8 Business Process Automation in Micro-Enterprises

Framework for Exploring the Intention and Usage

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Introduction

Digital transformation, if carried out in business organizations, increases their capabilities and changes their business organizational logics. Organizations better understand their environment and use contextual information for management support. They are aware of underlying intentions and values. They are more and more internally integrated, and they recognize and develop future potential (Korhonen, 2023). Digital transformation covers the digitization of processes, which is combined with their automation. Business Process Automation (BPA) takes advantage of the digitization of information, support of competitive advantage, and market share of the business company (Moreira et al., 2023). BPA is adopted in various business domains, that is, sales and marketing, payments and account management, human resources management, information technology, and service management. The BPA takes advantage of artificial intelligence (AI) capabilities for decision-making, so then business organizations can evolve digitally through hyper-automation. Jacobson et al. (2025) have defined hyper-automation as an approach used for identification and automation of processes, involvement of multiple technologies, tools, or platforms, including AI, machine learning (ML), event-driven software architecture, robotic process automation (RPA), business process management (BPM), intelligent business process management suites, as well as an integration of platform-as-a-service (PaaS), low-code/no-code tools, and packaged software.

Business process management (BPM) is defined by the Association of Business Process Management Professionals as a disciplined management approach to identify, design, execute, document, measure, monitor, and control both automated and non-automated business processes to achieve consistent, targeted results aligned with an organization's strategic goals (Guide, 2019). Dumas et al. (2018) argue that BPM is a body of methods, techniques, and tools to identify, discover, analyse, redesign, execute, and monitor business

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processes to optimize their performance. They add that the process is a collection of interrelated events, activities, and decision points that involve a large number of actors and objects, which collectively lead to at least one customer value outcome (Dumas et al., 2018). In comparison with BPA, RPA is understood as a technology that allows for the development of multiple computer programs (i.e., bots) that automate rules-based processes (Plattfaut et al., 2024). In processes, the robots emulate the action of human beings, for example, mouse movements, clicks, or keyboard strokes.

Business organizations, working in competitive environments, must enhance processes for efficiency, quality, and compliance while minimizing risks and costs. Process automation solutions play a vital role in achieving these goals through the variety of tools for compatibility and interoperability. Process automation is considered as a particular type of organizational and technological change leading to the appearance of the so-called hybrid work environment (Silvares et al., 2024). Ruecker (2021) argues that process automation addresses workflows that need to be tailor-made to organizational needs. In general, processes are similar across various organizations; however, the way each organization designs and implements them is unique. Process automation enables business companies to become more competitive, efficient, and cost-saving, increasing revenue and progress in their digital transformation. The process automation creates unique values, for example, building better customer experiences, getting market faster through changed and completely new processes, products, or business models, increase of business agility, visibility, quality, confidence, and working on a bigger scale (Aysolmaz et al., 2023).

Processes in organizations might also be defined by customer engagement. The organization goals after implementation of the BPM approach should be more focused on supplier orientation where information is exchanged in both directions; people management which encompasses decision-making; process view that focuses on measuring and control of operational processes; and organizational structure which involves developing skills in new services, processes, and business models (Gonçalves, 2010).

The objective of this study is to evaluate the attitude of micro-enterprises' managers towards BPA. Therefore, the authors constructed the TRIEOUS framework for statistical verification of the managers' opinions. Authors have applied PLS-SEM. The next section covers the literature survey on BPA. Further, the authors present the TRIEOUS framework and specification of latent variables and items. Final sections include results and conclusions.

Business Process Automation

BPA is based on the use of innovative information technologies to reduce the number of steps in the business process and to limit errors that may be made during the process. This leads to the effective use of human resources engaged in business activities, that is, in Industry 4.0/5.0 (Pilipczuk, 2012).

Nowadays, BPA and AI are two key technologies that are helping businesses to navigate the economic challenges, such as rising inequality, job displacement, and cybersecurity threats. In literature, there are some economic benefits described, which are important for implementation of BPA in small and medium enterprises (SMEs): (1) increased efficiency and productivity (Wewerka et al., 2020), (2) costs reduced by eliminating the need for manual labour and automating inefficient processes (Bag et al., 2020), (3) customer service improved by providing customers with faster and more personalized support (Arias-Pérez & Vélez-Jaramillo, 2021). This study defines BPA as the usage of technology to automate manual and routine tasks, minimize costs, and increase efficiency. The BPA requires reengineering of the business process and implementation of various intelligent objects, that is, smart watches, autonomous equipment, drones, autonomous vehicles, smartphones, cyber-physical systems, sensors, actuators, smart glasses, robots, assistive technologies, and 3D printing devices.

To achieve the objective, the authors aimed to identify the BPA determinants and estimate their impact on the BPA intention to use. As the first step, the literature survey on the BPA modelling was conducted. The search query used to search titles, keywords, and abstracts was "business process automation, BPA" AND "structural equation modelling, SEM". Authors have reviewed a number of repositories and found 25 papers: two publications in Scopus, 12 in ScienceDirect, one paper in PubMed, eight papers in the Association for Information Systems Electronic Library (AISeLib), and two papers in *Springer Nature* and *Sage Journals*. The search included articles and conference proceedings written in English. Only four publications included SEM models on technology acceptance (see Table 8.1). In other publications, PLS-SEM models were estimated, yet the studies were not focused strictly on BPA, but on other issues, for example, IT governance, enterprise resource planning (ERP) systems, or AI applications.

The literature review on the theoretical models, which are fundamental for structural models' variables identification, has allowed the authors to formulate several hypotheses (presented in the following section of the chapter).

Conceptual Framework

In general, the studied scientific literature includes a lot of models, theories, and frameworks designed and applied by researchers to understand and evaluate manager and user acceptance and usage of technology innovations. Chronologically, the oldest proposal was provided by Fishbein and Ajzen, who developed the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975). Later, Rogers (1983) provided the Innovation Diffusion Theory and Fishbein and Ajzen proposed the Theory of Planned Behaviour (TPB) (Ajzen, 1985). In 1989, Davis (1989) presented the Technology Acceptance Model (TAM), which was further developed as TAM2 (Venkatesh & Davis, 2000) and TAM 3 (Venkatesh & Bala, 2008). In 2003, Venkatesh et al.

Table 8.1 Searching Results on BPA and SEM

No	*Conceptual Model and its Constructs*	*Reference*
1	Authors focused on empirical study that evaluates the attitudes of Austrian companies concerning the process automation usage. Authors concluded that perceived usefulness and perceived maturity have an impact on the process automation acceptance.	Tschandl et al. (2022)
2	Author combined the TOE and TAM framework to evaluate the antecedents of technology adoption. Author concluded that the competitive pressure and owner's ICT knowledge and innovativeness had an impact of intention to adopt IT for BPA.	Wiradinata (2018)
3	Authors proposed that independent variables, that is, change of management systems and culture; management competency and support; organizational structure; business process reengineering (BPR) planning and management; and IT infrastructure had impact on dependent variables, that is, operational performance; organizational performance. Authors introduced the control variables, that is, elapsed time, years in the market, and organization size.	Bayomy et al. (2020)
4	Authors used the TOE framework to consider factors that might have an impact on organization automation solutions. Authors found that independent variables, that is, organizational, environmental, human, technological determinants, had influence on automation implementation, and next on economic, environmental, and social performance.	Ghobakhloo et al. (2023)

Source: Authors' elaboration.

(2003) published the Unified Theory of Acceptance and Usage of Technology (UTAUT) model, which was further changed into the UTAUT2 model (Venkatesh et al., 2012). In this study, the authors propose the conceptual model, which covers three latent variables that are included also in the TAM model. They are as follows: perceived usefulness (PU), perceived ease of use (PEU), and intention to use (ITU). In this study, to identify those constructs, the authors used the Revised Technology Adoption Model (RTAM) provided by Chukwuere et al. (2021). According to them, PU means confidence in information technology to increase user productivity, effectiveness, and task performance. PEU is understood as the personal judgement that technology can be used in a comfortable way. ITU includes personal willingness and desires to use a particular technology. The RTAM summarizes the development of the TAM development and its modifications.

The RTAM framework can be considered as a set of conceptual models, in which independent and dependent variables have been identified and relationships among variables have been proposed and estimated. That conceptual models support theories like the Theory of Planned Behaviour (Chukwuere et al., 2021). The theories are to present a causal process that results in observations of several variables. Sarwono (2023) argues that the theory is expected to claim that the two variables are related. The problem is that researchers are not satisfied with existing models, and they are constantly interested in formulating new theories and new models, and in their further verification. Theories such as TRA, TPB, or TAM determine the relationships between attitudes toward a technology adoption and adoption intention. Chittopaka et al. (2023) emphasized that TOE constructs are different from TAM, TPB, or UTAUT constructs. They are considered within three perspectives, that is, Technology, Organization, and Environment. The Technology perspective covers four variables: relative advantage, compatibility, trust, and security. The Organization perspective covers variables such as company IT resources, higher authority support, firm size, and monetary resources. Finally, the Environment perspective comprises the rivalry pressure, business partners pressure, and regulatory support. In this study, the authors included the Technology variables in the TAM and TRI (Technology Readiness Index) models. Ullah et al. (2023) define TRI as a four-dimensional construct covering Optimism, Innovativeness, Insecurity, and Discomfort. Parasuraman (2000) constructed the TRI including just those four dimensions. Here, Optimism means a positive view of technology and perception of benefits; Innovativeness refers to the role of a technological leader; Discomfort refers to a perceived lack of control over technology and a feeling of being stressed while using technology. Finally, Insecurity is a certain scepticism about technology and concerns its potential harmful consequences (Parasuraman, 2000). The TR demands positive evaluation of technology in terms of quality, value, and satisfaction. These motivators increase the technology usage, while inhibitors, such as discomfort and insecurity, lead to the technology rejection. According to Mahmud et al. (2023), TR represents the psychographic profile of the individuals based on the perceptions of the technology value. Although TAM is a widely used framework for evaluation of user intention to accept innovative technology, it does not use a social influence variable for technology acceptance. Hence, in the proposed framework, the TRI is included. While TRI with TAM can provide a better perspective on the technology acceptance, the need to understand the users' context for perception of innovative technology encouraged the authors to combine TRI with selected variables of TOE framework, that is, environment and organization. Thus, in this study, the authors propose the conceptual framework, TRIEOUS (Technology-Readiness-Index-Environment-Organization-Use) (see Figure 8.1).

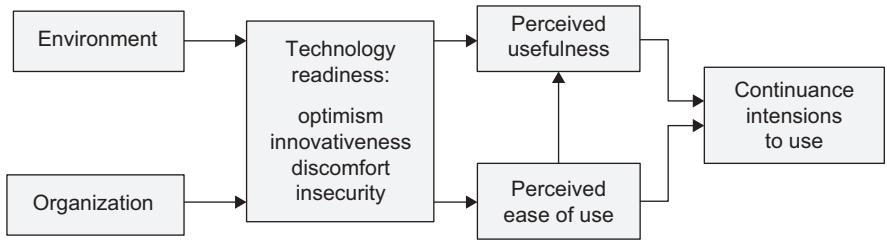


Figure 8.1 The TRIEOUS conceptual model.
Source: Authors' elaboration.

The authors have formulated the following hypotheses to be supported or rejected in the study:

H1: Environment (ENV) has impact on Optimism (OPT).
H2: Environment (ENV) has impact on Innovativeness (INN).
H3: Environment (ENV) has impact on Discomfort (DIS).
H4: Environment (ENV) has impact on Insecurity (INS).
H5: Organization (ORG) has impact on Optimism (OPT).
H6: Organization (ORG) has impact on Innovativeness (INN).
H7: Organization (ORG) has impact on Discomfort (DIS).
H8: Organization (ORG) has impact on Insecurity (INS).
H9: Optimism (ORG) has impact on Perceived Usefulness (PU).
H10: Optimism (ORG) has impact on Perceived Ease of Use (PEOU).
H11: Innovativeness (INN) has impact on Perceived Usefulness (PU).
H12: Innovativeness (INN) has impact on Perceived Ease of Use (PEOU).
H13: Discomfort (DIS) has impact on Perceived Usefulness (PU).
H14: Discomfort (DIS) has impact on Perceived Ease of Use (PEOU).
H15: Insecurity (INS) has impact on Perceived Usefulness (PU).
H16: Insecurity (INS) has impact on Perceived Ease of Use (PEOU).
H17: Perceived Ease of Use (PEOU) has impact on Perceived Use (PU).
H18: Perceived Ease of Use (PEOU) has impact on Continuance Intention to Use (CITU).
H19: Perceived Usefulness (PU) has impact on Continuance Intention to Use (CITU).

For verification of these hypotheses, the authors identified 57 observable variables, that is, items (see Table 8.2).

Research Methodology

Since the authors pursue to determine the influence between constructs, they have indicated that a survey is the appropriate research method for verification

Table 8.2 Constructs and Corresponding Measurement Items

Construct	*Item*	*Item Question*	*Reference*
ENV	ENV1	The use of technology in the firm will allow for making the right decisions and carrying out appropriate tasks.	Ferro and Martins (2019);
	ENV2	Technology enables faster decision-making and action implementation.	Parasuraman and Colby (2015)
	ENV3	Technology provides greater control over the action of the firm.	
	ENV4	Friends and colleagues influence my decisions regarding the use of technology.	
	ENV5	The application of technology improves the coordination of activities in business partner networks.	Chittopaka et al. (2023);
	ENV6	Business partners of my organization recommend the implementation of technology.	Ferro and Martins (2019);
	ENV7	Technology suppliers actively encourage me to purchase technology.	Kumar Bhardwaj et al. (2021); Prasetio et al. (2022)
	ENV8	Current legal regulations are appropriate for managing data using technology.	
	ENV9	Government institutions inspire me to trust in technologies.	
	ENV10	Government institutions support the implementation of technology.	
	ENV11	Legal frameworks are needed to address issues arising from the use of technology.	
	ENV12	Legal regulations are sufficient for the secure use of technology.	
ORG	ORG1	The top management in my firm supports the implementation of technology.	Chittopaka et al. (2023);
	ORG2	The top management ensures the necessary resources for the implementation of technology.	Dolmark et al. (2021);
	ORG3	The top management is willing to take on the risks associated with the implementation of technology.	Ferro and Martins (2019);
	ORG4	High costs of acquiring technology discourage the implementation of technology.	Kumar Bhardwaj et al. (2021);
	ORG5	Money is a critical resource for the implementation of technology.	Prasetio et al. (2022)
	ORG6	Only highly profitable firms can afford to implement technology.	

(*Continued*)

Table 8.2 (Continued)

Construct	*Item*	*Item Question*	*Reference*
	ORG7	The compliance of technology with current operations of the firm encourages the implementation of technology.	
	ORG8	Technology is not compatible with processes in my firm.	
	ORG9	Hardware and software in my organization are compliant with the requirements of technology.	
	ORG10	Technology is aligned with the work culture and values in my firm.	
	ORG11	My enterprise enables me access to knowledge and trainings to use technology.	
OPT	OPT1	Technology makes me work more efficiently.	Chittopaka et al. (2023); Li et al. (2023);
	OPT2	Technology gives me the opportunity to control my daily work.	Mahmood et al. (2023)
	OPT3	Technology inspires me and enhances my knowledge.	
INN	INN1	I'm willing to purchase technology even if I'm not well familiar with it.	Hariguna et al. (2023);
	INN2	Necessary changes due to technology are consistent with the current practices in my firm.	Hong et al. (2017);
	INN3	My organization is ready to acquire people with the right technical and managerial competencies.	Kumar Bhardwaj et al. (2021);
	INN4	I usually use technology without the assistance of others.	Lin and Hsieh (2007);
	INN5	I understand the significance of technologies for my work environment.	Mahmood et al. (2023);
	INN6	The skills required to use technology are achievable for me.	Prasetio et al. (2022);
	INN7	Using technology is an experiment; I'm learning by doing.	
	INN8	The results of using technology are widely visible and that prompts its implementation.	
DIS	DIS1	Technologies complicate the operating procedures in the organization.	Bonson Ponte et al. (2015);
	DIS2	I do not use technology for fear that something will break.	Hariguna et al. (2023);
	DIS3	I argue that technology will eliminate me from the job market.	Chittopaka et al. (2023);
	DIS4	I argue that technology threatens my privacy.	Ferro and Martins (2019); Lin and Hsieh (2007);

(*Continued*)

Table 8.2 (Continued)

Construct	*Item*	*Item Question*	*Reference*
	DIS5	I trust technology and decisions made using it.	Prasetio et al. (2022);
	DIS6	I argue that technologies are not designed for people who do not have technical education.	Silva et al. (2022)
	DIS7	Instructions on how to use technology are not written in a simple language.	
INS	INS1	Technology lowers the quality of social relationships by reducing direct contact.	Bonson Ponte et al. (2015); Chittopaka et al. (2023);
	INS2	Technology enables my organization's data to be used without the organization's consent.	Dolmark et al. (2021);
	INS3	The security of technology is inadequate to process information for my organization.	Silva et al. (2022);
	INS4	Traditional technologies are safer than the BPA.	Lin and Hsieh (2007);
	INS5	Technologies make work more difficult and can even be harmful.	
PU	PU1	The use of technology has positive effects on the environment and society.	Hariguna et al. (2023);
	PU2	The use of technology improves the functioning of my firm.	Hong et al. (2017);
	PU3	The introduction of technology reduces hardware and software costs in my organization.	Sabir et al. (2023);
	PU4	The use of technology brings joy to people and is fun.	Schukat and Heise (2021)
PEOU	PEOU1	I'm often confused about whether and how to use technology.	Dolmark et al. (2021);
	PEOU2	When I use technology, I always check the user manuals.	Mahmood et al. (2023)
	PEOU3	Working with a technical system requires significant mental effort from me.	
CITU	CITU1	I will use technology in the future.	Chittopaka et al. (2023); Hariguna et al. (2023); Hong et al. (2017); Mahmood et al. (2023); Silva et al. (2022)

Source: Authors' elaboration.

of the theoretical linkages and interaction between the observable variables (i.e., items). After the formulation of hypotheses resulted from the theoretical studies, the authors followed the research process in the following steps:

1. Prepare the online questionnaires according to the measurement items.
2. Add the introduction to the questionnaires, containing short explanation of the BPA concept for the respondents.
3. Perform pilot testing of the instrument with the selected 24 respondents.
4. Distribute the questionnaires to relevant managers of micro-enterprises in Poland.
5. Collect the data and analyse its completeness.
6. Apply the PLS-SEM for the conceptual model estimation.
7. Analyse the estimated model validity and reliability.
8. Eliminate low outer loadings items as well as variables for which the Cronbach's alpha < 0.7.
9. Evaluate the structural model.
10. Verify the proposed hypotheses.

The survey has been conducted by collecting the data from the 229 Polish micro-enterprises. In Poland, a micro-enterprise employs fewer than ten employees and whose annual turnover and/or annual balance sheet total does not exceed Euro 2 million (Polska Izba Handlu, 2008). This status entitles the business units to various forms of support. The interviewed companies have from one to three employees. The average number of employees in the sample companies was two persons. The ages of the surveyed companies was two years at minimum and 98 years at maximum. The average age of the company stay on the market was 17 years. Although that enterprises may receive economic supports, they are working in highly competitive environment, and the information communication technology (ICT) can be considered as a source of competitive advantage. The questionnaires were provided to the micro-enterprises managers. The minimum number of work years for a manager was one year, maximum – four years, and average – two years. The managers have been asked to declare the industry to which the company belongs. Hence, there were 67 commerce firms (i.e., 29% of total 229 enterprises), 79 service firms (34%), 70 production firms (30%), and 13 high-tech firms (5%). A sample of 24 respondents from micro-enterprises was randomly chosen to pre-test the survey questionnaire. This preliminary research allowed to eliminate some observable variables, which had low loadings values. Later, a total of 229 complete questionnaires were gathered in a two-month survey.

Results

The SEM model was developed using SmartPLS4 version 4.1.0.0 (Ringle et al., 2022). This software operates on the principles of PLS-SEM algorithms [44]. Standard configuration settings were applied to derive the findings. A loading value exceeding 0.70 suggests that the measured variable accounts for over half

of the variance, signifying that the indicator is reliably satisfactory (Sarstedt et al., 2022). First, we evaluate the internal consistency reliability of variables. One method for doing this when using PLS-SEM is to calculate composite reliability ρc. A higher value of ρc indicates a higher level of reliability. In exploratory research, values between 0.60 and 0.70 are considered fair, while values from 0.70 to 0.95 are considered satisfactory to good. Cronbach's alpha measures internal consistency reliability. It has similar threshold, but typically produces lower values than ρc. When estimating reflective measurement models with PLS-SEM, Cronbach's alpha has typically the lower value, while ρc has the higher value for internal consistency reliability. Additionally, the reliability coefficient ρA (i.e., rho_a) may also be calculated, which usually is between Cronbach's alpha and ρc (i.e., rho_c) (Hair et al., 2013) (Table 8.3). When

Table 8.3 Assessment of Measurement Models Using PLS-SEM

Construct	*Item*	*Outer Loadings*	*Cronbach's Alpha*	*Composite Reliability (rho_a)*	*Composite Reliability (rho_c)*	*AVE*
Organization	ORG1	0.854	0.903	0.909	0.923	0.633
	ORG2	0.798				
	ORG3	0.754				
	ORG7	0.822				
	ORG9	0.768				
	ORG10	0.828				
	ORG11	0.739				
Environment	ENV1	0.835	0.893	0.899	0.921	0.702
	ENV2	0.860				
	ENV3	0.874				
	ENV5	0.856				
	ENV6	0.758				
Optimism	OPT1	0.926	0.877	0.879	0.925	0.803
	OPT2	0.900				
	OPT3	0.862				
Discomfort	DIS1	0.861	0.741	0.772	0.884	0.792
	DIS2	0.918				
Innovativeness	INN2	0.833	0.790	0.793	0.877	0.705
	INN5	0.813				
	INN8	0.871				
Insecurity	INS2	0.714	0.802	0.824	0.868	0.623
	INS3	0.810				
	INS4	0.831				
	INS5	0.796				
Perceived ease of use	PEOU1	0.844	0.731	0.769	0.843	0.643
	PEOU2	0.799				
	PEOU3	0.760				
Continuance intention to use	CITU1	0.867	0.891	0.897	0.924	0.753
	CITU2	0.884				
	CITU3	0.894				
	CITU4	0.825				

Source: Authors' elaboration.

assessing reflective measurement models, it is crucial to examine convergent validity. This concept evaluates the extent to which a construct's indicators uniformly capture the same underlying idea, demonstrated through their collective explanation of item variance. Convergent validity is quantified by the average variance extracted (AVE), derived from the average of the squared loadings of all indicators associated with a construct (Hair et al., 2022). In the first run, the model was calculated with the PLS algorithm. The number of iterations was set to 1,000, and the stop criterion to 10^-X with the selected seven. Then the model was calculated with the Bootstrap algorithm, in which the number of samples was set to 5,000 for the full version with bias-corrected and accelerated in two-tailed distribution. The significant level was equal to 0.05. At first, the authors estimated the preliminary model covering 57 items and nine constructs. Next, they removed those items for which the outer loadings values were below the threshold, that is, 0.7. Beyond that, the latent variable PU was removed from the final conceptual model, because of the Cronbach' alpha value below 0.7. The PLS-SEM estimation of final results is included in Table 8.3. The final estimated model has covered eight constructs and 31 items (see Figure 8.2). The items are explained in Table 8.2. All AVE values exceed 0.50, affirming the convergent validity of the measures. The Cronbach's alpha values for variables range between 0.731 and 0.903. which is acceptable for all variables. The Composite reliability statistics rho_a and rho_c are over the thresholds 0.7, hence they are acceptable (see Table 8.3). The average variance extracted (AVE) and composite reliability (CR) values are to be higher or close to 0.50 and 0.70, respectively, which confirms convergent validity. According to Hair et al. (2022), CR>0.7 and <0.9 are satisfactory measures of internal consistency; however, CR>0.6 indicates lack of internal consistency, and CR>0.95 is not desirable. A higher value of Cronbach's alpha is a better value of reliability.

The final estimated model covered eight constructs and was applied for the verification of the following hypotheses:

H1: Environment (ENV) has impact on Discomfort (DIS).
H2: Environment (ENV) has impact on Innovativeness (INN).
H3: Environment (ENV) has impact on Insecurity (INS).
H4: Environment (ENV) has impact on Optimism (OPT).
H5: Organization (ORG) has impact on Discomfort (DIS).
H6: Organization (ORG) has impact on Innovativeness (INN).
H7: Organization (ORG) has impact on Insecurity (INS).
H8: Organization (ORG) has impact on Optimism (OPT).
H9: Discomfort (DIS) has impact on Perceived Ease of Use (PEOU).
H10: Innovativeness (INN) has impact on Perceived Ease of Use (PEOU).
H11: Insecurity (INS) has impact on Perceived Ease of Use (PEOU).
H12: Optimism (OPT) has impact on Perceived Ease of Use (PEOU).
H13: Perceived Ease of Use (PEOU) has impact on Continuance Intension to Use (CITU).

Table 8.4 Fornell-Larcker Criterion Values

	CITU	*DIS*	*ENV*	*INN*	*INS*	*OPT*	*ORG*	*PEOU*
Continuance intention to use (CITU)	0.868							
Discomfort (DIS)	–0.616	0.890						
Environment (ENV)	0.745	–0.606	0.836					
Innovativeness (INN)	0.748	–0.563	0.790	0.839				
Insecurity (INS)	–0.547	0.552	–0.447	–0.453	0.739			
Optimism (OPT)	0.742	–0.568	0.778	0.766	–0.433	0.896		
Organization (ORG)	0.748	–0.582	0.760	0.796	–0.536	0.750	0.796	
Perceived ease of use (PEOU)	–0.490	0.561	–0.493	–0.443	0.461	–0.490	–0.501	0.802

Source: Authors' elaboration.

In this study, the verification of Construct Reliability and Validity was done. Table 4 covers values for Fornell-Larcker Criterion to present that all the constructs differ significantly. The authors have received the results for path coefficients listed in Table 8.5. Eleven tested hypotheses are significant at 5% error level. The values of f^2 for hypotheses H3 and H10 are about zero, and p-values are bigger than 0.05, hence these two hypotheses have been rejected. The values of f^2 for hypotheses H1, H5, H7, H9, H11, and H9 are not above the 0.15 criterion, thus they are reasonably low. Paths for hypotheses H2, H4, H6, H8, and H13 show the highest significance.

Discussion and Conclusions

In this chapter, the authors focused on the business process automation (BPA) involvement to use at micro-enterprises in Poland. That issue is located in the business process management (BPM) domain. The BPM paradigm evolved from previous concepts designed to improve performance in organizations, for example, Total Quality Management (Hommes, 2004). An important factor of implementing BPM is context awareness in different organizations, for example, start-ups or multinational corporations (vom Brocke et al., 2021). Mostly literature studies were focused on comparing different business process modelling techniques and BPM approaches (Lizano-Mora et al., 2021). Newer studies are also focused on the impact of new technologies on organizational performance and processes, such as cloud computing (Duipmans et al., 2014) and new ways of processes management related with the cloud

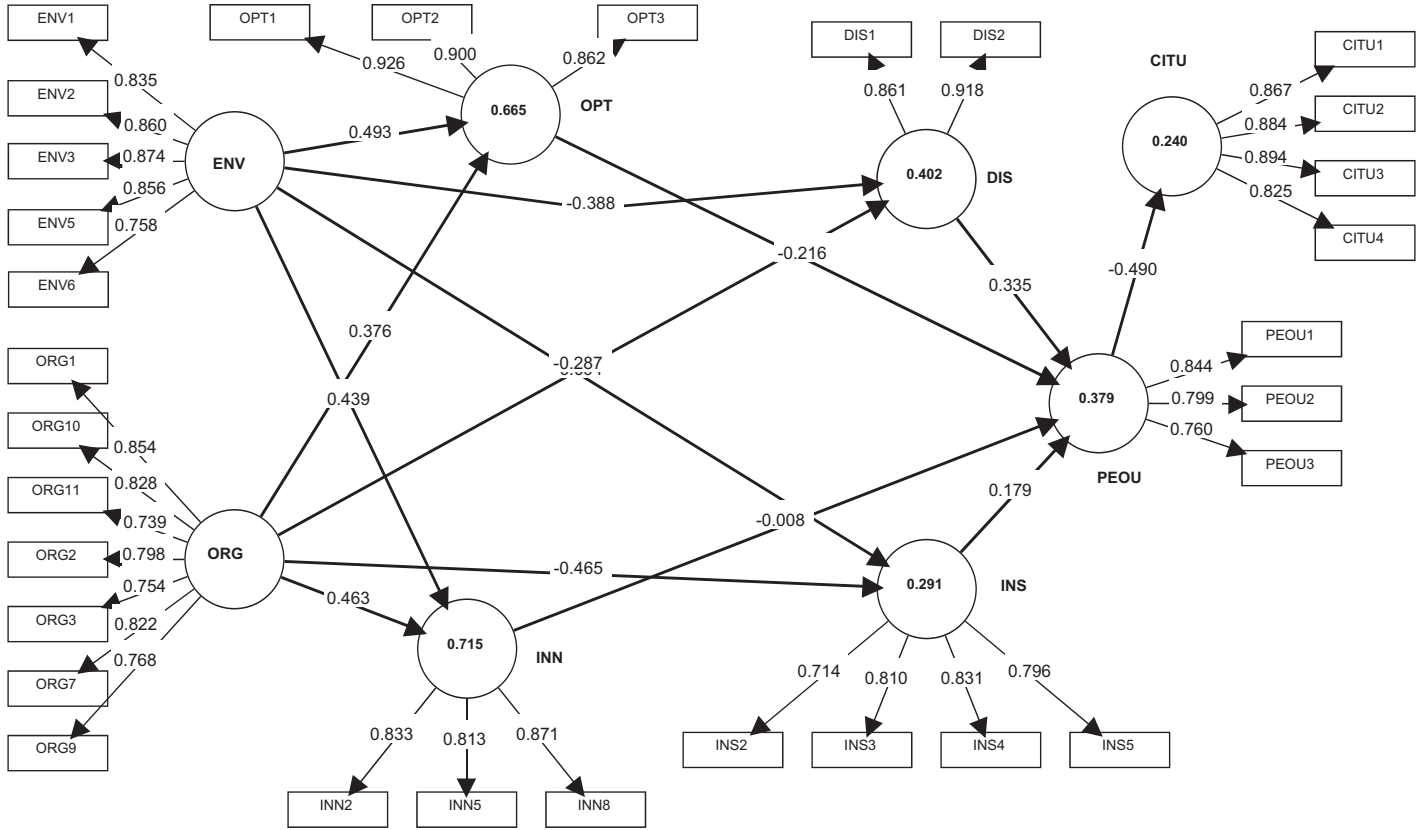


Figure 8.2 The final estimated PLS-SEM model.

Source: Authors' elaboration.

Table 8.5 Final Model Results of the Significance Tests and the Bootstrapping Path Coefficients

Hypothesis	*Path*	*Path Coefficient*	*T-Statistics*	*Effect Size f^2*	*Significant ($p < 0.05$)?*
H1	ENV-> DIS	0.335	4.521	0.107	0.000
H2	ENV-> INN	–0.388	4.769	0.286	0.000
H3	ENV-> INS	0.439	7.818	**0.005**	**0.323**
H4	ENV-> OPT	–0.094	0.988	0.307	0.000
H5	ORG-> DIS	0.493	6.616	0.058	0.001
H6	ORG -> INN	–0.008	0.075	0.318	0.000
H7	ORG-> INS	0.179	2.241	0.129	0.000
H8	ORG-> OPT	–0.216	2.193	0.179	0.000
H9	DIS-> PEOU	–0.287	3.278	0.098	0.000
H10	INN -> PEOU	0.463	8.592	**0.000**	**0.940**
H11	INS -> PEOU	–0.465	5.107	0.034	0.025
H12	OPT-> PEOU	0.376	5.126	0.029	0.028
H13	PEOU -> CITU	–0.490	8.617	0.316	0.000

Source: Authors' elaboration.

(Hedhli & Mezni, 2018), blockchain (Hastig & Sodhi, 2020), and agility and digital transformation phenomena (Baiyere et al., 2020).

Through literature survey, the authors have identified some publications that consider BPA in small and medium enterprises (Bayomy et al., 2020; Ghobakhloo et al., 2023; Tschandl et al., 2022; Wiradinata, 2018). Beyond that, the authors have noticed some publications on the application of PLS-SEM for verification of technology acceptance and use in SMEs (Harini et al., 2023; Turkyilmaz et al., 2010). However, the authors have identified a research gap concerning the BPA in micro-enterprises. The scope of activities as well as the investment scale are quite different in SMEs in comparison with micro-enterprises that include just up to ten employees. The business processes in the micro-enterprises are simpler than in SMEs, and mobile communication is critical for business success. That characteristics may have an impact on micro-entrepreneurs' attitude towards new technologies. Successfully, the micro-enterprises' managers accepted an invitation to answer the questionnaire. Their answers were recorded in a scale of 1–7. The average value was 4,745 (i.e., between neutral and rather accept the BPA), standard deviation was 0.524.

This chapter covers the application of PLS-SEM technique, which is approved as a comprehensive statistical approach to testing hypotheses about relationships between observed and latent variables. This approach combines the factor analysis and multiple regression to analyse the structural properties of theoretical models. For this research, the authors analysed various frameworks on technology acceptance. Through the literature analysis and discussions, the authors decided to provide the BPA acceptance framework, which combines variables of the TOE, TRI, and TAM models. Similar

research approaches have been found in some publications (Bhatiasevi & Naglis, 2020; Dewi et al., 2018; Kumar Bhardwaj et al., 2021; Okorie Awa et al., 2015; Ullah et al., 2023).

This study allowed to verify 13 hypotheses. Two hypotheses, concerning impact of the environment on insecurity, and the innovativeness on the Perceived Ease of Use (PEOU) were rejected. Eventually, the case study on micro-enterprises managers' attitude towards the BPA presents that the Environment latent variable has a weak positive impact on the Discomfort and a weak negative impact on the Innovativeness and the Optimism. The Organization latent variable has a weak positive impact on the Discomfort and the Insecurity, as well as a weak negative impact on the Innovativeness and the Optimism. Beyond that the Discomfort latent variable has a weak negative impact on the PEOU, and the Optimism latent variable has also a weak negative impact on the PEOU, but the Insecurity latent variable has a weak negative impact on the PEOU. Finally, the PEOU latent variable has a medium negative impact on the Continuance Intention to Use (CITU). The BPA technology is not yet quite well recognized, hence the micro-enterprises' managers prefer to be sceptical and careful. Other publications contain similar results. Therefore, it should be emphasized that the SEM modelling can be recommended as a prerequisite of formulating regulations for micro-enterprises. Mahmood et al. [32] have noted a weak impact of the TRI latent variables on the TAM latent variables, that is, PU and the PEOU. Also, Ullah et al. (2023), Nassr et al. (2021), and Kumar Bhardwaj et al. (2021) formulated conclusions on the weak impact. However, following Tschandl et al. (2022), the authors recommend to consider these identified factors while implementing BPA technologies in micro-enterprises. The proposed conceptual model was de facto a compilation of three other models, that is, TOE, TRI, and TAM. The other authors focused on modifications, simplification, or just a precise application of selected, known from the literature studies, conceptual models. The specification of latent and observable variables has an impact on final observations on the BPA intentions and usage. However, at this moment, the micro-companies are still at the beginning of the digital transformation process. The technologies, that is, process automation, and genAI may soon radically change forms of activities there.

Disclosure of Interests

The authors have no competing interests to declare that are relevant to the content of this chapter.

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