

The Role Of Business Process Management On Organizational Performance And The Function Of Business Automation

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Abstract:

Because of the intricacy and fracture of training in the development business, Computerization and digitalization, as different advancements, isn't not difficult to execute.

The point of this exploration is to figure out the Business cycle The board consequences for Computerization and Digitalization and the Association execution in development organizations.

Computerization influences business the executives and requires new methodologies, creative items, better approaches for speaking with partners and new channels.

This peculiarity is unavoidable and organizations should manage it in an all-encompassing and coordinated manner

One thorough and interconnected way to deal with the investigation of business issues is addressed by the technique for business process the board, which is a fitting component when digitization and Mechanization should be joined with strategic policies that increment scholarly capital (IC), so this study looks at Computerization and digitization with regards to business processes.

Focal point for the determination of little and medium-sized ventures in development organizations, which structure an unstudied substance as far as digitization, process control and IC.

The exploration plans to recognize the connection among advanced and mechanization instruments and business processes and their effect on execution, prizes and IC.

Design/Methodology/Approach

An example of Egyptian development organizations was concentrated on in the computerization and digitization study.

Information was broke down utilizing two kinds of tests: (1) binomial tests for straight out questions and (2) zeta test was utilized for quantitative factors. What's more, a fractional least squares (PLS)- SEM model was applied.

Results - *The outcomes show that a few computerization and advanced devices are more taken on in the dissected example, as well as specific mechanization and advanced apparatuses are more disposed to help specific business processes.*

Besides, there are execution benefits, yet in addition benefits as better correspondence and quicker choices that help the dynamic course of administrators, likewise taking into account that the union of business processes is one method for overseeing IC.in development organizations.

Practical implications *it is feasible to make chiefs and proprietors of development organizations deliberately pick the right mechanization and computerized venture, without ignoring the preparation program, to do the computerized change of the organization, offering a guide and remembering the worth. Added creating to safeguard their IC..*

Keywords: *Automation Digitization, Digital tool, Business process management, Small and medium-sized enterprises, Profit, Intellectual capital. Organization performance, Construction.*

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I. Introduction:

-The development business is satisfying its standing for squander (Zhang et al., 2022), fossil fuel byproducts (Yang et al., 2022), cost overwhelms (Sepasgozar et al., 2022), and delays (Sanni-Anibire et al., 2020).

These are only a couple of the variables that might put the business at the lower part of the rundown when contrasted with different areas concerning proficiency, viability, and development (Ernstsen et al., 2021). Nambisan et al. (2019) characterize frameworks as those that have activities, methodology, and procedures.

Aside from the specialized demeanor, mechanization and digitization is perceived as a plan of action instead of a device (Turk, 2021).

Digitalization has been straightforwardly ensnared in the development business writing as the underlying driver of endless advantages like execution improvement (Lee and Lee, 2021), cost reserve funds (Nikmehr et al., 2021) and far reaching information examination (Huang et al., 2021).

Such innovations at first give early adopters substantial highlights to work on their business and functional cycles (Sopiyah et al., 2020).

The rundown of arising advances with regards to development in the computerized age incorporates building data displaying (BIM) (Huang et al., 2021), major information (McNamara and Sepasgozar, 2021) and expanded reality (Rohani et al., 2014), which are all arrangements that change customary cycles for a more digitized, esteem accomplishing demeanor.

The business cycle the board (BPM) approach is an ideal strategy for managing the digitalization peculiarity comprehensively, on the grounds that it regularly includes capacities in process direction and plan inside an association (Wu et al., 2022; Kerpedzhiev et al., 2020), which additionally implies scholarly capital (IC), like worker capabilities or unimportant associations with partners. The IC is a significant viewpoint in an organization's exhibition, however it is challenging to make due (Bamel et al., 2022; Bellucci et al., 2021; Huang et al., 2021; Kujansivu and Lonnqvist, 2008).

Nambisan et al. (2019) define systems as "operations, processes, and strategies."

Without a doubt, digitalization brings new difficulties to any company, such as socio-technical innovation, which may be addressed using BPM.

It would be extremely urgent to make proposals concerning methodology execution through the organization's techniques to operationalize digitalization.

To address this significant point, our examination lines up with Legner et al. (2017), who advocate for interdisciplinary investigations to widen reasonable digitalization viewpoints, suggesting business process the board (BPM) as a reasonable device for coordinating digitalization into organizations' administrative practices, with an emphasis on a basic element like IC.

BPM can assist firms in getting started on the digitization journey by allowing them to build a complete managerial framework, hence improving the IC (Svarc et al., 2021).

Furthermore, while large construction corporations have been active for many years, small and medium-sized construction enterprises (SMEs) must get back on track, particularly to remain competitive (Chatterjee et al., 2022; Imgrund et al., 2018).

In this regard, academics (Eller et al., 2020; Garzoni et al., 2020) emphasize the need for additional research, noting that the phenomena of SMEs digitization are yet underexplored in certain geographical areas. Furthermore, there is a call:

- 1) To develop a digitalization measurement scale that takes into account the various SMEs' activities.
- 2) To represent the performance outcomes of various digitalization assumptions, and 3) to identify whether digital technologies significantly improve financial performance (Eller et al., 2020).

Indeed, particularly in SMEs, research has not taken into account the challenges posed by digitalization, as well as the relationship with IC (Svarc et al., 2021), necessitating new research into the relationship between digital transformation and the management of employees' capabilities, processes, and company resources (Dabi'c et al., 2021).

Despite the significance of the relationship between digitization and performance (Mantymaki et al., 2022; Ruparel et al., 2020; Singh and Hess, 2017),

It is currently understudied and uncertain. According to (Pirogova et al. (2020), technology has a general favorable impact on the performance and value of businesses.

Caputo et al. (2022) recognize the growing importance of digital platforms in so Egyptian Economic dynamics with reference .to. SMEs: their study outlines how digital platforms can influence the economic performances of Egyptian small and medium enterprises (SMEs) active in foreign countries. There is a scarcity of studies in the SMEs context: (Bansal et al. (2022), Chierici et al. (2021), comment that IC administration unanticipatedly affects a wide assortment of monetary execution estimates in development co, The idea of "preparation" has all the earmarks of being critical while thinking about digitalization and its connection with IC. To be sure, Svarc et al. (2021) underline the valuable connection among IC and computerized change readiness. In light of the recently recognized holes in the writing, this study adds to a more profound comprehension of digitalization in the Egyptian climate, which is essentially contained development firms; thus, we have two essential targets:

- 1) The first is to connect digital technologies (DTs) to BPM in of construction firms,
- 2) The second is to regard the IC (Dabi'c et al., 2021) as a vital critical factor for value creation.

These two characteristics also illustrate the uniqueness of the research.

Automation (Bademosi and Issa, 2021), machine learning (Huang et al., 2021), blockchain (Lu et al., 2021), digital twin (Lee and Lee, 2021), and robotics (Manzoor et al., 2021).

However, there are still barriers to greater uptake and use (Zulu and Khosrowshahi, 2021), notably among small and medium-sized businesses (Eller et al., 2020).

These difficulties have been described as both technological and non-technological (Almeida et al., 2020).

As a result, the purpose of this article is to emphasize the reasons for the limited digital penetration in construction organizations, despite the accompanying benefits. This study's fundamental assumption is that obstacles transcend beyond technicality to encompass non-technical internal issues.

The digitalization phenomenon is progressing, and there is a market demand for more and new innovative products, alternative services, new communication channels, and new ways to communicate.

Therefore, Organizations should execute procedures that empower plan of action advancement, as well as rebuilding and smoothing out organization processes (Hesse et al., 2014; Bharadwaj et al., 2013). To be sure, to manage digitalization, organizations should now take an all-encompassing, far reaching, and coordinated approach that permits them to incorporate data innovation (IT). Accordingly, an observational request is respected expected to reveal insight into the connection between development endeavors' hierarchical exhibition and their Robotization (Na et al., 2022). This paper basically inquires,

The research is structured as follows:

- Focuses on construction firms small and medium size enterprises, considers the theoretical background of the Automation phenomenon and connects it to his Business Process Companies, the overall picture of enterprises and organizational performance
- Describes the method and sample.
- Furthermore, the main results are presented.
- Finally, provides a conclusion highlighting the theoretical and practical
- Contributions and future researches.

II. Literature Review:

Despite its emergence, digitalization in construction enterprises is still in its early stages.

The reasons for this are possibly related to the organizational influence undermining digitization (Ernstsen et al., 2021).

This poor adoption rate has little to do with automation and digitalization in the construction business, which has a history of opposing change and rejecting advances (Muoz-La Rivera et al., 2021).

The benefits of automation and digitization are recognized with the adoption of modern digital innovations such as automation (Bademosi and Issa, 2021), machine learning (Huang et al., 2021), block chain (Lu et al., 2021), digital twin technology (Lee.) and Lee, 2021) and robotics (Manzoor et al., 2021).

However, there are still challenges affecting wider adoption (Zulu and Khosrowshahi, 2021), especially among small and medium-sized enterprises (Eller et al., 2020).

To overcome this, elements that influence wider digital adoption must be captured in both theory and practice.

Many factors contribute to construction enterprises' low digitization rates. However, a major number of these are thought to reside inside rather than outside (Zulu and Khosrowshahi, 2021).

We have a poor understanding of the relationship between organizational influence and digitization. And discreet in literature, which underpins the necessity of this study.

Despite that digitalization in construction may have been accelerated due to the pandemic (Mazurchenko and Zelenka, 2022), the adoption rates are yet far from satisfactory.

Literature implies a linkage between the low digitalization rate in construction firms and organizations' influence; however, research focusing on aggregating this knowledge is lagging.

Organizational effects such as the requirement to up skill and digitally train workers (Mazurchenko et al., 2020), drive financial incentives (Ninan et al., 2022), and prioritize feedback (Shojaei et al., 2022) have been noted. However, the organizational influence on innovation adoption remains a complicated interaction, with inadequate understanding throughout the construction environment (Lin and Yi, 2022).

These challenges are said to be both technological and non-technological (Almeida et al., 2020).

A key assumption that forms the starting point of this research is that the challenges extend beyond the technical aspects to the non-technical internal interactions of organizations, which are equally important in defining effective change..

The automation and digitization of organizations in the construction sector has been implemented,.

The reasons behind this are undoubtedly important from the point of view of the organizational impact of digitization (Ernstsen et al., 2021).

This phenomenon of low adoption is not particularly related to the digitization of the construction industry, because the industry has a history of resistance to change and resistance to innovation (Muñoz-La Rivera et al., 2021).

Knowledge of BPM:

BPM originated in the early 1990s, when organizations realized that the value of IT expenditures could be obtained through complementary changes in business processes and work habits, allowing for increases in quality, product offering, and customer satisfaction. And Customer service (Van der Aalst et al., 2016).

Large-scale information systems, such as ERP, appeared to be sufficient for top-down coordination of cross-functional business operations (Hammer & Stanton, 1999).

The origins of BPM research can be traced back to subsequent organizational reengineering, which drew lessons from examples when new business processes were forced on organizations (Melao & Pidd, 2000).

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Business process reengineering is defined by Davenport and Short (1990, p. 1) as the "analysis and design of work flows and processes within an organization." While this concept can embrace a wide range of organizational changes, Hammer and Champy (1993, p. 11), the early proponents of this method,

It has been described as a "fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed." The extreme transformation mandated by reengineering was quickly contrasted with incremental methods to process improvement by establishing a continuum of BPM projects (Edwards & Peppard, 1994).

BPM has recently been linked to organizational restructuring in the context of business process outsourcing decisions (Tanriverdi et al., 2007). Numerous hurdles and success factors for business process change have been identified throughout the years (Newman & Zhao, 2008; Sarker et al., 2006). Broadbent et al., 1999; Janz et al., 1997) explored organizational readiness and politics, IT infrastructure, and change management.

BPM research has steadily shifted away from strategy change considerations and toward the refining of BPM modeling approaches and workflow optimization tools (for recent overview, see Recker, 2014; Klun & Trkman, 2018).

ERP system adoption has also changed how businesses interpret their business processes (Bala & Venkatesh, 2007).

Researchers are emphasizing on the character of processes and the amount to which they may be altered when circumstances change as ready-made process repositories increase, for example in ERP systems (de Albuquerque & Christ, 2015; Crick & Chew, 2017).

There is a need to capture the elements that influence wider automation and digital adoption in theory and practice.

Many factors contribute to the low digitization rate of construction industry organizations.

However, a significant proportion of these are said to originate from within the organization rather than from outside (Zulua and Khosrowshahi, 2021).

Our knowledge of the relationship between organizational influence and automation and digitization is limited and subtle in the literature, which supports the necessity of this research..

These are organizational structure, organizational culture, leadership, and internal processes.

The links between the four constructs may aid in describing the key impacts of organizational influence on digital transformation in construction organizations.

III. The Three Business Process Management Logics:

The logic of the process:

Business processes are viewed as sequences of operations that can be properly understood, modelled, and remodeled as needed (e.g., Van Der Aalst, 2013; Recker et al., 2009).

The analysis and modeling of current organizational processes in BPM.

The drawing of new processes to replace them has garnered attention throughout the history of BPM (Bandara et al., 2005).

Early research focused on strategies for discovering processes (Datta, 1998) and tools for making modeling easier (Dijkman et al., 2011; Lee et al., 2008).

According to this reasoning, as much of the work done in the organization as feasible should be represented as explicit knowledge so that work flow diagrams and flowcharts can be generated and inefficient paths can be discovered (Recker, 2014; Melao & Pidd, 2000). Davenport and Short (1990), for example, advocate that, if not all, at least some essential processes be rebuilt and that existing processes be accurately understood and measured. Should some of the work be tacit knowledge, which is not codified but existing as

part of the organizational routine, that component of the job should be rigorously modeled so that it, too, can be analyzed as part of the BPM endeavor.

It is often not acceptable in BPM that a work activity cannot or should not be modeled; every critical activity is assumed to be known and model able to the level at which meaningful performance benefits can be realized (Recker, 2014). As a result, modeling is the dominating viewpoint in process logic.

Infrastructure logic:

According to this viewpoint, the required infrastructure for effective BPM is typically reengineered to align with the objectives of the modeled business process it facilitates (Takeoka-Chatfield & Bjorn-Andersen, 1997; Hammer, 1990).

Traditional BPM as advocated by Michael Hammer (1990), also known as business process reengineering (BPR), emphasizes that processes should be automated using technology to achieve defined business goals (Sidorova et al., 2014).

It should also be changed to reduce redundant work and information flows and replace them with flows that represent a new understanding of work in that business process (Dumas et al., 2005).

The increased and more comprehensive use of technology creates new possibilities for modeled work; thus, BPR efforts are expected to result in larger and more integrated systems that span departments and business units and connect the organization to other stakeholders (Karimi et al., 2007; Takeoka-Chatfield & Bjorn-Andersen, 1997).

Such expansive systems encourage greater alignment with business process goals by allowing for freer information interchange among units that were previously more isolated and silo-like (Broadbent et al., 1999).

In general, information processing is more efficient when data is gathered from multiple parts of the organization in accordance with the business process vision, minimizing redundancy and boosting efficiency.

This, of course, assumes that business process capabilities can be achieved by leveraging information processing and that relevant infrastructures are in place to support the flow and handling of information in the new work structure.

As a result, the dominating idea in this reasoning is infrastructure alignment to be in sync with the business process objectives.

Agential logic:

The main assumption in this logic is that participants in a business process context are procedural and are thus expected to follow the processes as documented.

This is a business process agency assumption derived from the early days of industrialization and factory automation:

Work steps are consecutively followed (e.g., Datta, 1998), similar to the method on an assembly line in a factory.

This idea may have stemmed from the industries that BPM projects were frequently intended to enhance - those involving a large quantity of routinized labor with clearly defined dependencies between the processes, as if scheduled on a Gantt diagram.

Due to the relatively simple relationships across the business processes, having this assumption makes it easy for project members to construct understandable models (Vom Brocke & Rosemann, 2014).

DominantBPM logic	Underlying assumptions	Some practices	Some values/ drivers	Some References
Processlogic: Modeling	Processes in a BPM should be rigorously modeled; it is not acceptable that an activity cannotbe/is not modeled.	Creation of BPM models and careful mapping of actual business process flow plus attention to the sequence of activities and associated actors within a business process.	Stability Efficiency Quality	<ul style="list-style-type: none"> • Vom Brocke et al., 2014. • Van Der Aalst, 2013. • Dijkman et al., 2011. • Recker et al., 2009. • Melao & Pidd, 2000. • Davenport & Short,1990. • Recker, 2014.
Infrastructurelogic: Infrastructureel alignment	Infrastructures should be reengineered to align with the business process goals.	Close coupling of process needs with infrastructural design and influencing information infrastructure choices based on mapping of business process in tandem with information flow requirements.		<ul style="list-style-type: none"> • Sidorova et al., 2014. • Dumas et al., 2005. • Hammer, 1990. • Broadbent et al.,1999.

				<ul style="list-style-type: none"> • Karimi et al., 2007.
Agentiallogic: <i>Procedural</i>	Actors in a BPMscenario are expected to be procedural and follow the modelled process.	Provision of detailed guidelines and instructions for executingbusiness process rules.		<ul style="list-style-type: none"> • Vom Brocke & Rosemann, 2014. • Hung, 2006. • Datta, 1998.

- Table-. Logics of Business Process Management in a Regular Business Context

Visualizing Digital Transformation:

It has previously been claimed that the present wave of digital innovations would result in the transformation and disruption of conventional corporate strategies and models (Loebbecke & Picot, 2017; Nambisan et al., 2017).

In the context of digital transformation, innovation is expected to take the shape of the availability of new digital products and services, with improvisation occurring at both the managerial and operational levels.

- An innovating firm may embrace operational and product qualities similar to a born-digital company (Bossert, 2016) by enabling new product/service offerings (Nambisan et al., 2017). Changes in this nature can also lead to a corporation entering markets with new competitors from other (digital/IT-related) industries.

In general, digital transformation refers to a company's shift toward producing and providing digital value propositions while also employing digital technologies in operational processes (Legner et al., 2017; Vial, 2019; Weill & Woerner, 2018).

Because our research focuses on digital transformation at the organizational level, we can draw on Besson and Rowe's (2012) distinction between deep structure change and convergent change in transformations. Deep structure embodies the fundamental choices/rationale underpinning the way an organization has been constructed, which shapes the organization's real-world manifestation (Gersick, 1991; Silva & Hirscheim, 2007).

- It is a reflection of the fundamental tenets that underpin the organization's reality (Burton-Jones et al., 2017; Wand & Weber, 1995). Silva and Hirscheim (2007) utilize the metaphor of a home to explain deep structures, where the foundation of the house relates to an organization's deep structure, which cannot be modified without a fundamental alteration of the organization.

Deep structure, according to this viewpoint, is distinct from convergent change, in which an organization "improves its efficiency and effectiveness without rethinking its business model or key processes" (Besson & Rowe, 2012).

- In this regard, there is still room for research that will refine our grasp of these notions. In our opinion, digital transformation results in a qualitatively different organization, where 'digital' is an intrinsic part of a company's value proposition, offerings, and identity, which explains the need to reconfigure the organizational mind-set to deal with the concerns of generatively and deep structure change (Legner et al., 2017; Vial, 2019; Wessel et al., 2019).

This concurrent focus on generatively and profound structural change that characterizes digital transformation is analogous to "changing the wheel on a moving vehicle."

Digital Transformation Tensions in BPM

We build on the three BPM logics to deepen our view of the BPM difficulties in a digital transformation setting.

The insights offered in this part are based on both our empirical observations and the burgeoning research on the subject.

Unlike most interpretive studies, we give these insights before, rather than after, the empirical part. Such an approach allows us to present and clarify the study's conceptual leaning and perspective.

In keeping with previous work on theory building (see Berente & Yoo, 2012), we use this structure to introduce the reader to our theoretical premises, as well as to highlight the identified gaps and the contribution aim of our research

It also makes it simpler for management to "buy in" to BPR's main premise - that redesigning will result in efficiency benefits (Hung, 2006) - because the new process model will necessarily be a more or less procedural depiction of the work done.

These procedural models can be submitted to efficiency calculations and thus "proven" to outperform traditional process models.

Digitalization phenomenon and intellectual capital:

The rapid adoption of DTs is spurring digitalization (Daugherty, 2020; Berger et al., 2018) with consequent considerable changes in societal behaviors and in organizational processes (Beverungen et al., 2020).

This phenomenon cannot be denied: it is a pervasive global trend that influences and reshapes value networks over all sectors.

Furthermore, the highly dynamic business environment forces organizations to rise up against changing business directives (Han and Trimi, 2022; Ashfaq et al., 2022; Denner et al., 2018; Matt et al., 2015), Thus providing answers to the changing customer demands

Actually, Automation is a complex socioeconomic phenomenon with significant implications in terms of value addition (Baier et al., 2022), and it is important to note that Automation is more than digitization, which is the process of converting information into a digital format (Legner et al., 2017).

Because DTs are incorporated into products and processes, digitalization is a development of it (Rajan and Dhir, 2020; Kerpedzhiev et al., 2020; Huber et al., 2019; Beverungen et al., 2019).

In general, DT is a broad word that refers to IT adoption in the context of digitalization (Denner et al., 2018).

Benbya et al. (2020) define DTs in terms of symbol-based computation; as a result, they classify technology as rooted, recognized, connected, editable, and communicable. Given the growth of technology, we agree with Baskerville et al. (2020), who recommended redefining information system (IS).

The concept of IS as physical reality has shown to be outmoded, making way for a more current perspective dominated by DTs.

DTs comprise both established technologies, such as social, cloud, mobile, and analytic (Fitzgerald et al., 2014), as well as emerging ones, such as augmented reality (AR) and artificial intelligence. for example (Daugherty, 2020; Gartner, 2020).

While there is a general agreement regarding the potential that DTs can bring, there is also a lot of uncertainty about how firms might capitalize on DTs to gain value (Davenport and Westerman, 2018).

The truth is that enterprises do not fully comprehend how to leverage DTs (Denner et al., 2018). As previously stated in the literature (Huber et al., 2019; Beverungen et al., 2019), DTs can lead to the transformation of items into smart things. Furthermore, DTs enable firms to improve business processes through innovation, ultimately leading to automation (Kerpedzhiev et al., 2020).

Digging deeper, DT can be categorized into IT and Operational Technology (OT).

The main difference is that IT tools process data, while OT manages physical space.

More specifically, IT tools deal with computer technology, hardware and software, and manage data, while OT uses hardware and software to modify physical devices and processes within an organization. Monitor or control (Azudin and Mansor, 2018).

IT is typically pervasive and forms the technological backbone of most organizations.

OT is typical of construction environments where devices have more autonomy than IT tools, resulting in processing system complexity and comprehensive quality control.

Additionally, businesses have the potential to achieve greater value when IT and OT can be integrated rather than operating independently, resulting in cost and security control (Hahn, 2016).

Above all, the literature study shows that the conducted studies are too specific (Scuotto et al. , 2017) and often focus on the technical aspects and complexity of DT implementation and related aspects of business process management.

It shows that we are focusing too much on the impact of. Given the relevance of the rapid development of new technologies, each with its own characteristics, additional research could investigate the impact of Automation tools on different organizational processes (Scuotto et al., 2017).

Indeed, researchers highlight that there are many challenges to overcome when embarking on digital transformation, such as restructuring business processes, organizational structures, and culture (Grover et al., 2022; Isensee et al. , 2020; Mos,teanu, 2020; Ashurst).et al., 2016), aspects including IC should be considered more deeply (Mahmood and Mubarik, 2020).

It is clear that digital transformation forces companies to comprehensively restructure their business models, mainly by leveraging information technology and adopting digital innovations, including intangible capabilities (Ardito et al., 2019; Nambisan et al., 2019; Scuotto et al., 2017; Del Giudice and Straub, 2011). But it also requires significant social and cultural changes at a broader societal level.

The realization of these two revolutions was highly dependent on IC as an intangible asset of companies (Nambisan et al., 2019; Scuotto et al., 2017).

Intellectual capital refers to the economic value of a company's intangible assets, including rational capital, organizational capital, and human capital (McDowell et al., 2018).

In the context of the information economy, IK plays an important role in improving organizational performance and contributing to overall economic growth (Mahmood and Mubarik, 2020; Popkova et al., 2015).

Furthermore, IC has been recognized as another type of asset that positively impacts corporate performance and value (Pirogova et al., 2020), and some scholars, including Atiku (2018), have we are proposing an approach.

Pre-21st Century Formation: ICs can benefit from technological advances given that previous skills and abilities become obsolete with continued advances.

Using Automation as a central tool, updated knowledge can be easily disseminated (Pappas et al., 2023; Helbing, 2013).

Automation can benefit IC education when combined with more traditional learning technologies.

To keep up with widespread innovation and technological know-how, IK requires continuous updating through digitalization.

As part of construction industry the relationship between human resources and technology is becoming increasingly close and binding (Caputo et al., 2019): Digitalization offers expanded learning opportunities and contributes to improving IC.

Furthermore, research still lacks actionable advice to assist companies in attaining and prioritizing digitalization-related process improvement (Kerpedzhiev et al., 2020; Denner et al., 2018).

Moreover, despite efforts to identify significant digital transformation action sectors (Wessel et al., 2021; Benbya et al., 2020; Vial, 2019; Gimpel et al., 2018), the Knowledge is in its early stages. According to Singh and Hess (2017), it is vital to evaluate a holistic digital strategy that includes both the benefits and dangers connected with DTs: through this path, value creation is achievable. These factors contribute to the development of appropriate capabilities such as business model innovation, digital platform management, digital leadership empowerment, and process digitalization and automation (Legner et al., 2017), which also imply IC management.

According to Caputo et al. (2023), new organized entities and business models are emerging. Management of business processes As a result of the continuing transition, new competencies are necessary for managing and living them.

Korytko and Bryl (2021) systematize existing methods for determining the size, dynamics, and level of IC.

Furthermore, the continuous integration of an organization's technology with social media, mobile access, or embedded systems is crucial for business performance (Mantymaki et al., 2022; Ruparel et al., 2020; Singh and Hess, 2017).

To summarize, in order to facilitate digital transformation, it may be worthwhile to examine the effects of IS integration on process advancements (Gebaur et al., 2020; Reis et al., 2019; Kirchner et al., 2016; Bhatt, 2020).

-Management of business processes as a vital component of intellectual capital:

According to the previous literature review, digitalization necessitates appropriate adjustments in capabilities and routines (Wu et al., 2022), and BPM increases performance while encouraging collaboration (Weske, 2012).

The presence of digital transformation readiness is required for the increase of process management effectiveness.

An organization's digital transformation awareness extends beyond the use of DT in the strategic planning and execution of business processes and activities.

It also includes employees' and management's comprehension and attentiveness to make the necessary changes (Svarc et al., 2021; Matos et al., 2017).

As a result, preparation for digital transformation is intimately related to IC, particularly the development of a new set of skills that enable the optimization of benefits generated from the deployment of DTs (Ahmed et al., 2022).

Encouragement of digital innovations is critical, particularly in terms of the development of knowledge and skills in the implementation of modern DT solutions. Given the importance of persons in the process of creating value for a project, it is critical to foster the necessary skills and abilities that will improve the project's overall outcomes.

Furthermore, being prepared for digital transformation necessitates the creation of a favorable work environment as well as the development of an organizational culture that promotes learning and the interchange of ideas. Among staff members. This further underscores the significance of structural capital (Matos et al., 2017).

As a result, establishing appropriate competencies for both employees and managers is a critical step for any firm. Companies invest in training and recruiting to improve the competencies of their workforce in order to better manage customer relationships, highlighting the importance of managing and developing intangible resources at various organizational levels (Kujansivu and L onnqvist, 2008).

According to Dumas et al. (2018), BPM is the science and implementation of supervised business processes to ensure consistent outcomes and business performance development. Other researchers (Lehnert et al., 2020; De Bruin and Rosemann, 2005) have made similar claims.

BPM is a collection of strategies, tools, and systems used to identify, prioritize, analyze, improve, and regulate an organization's business processes (Weske, 2012; Dumas et al., 2018).

Functional orientation is substituted by process orientation in this paradigm to facilitate responding to market dynamics, competitive pressure, and technology improvements (Dumas et al., 2018; Weske, 2012).

In this regard, BPM can give organizations with greater flexibility and agility, allowing them to be more responsive to innovation and customer-focused (Becker et al., 2013).

-When studies from IT and management subjects are combined (Recker and Mendling, 2016), it is obvious that BPM is required for successful processes. Furthermore, process management enables the creation of IC and serves as a tool or strategy for doing so.

Similarly, increasing IC may lead to improved process performance, and improving personnel skills and attitudes leads to a smoother process of addressing customer needs (Kujansivu and L€onnqvist, 2008).

Indeed, the literature on IC emphasizes that IC involves people's competencies, processes, and organizational resources, as well as relationships with stakeholders. Indeed, human, relational, and structural capital are widely accepted as the key IC components (Kujansivu and L€onnqvist, 2008; Sveiby, 1997).

Furthermore, IC management is often debated; L€onnqvist and Kujansivu (2007) separated IC management into two functions, namely controlling and development.

While controlling refers to all of the tasks required to identify the intangible resources linked with IC, development refers to intangible resource enhancement. The two functions appear to be closely connected and complementary.

Despite its descriptive nature, the proposed framework specifies that IC must be addressed using specialized managerial techniques such as BPM (Kujansivu and L€onnqvist, 2008).

Under this lens, BPM could be effective for implementing IC management activities because, like other managerial approaches, it can be applied to intangible business factors such as human and IC.

Given that the ultimate goal of BPM is to improve business performance by building processes in many operational areas, it can benefit from a range of IC perspectives, including customer happiness and productivity (Bamel et al., 2022).

BPM is acknowledged as a method for managing IC because it can aid in the transformation of human capital into structural capital, the institutionalization of knowledge stockpiles, and the avoidance of organizational rigidities (Johnson, 2002)

With relation to the healthcare business, Schiavone et al. (2022) emphasize the relevance of IC in pushing the development of a trustworthy measurement system.

Even though the literature focuses primarily on large corporations, the problem is relevant for SMEs as well (Bansal et al., 2022; Kujansivu and L€onnqvist, 2008; Svarc et al., 2021).

The relationship between BPM and IC should be investigated in the context of SMEs because IC management affects a wide range of financial performance metrics in SMEs with unexpected and mixed results (Bansal et al., 2022; Chierici et al., 2021); given that BPM aims to improve company performance, IC management represents a critical element from a BPM standpoint.

Given the preceding factors, it is worthwhile to investigate how automation can affect IC via BPM.

-Business process management and digitalization, as well as the growing necessity to investigate construction companies:

BPM and digitalization share the same essential assumptions. BPM strives to improve corporate performance by providing methodologies and approaches and fostering innovation.

Weske (2012) defines productivity, collaboration, and efficiency. And Automation gives special competencies in the fields of information management, information processing, and communication, therefore strengthening intellectual capital (Khanra et al., 2020; Sidorova, 2015).

To truly maximize on the benefits afforded by IT, firms must align their structure and procedures with the system's features.

We may conclude that technology is the primary enabler of BPM and digitalization. From a managerial standpoint, BPM enables enterprises to leverage DTs in order to gain improvements and progress in process management (Denner et al., 2018; Mendling et al., 2020; Tnnessen et al., 2021), by combining the fields of management sciences and information technology (Zerbino et al., 2021; Van der Aalst, 2013).

Research on digital transformation projects is still in its early stages and does not yet provide a comprehensive picture, resulting in a jumbled picture.

Some studies show action fields for incumbent firms to successfully implement digital transformation (Gimpel et al., 2018), while others introduce barriers and enablers for digital transformation in family businesses (Soluk and Kammerlander, 2021), demonstrating that there are isolated understandings (Baier et al., 2022).

Because of the emphasized image in the literature, which highlights a gap in investigating the relationship between Automation and BPM, our primary goals are to investigate the influence of digital tools on business processes (Kerpedzhiev et al., 2021) and the associated effects (Antonucci et al., 2020).

Furthermore, as recommended by the literature, the highlighted gap in digital transformation and BPM needs to be filled, particularly in the context of SMEs in construction field (Eller et al., 2020; Scutto et al., 2017).

Economic dynamics with reference to Egyptian construction companies: their research shows how digital platforms can influence the economic performances of Egyptian construction companies functioning in overseas markets.

It is a current and interesting field to investigate (Cha et al., 2015; Li et al., 2018), because digital transformation requires relevant changes to business processes, capabilities, and routines (Wu et al., 2022; Chen et al., 2014), and complexity may arise in SMEs due to the need to fully achieve digitalization of their business model in the presence of limited human and financial resources (Garzoni et al., 2020; Li et al. 2018)

Denicolai et al. (2021) in particular concentrated on the existing literature, which mostly examines the role of the Internet as a tool and investigates how it can influence global growth. In this research,

it is clear that specific types of companies arising from digital innovation (such as start-ups, Internet companies, digital platforms, and so on) have garnered a lot of attention in the international context (Brouthers et al., 2016), whereas SMEs appear to be under investigation in terms of process management changes due to digitalization. The issues that existing construction companies must face as a result of technological evolution should be explored, as little has been published about them (Imgrund et al., 2018).

Processes in business. Another impact of automation and digitalization on an organization's internal processes is its assistance with business processes.

Digital adoption may improve company operations by better aligning them with demand; "it is usually driven by clients requesting that we use a certain technology" Furthermore, digitalization may improve demand's experience, which is an important component of any business process; "understanding of customer expectations through visualizing final products before completion"

"Any technology that assists in getting projects delivered or in winning bids will be adopted" As a result, digital adoption has a favorable impact on an organization's business processes in approaching and reaching the demand market.

Research questions:

RQ1.

What are the main tools, in managing business processes that support the Automation in construction companies?

RQ2.

Also from an IC perspective, what benefits does Automation Bring Regarding his Business process Management for construction companies?

RQ3.

What is the impact from BPM on organizational Automation & digitalization and organizational performance in constructing industry?

Research objectives:

This research aim to focus on the relationship and the impact from Business Process Management on Organizational performance and the mediation role of Business automation and digitalization transformation.

Many research focus on Business Process Management on Organizational performance ignoring the role of organization Automation and this give the importance to this research (from the researcher Point of view).

There was rare in implementing the role of BMP on OP (organizational Performance)

When studying enterprise challenges, one holistic and interconnected approach is represented by the business process management method, a fitting mechanism when digitalization needs to be amalgamated in business practices, enhancing intellectual capital (IC).

As a result, this research investigates Automation through the business process lens, in a sample of small and medium construction companies

-The importance of the research:

This research importance comes from the research objectives

The research aims to explore the Automation tools and business processes link and the related impact on organizational performance, benefits and IC. Design/methodology/approach– In exploring Automation, a sample of Egyptian's Construction companies .

-The method and the sample

The questionnaire approach was chosen to acquire information on practices and to delve deeper into the major issue with this specific topic (Rowley, 2014; Zikmund et al., 2013).

It was especially important to create the questionnaire in order to capture both quantitative and qualitative data, which included three key sections:

- 1) General corporate information,
- 2) Financial information,
- 3) Automation and the internet and the effect on BPM.
- 4) Engineering Division

To ensure correctness, applicability, and comprehensibility, the questionnaire was created in July 2023 using a Google survey and pre-testing by two scholars and one pilot organization.

This research uses a qualitative & quantitative technique to collect and analyze pertinent data. Glenn et al. (2022),

The research that advocates the use of qualitative methodologies to examine organizational impact in the construction sector supports the authors' choice. Participants with one to 5 years of experience were sought for feedback. Jacobsson and Linderoth (2021, p. 759) refer to this group as "ambassadors for digitalization in construction firms." Perspectives were polled to detail the organizational influence from a non-bias standpoint in which participants were allowed to freely and flexibly reflect on their leaders' activities.

The targeted respondent was the controller or the accounting departments accountable, and data collection was completed in Nov2023 , following solicitations and recall.

Furthermore, to assess the internal consistency of responses, the researchers incorporated supplementary "test questions" into the survey instrument, and questions pertaining to dependent and independent variables were strategically allocated to distinct parts of the questionnaire (Podsakoff et al., 2003).

The questions were mainly closed-ended, using a Likert scale or offering a set of viable responses (in the form of a drop-down menu) to reduce the possibility of subjectivity and misinterpretation, requiring an adequate comprehension of the subject topics.

The factors analyzed and offered as potential response possibilities include the numerous components involved, such as IT tools, OT tools used, advantages, benefits, performance enhancements, Automation integration, and business process integration.

The sample, made up of Egyptian construction businesses, was drawn at random from constructions companies , and is evenly spread across Egypt's three areas (Cairo .Giaz and Oct.City).After contacting 1.281 companies,

the number of completed questionnaires returned was 132, representing 10.54% of the response rate, in accordance with the literature (Lund, 2023), which specifies that this percentage is reasonable, even if placed at the minimum level. The sample's companies are mostly in the construction sector (48%), with a strong representation in other industries (trade 33% and service 19%), and they are mostly small (45%) and medium (36%).

The acquired data (from Tables 1-8) were extended using two types of tests: 1) for categorical questions, binomial tests were employed, and the resulting percentages were compared to prevent chance effects, and 2) for quantitative variables, the zeta test was utilized. In addition, the model (Figure 1) was developed in R using the "plsrm" package, and the PLS-SEM model was estimated.

The PLS-SEM models are ideal for these research since they allow for exploration, do not require assumptions, and may be employed with small sample sizes (Cleary et al., 2022).

As a result, they are frequently utilized for exploratory reasons (Hair et al., 2019; Sanchez, 2013).

IV. Results:

The sample examined, which was primarily composed of SMEs in construction industry (91%), depicts the current situation of Automation, specifically referring to business processes management in the Egyptian context, and it is possible to state, based on the highlighted results, that the business processes, which are more linked and devoted to supporting company management, such as administration, management control, and financial management processes, are those more involved in the digitalization process (Korytko and Kostyuk, 2010).

This behavior is also influenced by operational and support processes, but to a lesser extent. Because of their ability to regulate core and support operations, the IC and its ability to manage more infrastructure business activities can lead the Automation.

This evidence represents a significant effort, particularly in SMEs, to thoroughly consider the challenges posed by digitalization, emphasizing the relationship with IC (Svarc et al., 2021) and investigating the relationship between Automation and the management of employees' capabilities, processes, and company resources (Dabi'c et al., 2021).

The Automation in the organizations studied is obviously in its early stages, but it is underway and requires significant work to achieve a good level (Caputo et al., 2022, 2023).

Construction Companies, in particular, must better understand the major technologies that enable digitalization, as well as their effects and benefits on processes and company management, before embarking on the digital shift (Schiavone et al., 2022).

Based on technologies, they contribute to Automation Furthermore, while it is obvious that DTs exploitation can help companies gain value, it is also necessary to shed light on "how" to exploit DTs in order to advance in this field (Kerpedzhiev et al., 2020; Denner et al., 2018; Beverungem et al., 2019; Huber et al., 2019), which is what this research aims to do by answering the formulated research questions.

To achieve the first stated goal and answer the first research question - RQ1: What are the primary tools for managing business processes that promote Automation in construction SMEs?

IT devices, which are instruments that can manage data, and OT, which are technologies that regulate the physical environment, were investigated (Azudin and Mansor, 2018).

When it comes to IT tools, the key emerging evidence is a good acceptance of SQL server, cloud computing, Exchange server, and CRM, which are the main actors in the Automation in the sample studied.

It is also underlined how IT digital solutions capable of managing information, rather than just storing and accessing information, are becoming more widely used, such as exchange servers and CRM. Indeed, these solutions are distinguished by agility and flexibility features that shape data processing systems, allowing businesses to achieve Automation .

Furthermore, while analyzing OT technologies that are more devoted to efficiently arranging information to enable automation processing, SCADA, CNC, and PLC are primarily represented in the sample.

SCADA systems, in particular, aim to increase company efficiency by gathering and processing real-time data, whereas CNC systems support better performance in many machine functions while reducing human control, and PLC systems, which monitor device inputs in real time, aim to manage output devices.

As a result, the study emphasizes viable recommendations that assist organizations in achieving and prioritizing process enhancement in accordance with digitalization (Kerpedzhiev et al., 2020; Denner et al., 2018).

Value creation can be achieved by considering a comprehensive digital strategy that includes both the benefits and risks associated with DTs (Singh and Hess, 2017), and after highlighting the main evidence in terms of DTs, what makes the difference is that the best benefits are obtained when IT and OT converge (Hahn, 2016).

To fill the gap identified in the literature (Eller et al., 2020; Kerpedzhiev et al., 2020), an emphasis was placed on what to achieve and prioritize in terms of process improvements and Automation.

As a result, the study investigated the link between DTs, BPM, and IC (Nambisan et al., 2019; Scuotto et al., 2017).

According to the data, according to the consequences, some digital technologies are more devoted to supporting certain business process management improvements than others.

Because of more exact and timely information, analyzing IT technologies, such as IOT tools, helps management control process improvements.

Another rising example is CRM systems that enhance procurement and logistics processes, because knowing what the client wants in advance,

It is possible to adjust corporate processes more quickly.

The elaborated and obtained information and expertise from big data helps the maintenance process.

Because of its ability to process and distribute information, HTTP Server aids the human resources (HR) process.

It is also feasible to observe certain crucial relationships while examining the effects of OT instruments.

. Because it is feasible to provide clients with novel experiences, virtual and augmented reality are key players in marketing process improvements.

AR also improves the sales, administrative, and production planning processes through employee training. CNC tools primarily serve the production planning and Operations processes. Owing to its inherent characteristics in dealing with machines and construction industrial plants.

Finally, because they are dedicated to industrial operations, PLC and DCS primarily push production planning, logistic, and procurement procedures.

As previously said, not only are digital tools important to investigate in order to better implement the Automation of business processes, but so are the effects and benefits associated with BPM, as required by the literature (Eller et al., 2020; Gebauer et al., 2020; Kirchner et al., 2016).

Influencing in terms of value addition (Baier et al., 2022) In this regard, the Research gives light on the second research question

RQ2: What are the key benefits of Automation in terms of BPM in construction SMEs, also in terms of IC? Following Pirogova et al. (2020), who acknowledged intellectual capital as another type of asset.

Observing IT tools, the feasible benefits are:

- 1) Performance increases due to cloud computing, HTTP server, and CRM approach,
- 2) Cost savings due to big data, IOT, and HTTP server.

The preceding techniques can assist organizations in better managing efficiency (cost savings) and effectiveness (in terms of revenue).

Furthermore, additional benefits are possible, including

- 3) faster decision making
- 4) better internal and external communication, thanks to IOT, exchange server, big data, SQL server, and CRM techniques that shorten distances between different business areas while also allowing immediate discussion for rapid decision making and communication with external shareholders and the community.

The key achievable benefits of OT tools are the same: performance increases, cost savings, internal and external communication, and speedier choices, but they are backed by different solutions. Performance gains are made possible by PLC systems, which primarily affect production and production planning processes, as well as AR, which, as previously demonstrated, has a good impact on both production and sales processes.

As previously stated, digitalization provides advanced learning opportunities, contributing to an increase in IC (Caputo et al., 2019), and IC must be addressed through specific managerial tools, such as BPM (Kujansivu and L onnqvist, 2008) and DTs, as previously demonstrated,

Also taking into account that the correlation between BPM and IC is particularly relevant, within the context of small and medium-sized construction enterprises, due to their effects (Bansal et al 2022)

According to this viewpoint, BPM may be useful for implementing IC management activities because it can be applied to intangible components of the firm, such as human and IC, but BPM may also benefit from IC views, such as customer satisfaction and productivity (Bamel et al., 2022).

Furthermore, the regression results show that a high level of digitalization integration is essential to produce not just superior financial performance but also a high level of automation integration.

Indeed, when digitalization amalgamation across business operations increases, other benefits emerge, such as cost savings and faster communication, as literature (Atiku, 2018) emphasizes. Indeed, BPM assists firms in better managing efficiency and effectiveness, and DTs boost process performances (Zerbino et al., 2021; Mendling et al., 2020; Denner et al., 2018; Van der Aalst, 2013),

hence improving management abilities, which are a critical component of IC. As a result, IC management has a major impact on various financial performances in construction SMEs, with surprising and varied outcomes (Bansal et al., 2022; Chierici et al., 2021).

Internal communication among organizational units is undeniably better, but so is external communication with stakeholders. Furthermore, faster information improves managerial capacity by speeding up decision-making and improving cost management, hence impacting performance.

Scholars (for example, Pappas et al. (2023)) addressed this subject when they recognized the importance of Automation in improving decision-making processes, including those related to sustainability performance.

This research can help public bodies better channel monies to support the Automation of construction SMEs (Depaoli et al., 2020), especially those in the early stages.

According to a European paper (Communication from the Commission to the European Parliament, 2020; page 3) only a tiny percentage of construction SMEs (about 17%) profit from digitalization integration.

As a result, it is critical to create policies for the medium and long term in order to avoid making sporadic investments in automation that are not integrated. Furthermore, funding should be allocated to integrate IT systems with operations and processes, and investments should be directed toward training programs to improve IC.

Implications for Practice:

When a phenomenon, such as digital transformation, is still in its infancy (Wessel et al., 2021; Benbya et al., 2020; Vial, 2019; Gimpel et al., 2018),

practical contributions are critical to ensuring fresh breakthroughs in the field. Because of the research, managers and owners of construction companies SMEs can be made aware of the importance of actively selecting the proper sort of automation investments to fulfill the company's digital transformation.

Keeping the value added creation in mind. Indeed, the study gives a road map for completely comprehending how to make the most of DTs and which DTs can lead to digital transformation, encouraging operational reflections, and managing IC (Huang et al., 2021).

As a result, firms can achieve and prioritize process improvement in accordance with automation (Kerpedzhiev et al., 2020; Denner et al., 2018) strategies.

In this vein, the data show how some IT, such as exchange server and CRM, and some OT tools, such as SCADA, CNC, and PLC, are more widely used by SMEs, enabling automation.

Furthermore, the linkages depicted in Figure 1 assist practitioners in assigning the appropriate weight to DT expenditures by demonstrating how various IT and OT tools effect business process improvements.

Furthermore, the benefits of digital transformation for the construction firms are highlighted in terms of improved financial performance, improved external and internal communication, cost savings, and faster decision making processes, thus supporting Business processes management managers' choices in a more rational and conscious manner, increasing managerial competencies, a valuable intangible asset (Sahuet et al., 2020).

More specifically, it is emphasized that with a good degree of process automation, not only better financial performance, but also benefits in terms of communication, cost savings, and faster choices are feasible, opening the path for value creation.

Finally, the greater contribution is related to digital tools, which primarily impact financial and non-financial performance, shedding light on virtual and augmented reality (AR), which plays an important role in added value, shedding light on how to generate sustainable value through the digitalization process (Chauhan et al., 2022; Bhatt et al., 2020).

Management of business processes is an important intangible resource, and the spread of DTs enhances IC,

Sometimes offering new chances for enterprises in terms of business models and different types of organizations. According to this viewpoint, businesses can use automation and its impact on business process management as a lever to develop and improve IC.

The researcher discovered that automation has a positive impact on business process management through data analysis: more specifically, we highlighted digital tools and their effects on specific business processes, resulting in new knowledge, abilities, and awareness: all key factors that play a pivotal role in feeding IC.

The research builds on Atiku's (2018) findings that IC can benefit from automation via BPM.

Furthermore, it demonstrates that digital tools can have an impact on more than just the economic success of Egyptian construction companies SMEs (Caputo et al., 2022).

-Researcher contribution:

According to Legner et al. (2017), the research adopted the BPM approach, a holistic way to observe the digitalization phenomenon in construction SMEs (Chatterjee et al., 2022; Kerpedzhiev et al., 2020; Nambisan et al., 2019), and it deepens what is yet unknown in the literature, filling the gap that highlighted a need to investigate about the phenomenon.

Under the automation lens, some new challenges are required and emerging (Han and Trimi, 2022; Ashfaq et al., 2022; Talwar et al., 2020; Eller et al., 2020; Kerpedzhiev et al., 2020; Antonucci et al., 2020; Denner et al., 2018; Scuotto et al., 2017).

Organizational performance, as well as responding to the need to investigate more ICTs and DTs (Scuotto et al., 2017).

Indeed, our research sheds light on the level of automation and organizational performance: as the level of digitalization integration increases, so does the level of performance.

Moreover, the study explores the relationship between BPM and IC within the context of SMEs, confirming the centrality of IC (Mahmood and Mubarik, 2020) as a source of collective innovation driven by automation (Chierici et al., 2021) and contributing to cover the literature gap that calls for more studies in construction industry (Bansal et al., 2022; Svarc et al., 2021; Kujansivu and L€onnqvist, 2008).

It appears that, owing to BPM and automation, constructions companies can leverage IC entrenched in their core competences and processes to achieve superior business results (Bansal et al., 2022).

the research contributes to expanding knowledge of SMEs'in construction industry behavior along the Automation process (Garzoni et al., 2020; Imgrund et al., 2018; Li et al., 2018; Cha et al., 2015),

Capturing the correlation between the organization's BPM and the capacity to create value through digitalization (M€antym€aki et al., 2022; Ruparel et al., 2020; Kirchner et al., 2019)

It has been established that digitalization provides increased learning opportunities, hence contributing to an increase in IC (Caputo et al., 2019).

Focusing on the Egyptian setting, a rich environment for construction companies SMEs,

The research also includes a study of a specific geographical area, as requested by the literature (Eller et al., 2020).

Furthermore, the SMEs' automation practices are depicted, as well as the major outcomes of diverse digital tool adoption and consequences in terms of value added and advantages (Baier et al., 2022), filling a vacuum in the research (Eller et al., 2020; Garzoni et al., 2020).

Filling the gaps identified by Eller et al. (2020), the researcher measured the Automation scale throughout the level of process digitalization, and the researcher examined construction companies SMEs' performance in terms of business process improvements, highlighting specific automation instruments, both IT and OT.

Furthermore, by investigating the relationship between automation, BPM, and benefits, and emphasizing the management of skills, processes, and corporate resources, the researcher give an IC contribution (Dabi'c et al., 2021; Svarc et al., 2021).

Furthermore, the research contributes to filling a gap in the literature background of practical advice that supports and designates process advances in line with the automation phenomenon (Kerpedzhiev et al., 2020; Denner et al., 2018), as well as identifying action fields (Wessel et al., 2021), as proposed below with practical developments.

V. Conclusion:

This research focuses on the impact of automation and digital tools on corporate processes (Kerpedzhiev et al., 2021) and the repercussions (Antonucci et al., 2020).

The research specifically tackles the literature gap by evaluating the relationship between automation and BPM, making a vital contribution by speaking to the current gap within the context of construction companies (Eller et al., 2020; Scuotto et al., 2017).

Furthermore, the research focuses on the creation of a fresh set of elements that will support and stimulate digital innovations, Notably in terms of the development of knowledge and skills in the field of applying modern DT solutions.

Given the importance of persons in the process of creating value for a project, it is critical to grow the required skills and abilities that will improve the project's overall results (Matos et al., 2017).

The research also linked the DTs classified as IT and OT to the business process in order to gain benefits and achieve automation,

Observing the influence on IC in construction firms, thereby contributing to the reduction of studies in these types of organizations (Bansal et al., 2022; Eller et al., 2020; Imgrund et al., 2018; Scuotto et al., 2017)

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