisation with the application of new financial tools.
3. To determine the division of innovation in finance by the application of new tools.

## Theoretical framework

Prevailing research recommends that the organisation's bookkeeping and the board certified public accountant are a fundamental piece of the supervision cycle. For example, research in essential 'management accounting' has investigated how technology ensnares the bookkeepers' support in essential dynamic cycles, while one more stream of examination has demonstrated the way that administration bookkeepers can assist with exploratory advancement.

The specific job of the management's accounting and control frameworks (MACF) in creative settings is muddled and progressively inspected. By and large, it must be noticed that regularly acknowledged definitions do neither exist for advancement nor for the board accounting. Concerning the meaning of the executives accounting or controlling, managerial accounting (MA), managerial accounting frameworks, or executive control frameworks are utilised reciprocally. Conventional administration accounting and control instruments have frequently been considered to impede development endeavours on the grounds that the order and control culture does not fit with the opportunity and adaptability advancements require. Notwithstanding, rather than this customary view, "another worldview has been arising throughout the past ten years featuring the pertinence of accounting and control to advancement" by empowering and permitting vulnerability and exemptions and, along these lines, supporting developments [Bara et al., 2016, pp. 34–35].

Other studies show that controls that further develop dynamic cycles can improve inspiration of people to search for new arrangements. Looking for exploratory developments requires breaking out hierarchical smugness and setting off people's group activity to search for groundbreaking thoughts and valuable open doors. Individuals, be that as it may, will generally stop looking for novel thoughts and fall into schedules when they are happy with existing circumstances. Since people unknowingly adjust to their surroundings, their limits for activity are frequently not set off while they adjust over the long run.

## Creating a culture of innovation management

As a small or medium-sized organisation grows, so does the need for innovation management. This can be shown in a hierarchical manner (Figure 1), because each higher-ranking idea has a greater impact on the overall success of the business.

These are operational advancements (which is why they are sometimes called operational innovations). In most cases, process innovation is not a short-term benefit, but rather the foundation for long-term success. In essence, it is the systematic improvement of the activities targeted at reducing costs or enhancing performance in order to optimise all defined business processes of strategic and operational importance [González Páramo, 2017, pp. 9–37]. For small and medium-sized businesses to benefit from process modifications, they should apply some of these strategies to their fullest degree.

The process of generating new financial products, services, or procedures is known as financial innovation. Advances in financial instruments and payment methods have been the driving force behind financial innovation over the years [Saksonova, Kuzmina-Merlino, 2017]. With these reforms, the availability of loans for borrowers has expanded while banks have been offered new and less expensive options for raising capital. It is possible to categorise the numerous types of financial innovation under the umbrella word 'financial innovation'

itself. Despite the fact that the following is not an entire list, key financial advancements have occurred in equity capital, remittances, and mobile banking.

The method of raising equity capital has become more open and accessible through crowd-sourcing. New infrastructure has made it possible for ordinary investors to invest in projects that they are enthusiastic about and/or have other ties to for a little amount. Individuals that participate in the new firm receive a proportionate number of shares based on their investment. There is no ownership stake in this asset class, but rather a regular interest payment until the loan is paid back in full. Another aspect of financial innovation is remittances [Zavolokina, Dolata, Schwabe, 2016, pp. 1–16]. Wire, mail, or internet transfer remittances are funds that expatriates send back to their place of origin. Considering how much money is sent back and forth, remittances are a significant source of revenue for many countries that receive them. In the early 2000s, the World Bank created a pricing comparison database for consumers to use.

In the financial industry, 'financial innovation' refers to the introduction of new products and services into financial institutions and markets through the use of new technology. Process, product, and institutional innovation all fall under one umbrella. Automated Teller Machines (ATMs) [Siddik, Kabiraj, 2020, pp. 155–168], mobile banking, online banking are all examples of process innovation in the banking industry. Introducing new financial institutions like cheap brokerages, internet banking, specialised credit card companies, etc., is an example of an institutional innovation. As a result, a more efficient method of engaging with clients is possible thanks to these types of innovations. They also include breakthroughs in technology, equity generation, and risk transfer, which improve the availability of credit for borrowers and give financial institutions a new and low-cost method of raising capital.

The smooth operation of the financial and real estate industries depends critically on the manner of payment in an economy. Instantaneous settlement of financial transactions and the rapid exchange of goods and services are the hallmarks of an efficient payment system. Many of these developments have become more widely accepted around the world in the previous few decades.

An ATM is a computerised self-service device that enables customers to withdraw cash and perform other banking operations through the use of a debit or credit card and a personal identification number (PIN). In the early twentieth century, there was a growing interest and rapid growth in automation [Chen, 2018, pp. 279–292]. Despite the push to stop Saturday business hours in Europe and branch development constraints in the US, this breakthrough was able to become one of the most significant technological innovations in financial history. However, it took around 18 years for this to become a reality in society, from idea generation to commercialisation.

In the eyes of the banking industry, financial innovation is a vital factor in the success of banks, since it has the potential to improve both the efficiency and profitability of the industry. In order to save money and improve the industry, banks use financial and organisational innovation. On the basis of the fact that financial innovation is a crucial force and has critical potential to improve banking performance, these theories are all consistent. The ability of banks

to create the maximum amount of revenue from their resources can be used as a measure of their efficiency. For banking innovation products, ICT must not be overlooked.

One of the advantages of using a cash distributing machine is that it allows consumers to withdraw money whenever and wherever they choose to [Niranjala, 2020]. Cash distribution devices are often located in banks' facilities or specified areas established by institutions. For clients, this facility saves time in service delivery, which may be used for more productive purposes. There are ATMs at restaurants and hotels, shopping malls, gas stations, as well as other locations. On this basis, the hypotheses might be the following:

*H1: Automated teller machines and banks' deposit money efficiency ratios are linked.*

## **Mobile banking**

This refers to the use of mobile devices to conduct banking transactions. Mobile devices such as smartphones play an important role in initiating, approving, and completing transactions instead of traditional banking processes. Since 2016, the number of people using the Internet has nearly doubled, and mobile phones have certainly contributed to it [Bara, Mugano, Le Roux, 2016, pp. 483–495]. The extensive range of services offered by mobile banking allows one to receive or pay cash with just one click. There is a various advantage for both banks and end-users to using this method of payment [Nguena, 2019, pp. 69–94]. For individuals who do not feel comfortable visiting traditional bank offices, this is a fantastic option because it is one of the cheapest sources for evaluating financial services with minimal transaction costs, and it saves time on service delivery. As a result of earlier research, the current study comes to the following alternative hypothesis conclusion:

*H2: Mobile banking and banks' deposit money efficiency ratios go hand in hand.*

## **E-commerce (electronic banking)**

Electronic banking provides customers with premium services when they are sitting at their homes or offices, where they can access the Internet [Akani, Obiosa, 2020, pp. 52–72]. Internet and telecommunications services, when combined, provide for a wide range of valuable products and services that end-users may easily access and use. E-banking has only lately begun to take hold. In order to encourage the use of e-banking, online banking systems offer their users a number of benefits, including an ability to access information material to make investment or financing decisions at any time and from any location [Tang et al., 2021, pp. 1844–1861]. There is a constant strive to improve their services and the financial industry as a whole in order to compete with each other. As a result, one of the primary goals of electronic banking is to provide consumers with an environment in which they can readily

access the data they need to conduct financial transactions [Henry et al., 2003]. This study concludes the following alternative hypothesis based on past research:

*H3: Banks' deposit money efficiency ratios are linked to electronic banking.*

## Collateralised debt obligations (CDOs)

Asset-backed securities, or so-called collateralised debt-obligations (CDOs), were initially introduced in the United States in 1987 and have since become increasingly popular around the globe [Shehzad et al., 2021, p. 8962]. The emergence of low-rated securities in the early twenty-first century spawned a new market for 'tranches' of them. This innovation was founded on the idea that pooling numerous bonds minimises investors' exposure to the failure of any one bond. It entailed a complex process of purchase, pooling, trenching, and selling (to investors) assets to generate diversification benefits. In the past, CDOs were made up mostly of bank loans, corporate bonds, and emergency bonds, but this has changed. In response to the 1998 liquidity crisis, asset pools makeup was expanded to include securities backed by assets from diverse sectors (e.g., mortgages, mobile home loans, aircraft leases, and mutual fund fees). Because of the poor performance of the so-called 'multi-sector' CDOs, the composition of CDO asset pools was altered in 2002. It was claimed that CDO management had a good grasp of the industry and that the returns were satisfactory. This method was made substantially more difficult by the exclusion of a variety of collateral types, including residential mortgage-backed securities and non-agency mortgages.<sup>1</sup>

Participants in the creation and oversight of the first CDOs included everyone from investors to securities firms, CDO managers, rating agencies, or financial guarantors [Financial Crisis Inquiry Commission, 2011]. Collateral, portfolio management, portfolio oversight, and CDO underwriting were all done by CDO managers and financial guarantors.

Even if there was some forethought and contemplation involved in the CDO development process, the concepts of consideration and responsiveness were restricted, according to the financial crisis inquiry commission report on the CDO machine [Financial Crisis Inquiry Commission, 2011].

CDO pioneers in the late 1990s predicted a significant default risk as a likely outcome of their innovation (arising from the sale of low-investment-grade assets). On the other side, systemic risk refers to the possibility of the entire financial system collapsing due to this issue. It seemed to them that the fact that "both security systems would go wrong at the same moment if one went bad" was exceedingly unlikely [Financial Crisis Inquiry Commission, 2011, p. 128]. Preparatory and reflective processes were not properly implemented. Entire ramifications of complex developments are impossible to predict, not even with careful analysis (within and beyond the financial sector).

---

<sup>1</sup> Compare Zhao, H., Seibert, S.E. (2006). The Big Five Personality Dimensions and Entrepreneurial Status: A Meta-Analytical Review. *The Journal of Applied Psychology*, 91(2), pp. 259–271.

**Table 1. Categories of financial innovation**

Criteria	Type of financial innovation
Sources of innovation	Innovations driven by supply innovations that are driven by consumer demand
Factors of innovation	Driven by external causes Innovations propelled by internal forces
Motives of innovation	Innovations that are able to adapt to the needs of the target audience Innovations that are designed to keep people safe Innovators who respond quickly
Elements of the financial systems	Inventions in the financial sector Financial policy changes
Types of innovation	Inventions in the realm of goods Innovations in procedures
Effect of innovation	Inventions that are long-lasting Inventions that cause harm

Source: Financial Crisis Inquiry Commission, 2011.

Deliberation, on the other hand, was restricted to the aforementioned five important players, each of whom took on varied degrees of risk and gained handsomely for a time. Although the innovation was discussed in a slanted manner, it was not adequately considered in terms of its larger effects, particularly on the public. The complexity in CDO development made contemplation and deliberation more challenging, so that board members and management may have only taken a passive role in their creation and commercialisation in some circumstances [Chitra, Ramyasreedevi, 2021, pp. 47–57]. It is not unexpected that institutions did not do a good job of responding adequately. Adding to the problem, CDOs were issued at a rapid pace, resulting in a total of approximately \$ 700 billion in CDOs issued between 2003 and 2007.

## Phases of financial control tools implementation

Financial control tools are implemented by companies because they are required to be done so. At some point, the company's financial managers outgrow their simple spreadsheets in Excel and need more sophisticated tools that can offer them more accurate data and a greater analytical ability.

In addition, because the ideas are so similar, the background and previous experience that most professionals have with various support devices create a crucial foundation. Hiring an adviser or a consulting firm is strongly suggested [Goode, Mountinho, 2020, pp. 33–40], especially during a given tool's implementation stage, which is the most difficult one.

The banking industry as a whole is experiencing a shift in customer expectations. Innovation is not only about a long-term success in an ever-changing economy, it is a question of survival. Until recently, customers had to go to the bank to get financial assistance. However, during the past two decades, the rise of online banking and mobile money has transformed

everything. Nowadays, clients demand rapid and efficient services that can be accessed using a variety of delivery methods. It is all about adaptability and ease of use these days, after all. Rethinking operational models and investing in innovation have been the result of this.

## The value of banking innovation

In the financial industry, COVID-19 had a profound effect. When regional branches were shut and employee capacity was reduced, individuals found it more difficult than ever to receive essential services, particularly in emerging markets. Additionally, this exposed the industry's digital inadequacies and lack of innovation.

Banks can benefit from innovation by:

- adapting to the evolving needs of their customers;
- eliminating inefficiencies inside the organisation;
- maintaining a significant portion of the market;
- adapting to the changing consumer landscape.

Customers are becoming more knowledgeable about technology. Instead of visiting a branch, many people choose to manage their affairs on their laptops or mobile devices. This need for speedier, more efficient financial services may be met by banks that innovate and capitalise on market trends by introducing attractive new products.

For everything from data storage to reporting [Mishchenko et al., 2021, pp. 191–203], banks continue to rely on human processes. Despite this, digital technology has revealed the inefficiencies of more traditional methods. Automating the process of generating prudential regulatory reports, for example, has proven beneficial to many financial institutions in terms of saving time and improving accuracy [Byegon, 2020].

Innovation is not only about introducing a fresh and intriguing product to the market. Even if it is a new industry trend or a brand refreshment, it is just as crucial to keep one's market share in check.

With a wide spectrum of enterprises, the financial services industry is difficult to categorise [Muthuka, 2021]. However, it falls into four basic categories: money lenders, other financial institutions, insurance companies/intermediaries, and activities supplementary to financial intermediation [Zakharchenko et al., 2021]. Building societies, as well as central, investment, and commercial banks, are all instances of monetarist financial institutions. Banks are not the only financial organisations out there. Credit unions and cooperatives are among the many other options, as are payment service providers like PayPal, electronic money institutions like Payday Loans, and mortgage and home-finance lenders like finance leasing companies.

Individual or institutional investors can deposit money into funds (e.g., pension funds, unit trusts) or businesses in the form of equity institutions through monetary and other financial institutions [European Central Bank, 2015]. In various subsectors of the financial services industry, innovations in products, processes, and services can take place in either



a conventional product life cycle or in what Barras calls a reverse product cycle. According to this innovation paradigm, current process improvements and breakthroughs rather than the other way around, generate ideas for future product concepts [Barras, 1986]. In either case, a change is occurring. Some monetary and financial intermediaries, such as investment banks, can benefit from new technologies that help to reduce financial risk by creating control mechanisms for limiting the size and breadth of financial trades [Nightingale, Poll, 2000, pp. 113–141].

Risks are pooled and diversified by insurers and insurance intermediaries [Harrington, Niehaus, 1999]. Financial markets and asset management organisations, for example, facilitate trade between borrowers and lenders and assist individuals in making investments and financial planning decisions (e.g., financial advisers). These kinds of financial organisations are known for their innovative goods, procedures, technologies, and services [Batiz-Lazo, Woldesenbet, 2006, pp. 400–421].

## Controlling innovation

The first aspect that needs to be addressed on controlling innovation is that innovation always befalls in a probability situation. A company is not familiar with the results or whether the technical outcomes will be produced while controlling and managing innovation in new tools in finance, controlling, and managing accounting or the innovation will be successful in the market. There are many cases in which one technical innovation process succeeds in managing accounting and finance whereas 99% of processes fail, which acts as a prime factor to cause risk in the company.

## Controlling strategic innovation

Strategic innovation is the reinvention and redesigning of corporate or financial strategies; strategic innovation allows a business to grow, compete in the market, and create value for both the customers and the company. This type of innovation is led by top executives of the company. Controlling strategic innovations would focus on the following aspects: what type of services should be rendered, in which market competition will be high, where the company should compete, how to satisfy customers, what the basic expansion elements are that need to be changed. These considerations will help to control strategic innovations in managing finance and accounting tools.

## Foresight-oriented metrics

Foresight-oriented metrics is a way of thinking that is in the structure and system related to upcoming changes and innovation in the organisation. Organisations develop holistic understanding of external changes that are developing outside the organisation. Since the ultimate success of innovations is often linked to financial results, it is useful to recollect major indications of financial analysis to analyse the effectiveness of innovations utilised.

## Recommendations

- For commercial banks, ATMs and point-of-sale (POS) machines are more cost-effective and efficient because of their negative nexus with the efficiency ratio;
- Web/Internet and mobile banking transactions have a positive and cost-effective relationship with efficiency;
- This means that investment in ATMs and point-of-sale systems will reduce the operating expenses to the next income ratio for commercial banks, while the other two existing platforms of the Internet/mobile banking infrastructure should be effectively managed and utilised, rather than establishing new ones that will consume a larger portion of net operating income;
- In order to reduce transaction costs, increase customer happiness, and improve banks' efficiency ratio, the two ways should be revamped in a way that clients can easily access these channels.

## Summary

Although the risk of fraud linked with electronic payment platforms remains constant, the influence of financial innovation products like ATMs and the Internet/Web/POS financial performance is undeniable.

As a result of the study, it was shown that banks' operating expenses to net operating income ratio is inversely correlated with investment in automated teller machines (ATMs) and point of sale (POS) infrastructural investment. The infrastructure for technological advancement, such as financial innovation goods, is truly governed by the efficiency ratio. In the banking sector, it is tentatively concluded that the efficiency ratio influences the use of financial innovation (information technology) products.

However, security and limited capabilities remained key challenges, leading to ongoing improvements in both functionality and hardware. PINs, web-enabled systems with online capabilities, and modular systems with memory store customisation options were among the

newly announced advances in ATM specialised characteristics. Self-regulation, rather than legislation, was used to create ATMs. With the increasing use of committees made up of people from a variety of specialties, debate became simpler. Although these discussions were reactive, they were limited to issues that were discovered after deployment and focused on security.

## References

1. Asante, K., Owen, R., Williamson, G. (2014). Governance of new product development and perceptions of responsible innovation in the financial sector: insights from an ethnographic case study. *J Responsible Innov.*
2. Asmundson, I. (2011). What are financial services? How consumers and businesses acquire financial goods such as loans and insurance. *Finance Dev*, 48, pp. 46–47.
3. Barras, J. (1986). Towards a theory of innovation in services. *Res Policy*, 15, pp. 161–173
4. Bara, A., Mugano, G., Le Roux, P. (2016). Financial innovation and economic growth in the SADC. *African Journal of Science, Technology, Innovation and Development*, 8(5), pp. 483–495.
5. Barrick, M.R., Mitchell, T.R., Stewart, G.L. (2003). Situational and Motivational Influences on Traits Behaviour Relationships? In: M.R. Barrick, A.M. Ryan (Eds.), *Personality and Work: Reconsidering the Role of Personality in Organizations* (pp. 60–92). San Francisco, CA: Jossey-Bass.
6. Batiz-Lazo, B., Woldeesenbet, K. (2006). The dynamics of product and process innovations in UK banking. *Int J Financ Serv Manag*, 1, pp. 400–421.
7. Burgess, S. (2011). Measuring financial sector output and its contribution to UK GDP. *Quarterly Bulletin*. UK: Bank of England.
8. Chitra, K., Ramyasreedevi, V. (2011). Does Personality Traits Influence the Choice of Investment? *The IUP Journal of Behavioural Finance*, 7(2), pp. 47–57.
9. Curran, K., King, D. (2008). Investigating the human computer interaction problems with automated teller machine navigation menus. *Interactive Technol Smart Educ*, 5, pp. 59–7.
10. European Central Bank (2015). *Monetary Financial Institutions* [Online]. European Central Bank.
11. Financial Crisis Inquiry Commission (2011). The CDO Machine. In: P. Angelides (Ed.), *Financial Crisis Inquiry Report*. DIANE Publishing.
12. Frame, W.S., White, L.J. (2004). Empirical studies of financial innovation: lots of talk, little action? *J Econ Literature*, 42, pp. 116–144.
13. Germain, R. (2010). Financial governance in historical perspective: lessons from the 1920s. In: G. Underhill, J. Blom, D. Mügge (Eds.), *Global financial integration thirty years on: from reform to crisis*. New York: Cambridge University press.
14. Goode, M, Moutinho, L. (1995). The effects of free banking on overall satisfaction: the use of automated teller machines. *Int J Bank Mark*, 13, pp. 33–40.
15. Gubler, Z.J. (2011). The financial innovation process: theory and application. *Delaware J Corporate Law*, 36, pp. 55–119.
16. Harrington, S.E., Niehaus, G. (1999). *Risk management and insurance*. Irwin/McGraw-Hill.

17. Harper, T., Batiz-Lazo, B. (2013). *Cashbox: the invention and globalization of the ATM*. Canada: Butler Books.
18. Henry, C., Hill, F., Leitch, C. (2003). *Entrepreneurship Education and Training: The Issue of Effectiveness*. London: Ashgate Publishing.
19. Llewellyn, D. (1992). Financial innovation: a basic analysis. In: H. Cavanna (Ed.), *Financial innovation*. London: Routledge.
20. Lucas, D.J., Goodman, L.S., Fabozzi, F.J. (2008). *Collateralized Debt Obligations: Structures and Analysis. Handbook of Finance*.
21. Mullard, M. (2012). The credit rating agencies and their contribution to the financial crisis. *The Political Quarterly*, 83, pp. 77–79.
22. Nguena, C.L. (2019). On financial innovation in developing countries: The determinants of mobile banking and financial development in Africa. *Journal of Innovation Economics Management*, (2), pp. 69–94.
23. Nightingale, P., Poll, R. (2000). Innovation in investment banking: the dynamics of control systems within the Chandlerian firm. *Ind Corp Chang*, 9, pp. 113–141.
24. Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., Fisher, E., Guston, D. (2013). A framework for responsible innovation. In: R. Owen, J. Bessant, M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society*. United Kingdom: Wiley.
25. Shane, S., Nicolau, N., Cherkas, L., Spector, T.D. (2010). Genetics, the Big Five, and the Tendency to be Self-Employed. *The Journal of Applied Psychology*, 95(6), pp. 1154–1162.
26. Siddik, M.N.A., Kabiraj, S. (2020). Digital finance for financial inclusion and inclusive growth. In: *Digital transformation in business and society* (pp. 155–168). Cham: Palgrave Macmillan.
27. Stefanadis, C. (2003). Self-regulation, innovation, and the financial industry. *J Regul Econ*, 23, pp. 5–25.
28. Tang, Y.M., Chau, K.Y., Hong, L., Ip, Y.K., Yan, W. (2021). Financial Innovation in Digital Payment with WeChat towards Electronic Business Success. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), pp. 1844–1861.
29. Tidd, J., Bessant, J.R. (2009). *Managing innovation: integrating technological, market and organizational change*. Chichester: Wiley.
30. Zhao, H., Seibert, S.E. (2006). The Big Five Personality Dimensions and Entrepreneurial Status: A Meta-Analytical Review. *The Journal of Applied Psychology*, 91(2), pp. 259–271.