

**THE ROLE OF EFFICIENCY EMPOWERMENT AND INNOVATION IN
ENHANCING ORGANISATIONAL PRODUCTIVITY: A STUDY OF DANGOTE
GROUP OF COMPANIES**

Andrew Nnamdi ASOYA¹, Mercy OSARHIEMEN² & Paul OKORIE³

¹ACPRO, Consultancy and business development, Lotobi.jojo@yahoo.com

²ACPRO, Corporate Affairs and Information Department, osarhiemenmercy@gmail.com

³ACPRO, Consultancy and Business Development, Pokorie75@gmail.com

ABSTRACT

Organisations increasingly rely on innovative products and digital technologies to improve employee efficiency and organisational productivity. However, the availability of innovative tools does not necessarily translate into improved organisational performance when employees lack adequate support, training, or integration of such tools into existing work processes. This study examined the role of efficiency empowerment and innovation in enhancing organisational productivity at Dangote Group of Companies. Specifically, the study examined the extent to which innovative products enhance employee efficiency, the effect of efficiency empowerment on work performance, and the relationship between the integration of innovative products and organisational productivity. The study adopted a descriptive survey research design. Data were collected from 100 employees of Dangote Group of Companies using a structured questionnaire based on a five-point Likert scale. Data were analysed using frequencies, percentages, and mean scores, with a criterion mean of 3.00. The findings indicate that employees' use of innovative products enhances task completion, reduces repetitive work, improves work quality, and increases motivation. However, the findings also reveal weaknesses in training, workflow integration, and organisational measurement of productivity outcomes. The study concludes that innovation contributes to organisational productivity when it is accompanied by employee empowerment, appropriate training, workflow integration, and management support. The study recommends institutionalised training, deliberate redesign of work processes, stronger management support, and the use of measurable productivity indicators to assess the organisational value of innovation.

Keywords: *Innovation, Efficiency Empowerment, Organisational Productivity, Employee Efficiency, Dangote Group.*

INTRODUCTION

The contemporary business environment is characterised by rapid technological development, increasing competition, changing customer expectations, and pressure on organisations to produce better results with available resources. Organisations are therefore compelled to search for innovative ways of improving the efficiency of employees and the productivity of organisational processes. One important response to this challenge is the adoption of innovative products, including digital productivity applications, automation systems, communication platforms, data-driven tools, and other technologies that support the performance of organisational tasks. Innovation, however, should not be understood simply as the introduction of new technologies into an organisation. Innovation becomes valuable when it improves the manner in which employees perform their duties and when the resulting efficiency contributes to organisational objectives. The central concern is therefore not merely whether an organisation has adopted innovative products, but whether employees are empowered to use those products effectively and whether their use translates into measurable organisational productivity.

Schumpeter's theory of innovation explains economic and organisational development through the introduction of new combinations that replace less efficient methods of production (Schumpeter, 1934). In an organisational setting, this idea suggests that new technologies and innovative processes can replace inefficient routines and create opportunities for improved performance. However, innovation may not produce the expected outcomes if employees are not adequately prepared to use new systems or if new technologies are introduced without corresponding changes in organisational processes. The Job Demands-Resources (JD-R) model provides another useful perspective. Bakker and Demerouti (2017) argue that job resources can help employees cope with job demands and enhance motivation and engagement. Innovative products can therefore serve as job resources where they reduce repetitive activities, facilitate access to information, improve communication, and enable employees to complete tasks more efficiently. The Technology Acceptance Model (TAM), similarly, emphasises perceived usefulness and ease of use as important determinants of technology acceptance (Davis, 1989).

The relevance of these issues is particularly important in large and diversified organisations such as Dangote Group of Companies, where employees operate across different functions and organisational processes. In such an environment, the introduction and effective use of innovative products may influence how quickly employees complete tasks, the quality of their outputs, collaboration, decision-making, and overall organisational productivity. Despite the potential benefits of innovation, technological adoption alone does not guarantee organisational productivity. Employees may personally adopt or experiment with innovative tools while the organisation fails to provide adequate training, support, integration, or performance measurement. This creates a potential gap between individual efficiency gains and organisational productivity outcomes.

It is this gap that provides the basis for the present study. The study therefore investigates how innovation and efficiency empowerment interact to enhance organisational productivity, using Dangote Group of Companies as the organisational context.

Statement of the Problem

Organisations invest considerable resources in innovative products and technologies with the expectation that such investments will improve employee performance and organisational productivity. The underlying assumption is that when employees have access to appropriate technologies, they should be able to complete tasks faster, reduce repetitive activities, improve quality, and contribute more effectively to organisational goals. However, the introduction of innovative products does not automatically result in corresponding improvements in organisational productivity. Employees may use innovative tools individually without the organisation integrating them into established workflows. In addition, inadequate training, resistance to change, budgetary limitations, concerns about data security, and insufficient management support can limit the effectiveness of innovation.

The problem addressed by this study is therefore the possible disconnect between innovation adoption, employee efficiency, and organisational productivity. While innovative

products may empower employees to perform individual tasks more efficiently, the organisational benefits may remain limited if the tools are not adequately integrated into organisational processes and supported by appropriate management practices. The study consequently seeks to determine whether and how efficiency empowerment and innovation contribute to organisational productivity at Dangote Group of Companies. It further examines the organisational conditions that may enhance or constrain the productivity benefits associated with innovation.

Objectives of the Study

The general objective of this study is to examine the role of efficiency empowerment and innovation in enhancing organisational productivity at Dangote Group of Companies.

The specific objectives are to:

1. examine the extent to which innovative products are adopted and utilised by employees of Dangote Group of Companies;
2. determine the effect of innovative products on employee efficiency;
3. examine the relationship between efficiency empowerment and organisational productivity;
4. assess the extent to which innovative products are integrated into organisational workflows; and
5. identify the major organisational barriers affecting the effective use of innovative products.

Research Questions

The study is guided by the following research questions:

1. To what extent are innovative products adopted and utilised by employees of Dangote Group of Companies?
2. How do innovative products affect employee efficiency?
3. How does efficiency empowerment contribute to organisational productivity?

4. To what extent are innovative products integrated into organisational workflows?
5. What major barriers affect the effective use of innovative products at Dangote Group of Companies?

Research Hypotheses

The following null hypotheses were formulated:

H01: The adoption and utilisation of innovative products have no significant relationship with employee efficiency at Dangote Group of Companies.

H02: Efficiency empowerment has no significant relationship with organisational productivity at Dangote Group of Companies.

H03: Integration of innovative products into organisational workflows has no significant relationship with organisational productivity at Dangote Group of Companies.

LITERATURE REVIEW

Conceptual Clarification

Innovation

Innovation refers to the introduction or application of new ideas, technologies, products, methods, or processes that improve the way organisational activities are performed. Schumpeter (1934) associates innovation with the introduction of new combinations that transform existing methods of production and create new sources of value. In this study, innovation is operationalised as the adoption and use of new productivity-enhancing products and technologies by employees of Dangote Group of Companies. These may include digital collaboration platforms, automation tools, communication technologies, data-based systems, and other technologies that support employees in carrying out their responsibilities. The important issue is not the mere presence of

innovative products but their usefulness, accessibility, usability, and integration into organisational activities.

Efficiency Empowerment

Efficiency empowerment refers to the extent to which employees are enabled by appropriate tools, resources, skills, and organisational support to perform their responsibilities more effectively and with less unnecessary effort. In the context of this study, efficiency empowerment is reflected in employees' ability to complete tasks faster, reduce repetitive work, improve the quality of outputs, experience manageable work demands, and remain motivated when using innovative products. Efficiency empowerment therefore represents the mechanism through which innovation can affect organisational productivity. An innovative product has limited value if employees cannot use it effectively. Conversely, when employees possess the skills and organisational support necessary to use innovation, the technology can become a productive resource.

Organisational Productivity

Organisational productivity refers to the extent to which an organisation converts its available human, technological, financial, and material resources into desired outputs efficiently and effectively. For the purpose of this study, organisational productivity is operationalised through indicators such as improved collaboration, reduced project turnaround time, better decision-making, reduced operational costs, and the ability of the organisation to measure the value derived from productivity-enhancing innovations.

Relationship among Innovation, Efficiency Empowerment and Organisational Productivity

The conceptual relationship underpinning this study can be expressed as:
Innovation Adoption → Efficiency Empowerment → Organisational Productivity
Innovation adoption provides employees with new resources and methods. Efficiency empowerment occurs when employees are able to use these resources to improve task performance. Organisational productivity represents the broader outcome when individual efficiency gains become embedded in organisational processes. The relationship is not necessarily automatic. Training, management support, workflow integration, accessibility, and performance measurement can determine

whether the benefits of innovation move from the individual employee level to the organisational level.

Empirical Review

Existing studies indicate that digital technologies can improve employee productivity, particularly where employees can use them to reduce routine activities and improve access to information. Bloom et al. (2023), for example, demonstrate that technology-supported work arrangements can influence employee productivity when appropriate organisational conditions are present. Brynjolfsson and McAfee (2014) argue that technology can substantially transform productivity, but the benefits of technological advancement depend on complementary organisational changes. Technology alone is insufficient when organisational processes remain unchanged.

The OECD (2023) similarly emphasises the importance of innovation and digital transformation for productivity. However, productivity outcomes depend on the organisational capacity to integrate innovation into existing structures and processes. From the perspective of employee performance, the JD-R framework suggests that technology can become a valuable resource when it reduces unnecessary job demands and enhances employee capability. This provides an explanation for why employees may report faster task completion and reduced repetitive work after adopting innovative products. However, the literature also reveals a limitation. Much of the discussion of technological productivity focuses either on individual technology acceptance or on broad organisational digital transformation. Less attention is given to the mechanism linking innovation adoption to employee efficiency and then to organisational productivity, particularly within large Nigerian organisations.

This study addresses this gap by examining the relationship among the three concepts within a clearly defined organisational context: Dangote Group of Companies.

Conceptual Framework

The study adopts the following conceptual framework:

Innovation

- Adoption of innovative products
- Accessibility and ease of use
- Employee experimentation

Efficiency Empowerment

- Faster task completion
- Reduction in repetitive work
- Improved quality of work
- Reduced work stress
- Increased employee motivation

Organisational Productivity

- Improved collaboration
- Reduced project turnaround time
- Better decision-making
- Reduced operational costs
- Improved productivity measurement

The framework assumes that innovation enhances organisational productivity primarily when it empowers employees to work more efficiently and when the resulting gains are integrated into organisational processes.

METHODOLOGY

Research Design

The study adopted a descriptive survey research design. The design was considered appropriate because the study sought to obtain information from employees concerning their experiences with innovative products, efficiency empowerment, and organisational productivity.

Area and Organisational Context of the Study

The study was conducted within Dangote Group of Companies, a large Nigerian business organisation with diverse operations and employees performing different organisational functions. The choice of Dangote Group provides an appropriate organisational context for examining innovation and productivity because the study focuses on how innovative products are used by employees and how such use relates to organisational efficiency and productivity.

Population of the Study

The target population comprised employees of Dangote Group of Companies who use or interact with productivity-enhancing technologies and innovative products in the performance of their duties. The population size is One Thousand Staff from Dangote Sugar Refinery located in Lagos, Nigeria.

Sample Size and Sampling Technique

A sample of 100 employees was used for the study. Respondents were selected through purposive sampling based on their relevance to the subject of the study, particularly their exposure to innovative products and technologies in the workplace. The sample size of 100 was retained from the original field survey.

Instrument for Data Collection

Data were collected using a structured questionnaire divided into sections. The questionnaire captured demographic information and respondents' perceptions of innovation adoption, efficiency empowerment, workflow integration, organisational productivity, and barriers to effective innovation use.

Items were measured on a five-point Likert scale:

- Strongly Agree (SA) = 5
- Agree (A) = 4
- Neutral (N) = 3
- Disagree (D) = 2
- Strongly Disagree (SD) = 1

Validity and Reliability

The questionnaire was designed to reflect the study objectives and research questions. The original study reported that reliability was established using Cronbach's alpha, with a coefficient above 0.70.

Method of Data Analysis

The data were analysed using frequencies, percentages, and mean scores. The criterion mean was calculated as: $(5 + 4 + 3 + 2 + 1) / 5 = 3.00$. Consequently, a mean score of 3.00 or above indicates agreement, while a mean score below 3.00 indicates disagreement.

RESULTS AND ANALYSIS

Demographic Characteristics of Respondents

A sample of 100 respondents was drawn from a population size of 1,000 Workers of Core Production & Processing Department of Dangote Sugar Refinery Plc, in Lagos State. Of these, 18% were from Raw Materials handling & Storage, 58% from Process/Refining and 24% from Packaging and Warehouse Runs respectively.

Research Question One: To What Extent Are Innovative Products Adopted and Utilised by Employees of Dangote Group of Companies?

Table 1: Employees' Adoption and Utilisation of Innovative Products

S/N	Item	SA	A	N	D	SD	Mean	Decision
1	My organisation actively adopts new productivity tools and software.	28	30	20	12	8	3.52	Accepted
2	I personally experiment with new apps, devices, or methods to improve my work.	44	30	5	11	10	3.87	Accepted
3	Innovative products in my workplace are easy to access and use.	20	31	15	14	20	3.17	Accepted
4	Training is provided when new productivity tools are introduced.	12	30	25	0	33	2.88	Not Accepted
5	The tools we use integrate well with existing workflows.	22	20	30	18	10	3.26	Accepted
	Grand Mean						3.34	Accepted

Source: Field Survey, 2026

Table 1 show that respondents generally agreed that innovative products are being adopted and utilised in the organisation, with a grand mean of 3.34. The strongest response relates to employees' personal experimentation with new applications, devices, and methods, which recorded a mean of 3.87. This suggests that employees demonstrate a willingness to explore innovative solutions in their work.

The finding also indicates that respondents generally perceive innovative products as accessible and usable, with a mean of 3.17. However, training represents a significant weakness, recording a mean of 2.88, which falls below the 3.00 criterion mean. This means that employees do not perceive training as adequately provided when new productivity tools are introduced. Workflow integration recorded a mean of 3.26, suggesting moderate agreement that innovative tools fit existing work processes. Overall, the findings suggest that innovation adoption exists within the organisation, but institutional support for adoption requires strengthening.

Research Question Two: How Do Innovative Products Affect Employee Efficiency?

Table 2: Effect of Innovative Products on Employee Efficiency

S/N	Item	SA	A	N	D	SD	Mean	Decision
1	Using innovative products helps me complete tasks faster.	40	39	0	11	10	3.88	Accepted
2	These products reduce repetitive or manual tasks in my daily work.	30	42	8	10	10	3.72	Accepted
3	I feel less stressed when using the right productivity tools.	40	25	15	15	5	3.80	Accepted
4	My quality of work has improved due to innovative products.	50	18	12	15	15	4.03	Accepted
5	I feel more motivated when my workplace adopts modern tools.	30	31	9	20	10	3.51	Accepted
	Grand Mean						3.79	Accepted

Source: Field Survey, 2026

Table 2 indicates that innovative products have a positive effect on employee efficiency, with a grand mean of 3.79. The highest mean of 4.03 was recorded for improvement in the quality of work. This suggests that respondents perceive innovation as contributing not only to speed but also to the quality of their outputs. Task completion also recorded a high mean of 3.88, while stress reduction recorded 3.80. The response frequencies further show that 79% of respondents agreed or strongly agreed that innovative products help them complete tasks faster, while 72% agreed or strongly agreed that the products reduce repetitive or manual activities.

Employee motivation recorded the lowest mean within the table at 3.51, although it remained above the criterion mean. This indicates that innovation may contribute to employee motivation, but the effect is less pronounced than its effect on task performance and work quality. Overall, the findings demonstrate that innovative products empower employees by enabling them to perform tasks more efficiently and effectively.

Research Question Three: How Does Efficiency Empowerment Contribute to Organisational Productivity?

Table 3: Efficiency Empowerment and Organisational Productivity

S/N	Item	SA	A	N	D	SD	Mean	Decision
1	Innovative products improve team collaboration in my organisation.	40	30	10	12	8	3.82	Accepted
2	They help reduce project turnaround time.	40	26	14	10	10	3.76	Accepted
3	They contribute to better decision-making with data/insights.	50	12	8	22	8	3.74	Accepted
4	Innovation in products has reduced operational costs for us.	40	13	0	33	14	3.32	Accepted
5	My organisation measures the ROI of new productivity tools.	30	5	20	30	15	3.05	Accepted
	Grand Mean						3.54	Accepted

Source: Field Survey, 2026

Table 3 shows that efficiency empowerment is associated with positive organisational productivity outcomes, with a grand mean of 3.54. Team collaboration recorded a mean of 3.82, while reduction in project turnaround time recorded 3.76. These results suggest that employees perceive innovative products as contributing to collective organisational performance rather than merely improving individual task performance. The mean of 3.74 for data-supported decision-making further indicates that innovative products can strengthen organisational decisions by improving access to information and insights. However, the mean for reduction in operational costs was comparatively lower at 3.32. Similarly, ROI measurement recorded the lowest mean of 3.05. Although this remains marginally above the criterion mean, it indicates that the organisation's ability to quantify the financial value of innovative products is relatively weak. The findings therefore suggest that innovation has positive perceived effects on organisational productivity, but stronger systems for measuring the actual organisational value of innovation are necessary.

Research Question Four: To What Extent Are Innovative Products Integrated into Organisational Workflows?

The results in Table 1 indicate that respondents moderately agreed that innovative products integrate with existing workflows, with a mean score of 3.26. This suggests that workflow integration exists but is not sufficiently strong to guarantee maximum organisational benefits. The relatively lower score for training (2.88) provides an important explanation. Where employees receive insufficient training, even useful technologies may not become fully embedded in organisational routines. Thus, the issue is not simply whether Dangote Group adopts innovative products but whether the organisation provides the structures and support required for employees to integrate those products into their daily work.

Research Question Five: What Major Barriers Affect the Effective Use of Innovative Products?

Table 4: Barriers and Organisational Attitudes towards Innovation

S/N	Item	SA	A	N	D	SD	Mean	Decision
1	Resistance to change is a major barrier to adopting new products.	34	30	20	16	10	3.92	Accepted
2	Budget constraints limit our ability to adopt innovative tools.	50	21	0	29	0	3.92	Accepted
3	Data security concerns make us hesitant to use new tools.	37	30	13	18	2	3.82	Accepted
4	I believe innovation is essential for long-term competitiveness.	50	32	0	18	0	4.14	Accepted
5	Leadership supports experimentation with new productivity solutions.	36	20	14	10	10	3.72	Accepted
	Grand Mean						3.90	Accepted

Source: Field Survey, 2026

Table 4 indicates that respondents generally recognise the importance of innovation, with a grand mean of 3.90. The strongest response was the belief that innovation is essential for long-

term competitiveness, which recorded a mean of 4.14. Despite this positive attitude, resistance to change, budgetary constraints, and data security concerns were identified as important barriers. Resistance to change and budget constraints both recorded means of 3.92, while data security concerns recorded 3.82. Leadership support recorded a mean of 3.72, suggesting that respondents generally perceive management as supportive of experimentation with new productivity solutions. However, the findings from the earlier tables indicate that leadership support needs to be accompanied by structured training and stronger workflow integration.

DISCUSSION OF FINDINGS

Innovation Adoption and Utilisation

The study found that employees of Dangote Group demonstrate a generally positive disposition towards innovative products. The grand mean of 3.34 indicates that respondents generally agreed that innovative products are adopted and utilised. Personal experimentation recorded the highest individual score in this category, suggesting that employees themselves are important drivers of innovation adoption. However, the findings also reveal an important organisational weakness: training received a mean of 2.88, below the 3.00 criterion mean. This indicates that employees' willingness to experiment is stronger than the formal training support provided by the organisation. This finding is consistent with the Technology Acceptance Model, which emphasises the importance of perceived usefulness and ease of use in technology adoption (Davis, 1989). However, the result also demonstrates the limitation of focusing exclusively on individual acceptance. Even where employees are willing to adopt innovation, sustained organisational value requires institutional support.

Innovation and Employee Efficiency

The second major finding is that innovative products positively affect employee efficiency. The grand mean of 3.79 demonstrates strong agreement among respondents. The finding that 79% of respondents reported faster task completion and 72% reported reduced repetitive work indicates that innovation can directly empower employees to perform their duties more efficiently. The improvement in work quality, which recorded the highest mean of 4.03, further indicates that productivity should not be understood simply as completing more tasks in less time. Quality

improvement is also an important dimension of efficiency. The finding supports the JD-R model because innovative products can function as job resources by reducing repetitive activities and helping employees manage their work more effectively (Bakker & Demerouti, 2017). Nevertheless, technology may not eliminate all job demands. The stress-related response was positive, but it does not suggest that innovative products eliminate workplace pressure entirely. This distinction is important because innovation should be used not merely to accelerate work but to improve the overall quality and sustainability of work.

Efficiency Empowerment and Organisational Productivity

The study found a positive perceived relationship between efficiency empowerment and organisational productivity. The grand mean of 3.54 indicates that respondents generally agreed that innovative products contribute to organisational outcomes. The strongest organisational effects were observed in team collaboration, project turnaround time, and data-supported decision-making. These findings suggest that employee-level efficiency can extend to broader organisational outcomes when employees use innovative products collectively. However, operational cost reduction and ROI measurement recorded comparatively lower means. The ROI item had a mean of only 3.05. This suggests that while employees may experience efficiency improvements, the organisation may not have equally strong systems for quantifying the financial or strategic value generated by those improvements. This finding is significant because productivity gains should ideally be connected to organisational performance indicators. Without measurement, management may find it difficult to determine which innovative products generate meaningful organisational value.

Workflow Integration and Organisational Productivity

Workflow integration recorded a mean of 3.26, indicating moderate agreement. This supports the argument that innovation produces greater organisational value when it is integrated into established organisational processes. The findings therefore reveal an important progression:

Innovation adoption → Employee efficiency → Organisational productivity

The first two stages appear relatively strong, while the movement from individual efficiency to organisational productivity is less pronounced. This explains why employees can experience faster task completion while the organisation still faces challenges in measuring overall productivity gains. The study identified resistance to change, budget constraints, and data security concerns as important barriers. These findings demonstrate that innovation is not purely a technological issue. It is also a management and organisational change issue. The strong belief that innovation is necessary for long-term competitiveness indicates that employees understand the strategic importance of innovation. Therefore, the major challenge is not necessarily a lack of appreciation of innovation but the creation of an organisational environment in which innovation can be implemented effectively.

CONCLUSION

The study examined the role of efficiency empowerment and innovation in enhancing organisational productivity at Dangote Group of Companies. The findings demonstrate that innovative products have considerable potential to empower employees by improving task completion, reducing repetitive work, improving quality, reducing work stress, and increasing motivation. However, the study also demonstrates that employee-level efficiency does not automatically translate into maximum organisational productivity. The major limitations identified include inadequate training, only moderate workflow integration, and relatively weak measurement of the organisational value of innovative products. The major contribution of the study is therefore its demonstration that innovation should be understood not merely as technological adoption but as a process of empowering employees and transforming organisational processes. The productivity value of innovation becomes stronger when employees are trained, supported, and enabled to integrate innovative products into their normal workflows.

The study concludes that Dangote Group can obtain greater organisational value from innovation by moving beyond the acquisition of innovative products towards a broader strategy that combines technological adoption, employee empowerment, workflow redesign, management support, and productivity measurement.

RECOMMENDATIONS

Based on the findings, the study recommends that:

Institutionalise Training and Development

Dangote Group should establish structured training programmes whenever new productivity-enhancing technologies are introduced. Training should not be treated as a one-time activity but should include continuous development, user support, and opportunities for employees to improve their digital skills.

Strengthen Employee Empowerment

Employees should be encouraged to experiment with appropriate innovative products and propose improvements to existing work methods. Such experimentation should occur within appropriate organisational guidelines, particularly regarding data security and operational risks.

Integrate Innovation into Workflows

Management should ensure that innovative products are deliberately integrated into existing organisational processes rather than introduced as stand-alone technologies. Where necessary, job responsibilities and workflows should be redesigned to maximise the benefits of innovation.

Measure Productivity Outcomes

Dangote Group should establish measurable Key Performance Indicators (KPIs) for evaluating productivity-enhancing technologies. These may include task completion time, error reduction, project turnaround time, operating costs, quality indicators, and return on investment.

Strengthen Change Management

Since resistance to change was identified as a major barrier, management should adopt effective change-management practices when introducing innovative products. Employees should be informed about the reasons for technological changes and the benefits expected from them.

Strengthen Data Security

The organisation should provide appropriate data protection measures and communicate clear policies for the safe use of new digital tools. Addressing employees' security concerns can encourage responsible technology adoption.

Maintain Management Support

Leadership should continue to support experimentation and innovation while ensuring that employee initiatives are aligned with organisational objectives. Management support should be accompanied by adequate resources, training, and evaluation mechanisms.

REFERENCES

- Aghion, P., Akogit, U., & Howitt, P. (2018). Innovation and growth: The Schumpeterian perspective. *Revue de l'OFCE*, 157(1), 1–21.
- Audretsch, D. B., & Belitski, M. (2021). Innovation, firm performance, and Schumpeterian entrepreneurship in the digital economy. *Journal of Technology Transfer*, 46(4), 1234–1254.
- Bakker, A. B., & Demerouti, A. (2017). Job Demands-Resources Theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, 22(3), 273–285.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bloom, N., Liang, J., Roberts, J., & Ying, Z. J. (2023). Does working from home work? Evidence from a Chinese experiment. *Quarterly Journal of Economics*, 138(1), 165–218.
- Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- European Commission. (2024). *European Innovation Scoreboard 2024*. Publications Office of the European Union.
- OECD. (2023). *OECD Digital Economy Outlook 2023*. OECD Publishing.
- OECD & Eurostat. (2018). *Oslo Manual 2018: Guidelines for collecting, reporting and using data on innovation* (4th ed.). OECD Publishing.

Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. Harvard University Press.

9oVenkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model. *Management Science*, 46(2).

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2023). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 24(1), 13–61.