

The influence of e-trust on a job performance model based on employees' dynamic capabilities during a crisis caused by a Black Swan event

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Abstract

PURPOSE: In a crisis such as the COVID-19 pandemic, employees play a key role in the ability to survive and achieve both sufficient and outstanding performance in the organization. Therefore, both the characteristics of people in the organization and the possibility of influencing the improvement of their performance at work, have become the focus of attention of scientists and practitioners. In this context, the purpose of this article is to analyze the role of e-trust in strengthening the influence of employees' dynamic capabilities on the job performance of employees among organizations operating under the conditions of the COVID-19 pandemic. **METHODOLOGY:** An empirical study was performed based on the Employees' Dynamic Capabilities model. In order to verify the potential relations, empirical studies were conducted in 1200 organizations located in Poland, Italy and USA. The companies were selected on the basis of the purposive manner. The structured questionnaire was prepared and the CAWI (Computer-Assisted Web Interview) method was used in this research. The reliability of the scales used in the survey was tested and afterwards a multigroup path analysis was performed using IBM SPSS AMOS. The model was verified, confirming the presumed relationships between the variables. **FINDINGS:** It has been

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proven that the higher the level of e-trust is, the stronger the influence of EDC is on job performance of organizations operating under a crisis caused by a Black Swan event mediated by P-J fit, work motivation, job satisfaction and work engagement.

IMPLICATIONS: *This study contributes to the current knowledge of management, in particular human resource management. In the theoretical area, the relationships between the factors influencing job performance in the difficult conditions of the crisis caused by the Black Swan event were described. On the other hand, from a practical point of view, indications on how to shape leadership behavior during remote work, with particular emphasis on the e-trust aspect, seem to be important.*

ORIGINALITY AND VALUE: *This research enriches the considerations regarding the existing Employees' Dynamic Capabilities model. The role of the e-trust factor, which is an important part of e-leadership, in the context of the impact on this model was indicated and discussed. The conclusions are a solid step in the development of knowledge about managing employees during remote work, which not only became a solution for the time of the crisis, but was also permanently introduced to the current work organization.*

Keywords: *management, e-trust, employee dynamic capabilities, person – job fit, motivation, satisfaction, work engagement, job performance.*

INTRODUCTION

The crisis caused by the COVID-19 pandemic has introduced many changes in the perception and operation of the contemporary world (Bufquin et al., 2021; Han et al., 2022; Kosieradzka et al., 2022). These changes can be observed in virtually all areas, including political, social and economic ones. As a consequence, it became necessary to introduce a new approach to organization management, including human resource management (Charoensukmongkol & Pandey, 2022). The spread of the virus, which is particularly dangerous for individuals with existing diseases (Bangwal et al., 2022), actually has a direct effect on the physical and mental health of all people (Yu et al., 2021). That is why it was crucial from the business point of view, on the one hand, to ensure the safety of customers, but on the other, to make sure that the health and performance of employees were not endangered (Bangwal et al., 2022). Since, despite the efforts of many countries, it is not possible to find an effective cure for the disease caused by the SARS-CoV-2 virus, a number of other measures have been introduced to mitigate the negative effects of the pandemic's spread. One of them that ensured social distancing and reduced contamination migration was the introduction of remote work (Shen, 2021; Tan et al., 2022). The organization of remote work is associated with many challenges, and success depends on the implementation of the technology-organization-environment (TOE) framework (Ng et al., 2022). The employee must prepare a workplace at

home, learn about IT tools supporting online work, transfer work-related activities to virtual reality, and find a way to navigate this space (Bontrager et al., 2021). Considering the multiplicity of problems that may arise in this process, support from management seems to be necessary. Therefore, the transfer of interpersonal contacts to the digital environment drew attention to e-trust, a part of e-leadership (Kulshreshtha & Sharma, 2021). Previous research showed how the lack of good solutions in the area of e-trust can affect the overall activity. Among the most frequently mentioned problems there are indicated are: miscommunication, poor motivation, lack of recognition, inadequate use of IT tools, inappropriate process and security management (Van Wart et al., 2019).

Despite the fact that the tools that allow one to work from home are not a novelty, as well as a concept of remote work (Ng et al., 2022), the scale of this phenomenon, which appeared with the onset of the pandemic, brought the issue of the online workforce performance into the spotlight. However, research in this area does not seem to be unequivocal. First of all, there are discrepancies in the perception of the impact of the pandemic on performance. On the one hand, researchers believe that the spread of coronavirus has a negative impact on performance – due to job insecurity, stress, work-life balance disorders, difficulties in adapting to the new reality, inability to use IT tools (Demirović Bajrami et al., 2021; Tu et al., 2021). On the other hand, it was shown that switching to remote work resulted in better job satisfaction, the possibility of recruiting specialists from all over the world and flexible adjustment of working hours, which had a positive impact on performance (Graves & Karabayeva, 2020; Narayanamurthy & Tortorella, 2021). Secondly, the influence of e-trust on performance does not seem to be unambiguous. According to certain reports, e-trust as a part of e-leadership has little influence on virtual teams' performance in the public sector (Elyousfi et al., 2021). On the other hand, it is claimed that focusing on this aspect will allow to achieve performance beyond expectations (Roman et al., 2019). The above considerations lead to the conclusion that we are dealing with a research gap, therefore, it is advisable to conduct research in this area.

It is already established that organizations operating under such critical conditions need to rely on their dynamic capabilities (Bieńkowska & Tworek, 2020), especially those connected to their employees. Bieńkowska and Tworek (2020) indicated that employees' dynamic capabilities (EDC) have the ability to positively influence the job performance of employees through numerous mediators connected to work-related attitudes. It seems that e-trust may have a crucial role in strengthening such a relation. Therefore, the aim of the conducted research is to analyze the role of e-trust in strengthening the influence of employees' dynamic capabilities on the job performance

of employees among organizations operating under the conditions of the COVID-19 pandemic. Such aim will be accomplished by a literature review and empirical studies, conducted to verify the proposed hypothesis.

LITERATURE REVIEW

Job performance model based on employees' dynamic capabilities during a crisis

Job performance, as a key element for the long-term survival of an organization, is often the focus of researchers' attention (Ángeles López-Cabarcos et al., 2022; Han et al., 2022). This is due to the proven relationship between job performance and organizational performance, and the construct connected with organizational outcomes such as financial performance, product market performance and shareholder return, and therefore requires synergistic involvement of the entire organization (Bieńkowska et al., 2021b; Ramezan et al., 2013; Richard et al., 2009).

With this in mind, Bieńkowska & Tworek (2020) developed a job performance model based on employees' dynamic capabilities. Within this model, the starting point is employees' dynamic capabilities, which are treated as a new construct that has grown up in the area of organizations' dynamic capabilities and has captured the interest of academics and practitioners (Al Wali et al., 2022; Joather Al Wali et al., 2020). According to Bieńkowska & Tworek (2020), employees' dynamic capabilities are considered as a multidimensional notion, which takes into account the employee ability to be sensitive to changes in the environment, to adapt to changes in the environment, to proactively solve problems arising in the workplace (if they occur) and include innovations in the workplace, but also the ability for continuous personal development and learning. In research based on the sample of 550 employees from Poland and USA, the authors discovered the influence of employees' dynamic capabilities on job performance with two mediation dependencies. The first mediator was person–job fit, i.e., matching the characteristics of the employee and the job description. The second was the group of mediators: job motivation (perceived as an internal motivation, which is considered as an employee's sense of willingness in performing job related tasks efficiently), job satisfaction (the level in which an employee is happy with the job) and job engagement (the level in which an employee voluntarily adjusts to the duties performed) (Bieńkowska & Tworek, 2020; Edwards, 1991; Hackman & Oldham, 1974; Schaufeli & Bakker, 2003).

The model described above was developed and verified before the critical changes in the functioning of organizations caused by the Covid-19 pandemic. There is no doubt that during this crisis, known as a Black Swan event, perception of phenomena has changed (Henseler et al., 2022). On the one hand, there are several reports that during the spread of coronavirus job performance decreased. This is due to a number of negative factors affecting the activity of the employee. First of all, the need for social isolation forced the cessation of informal contacts, and this hindered development and learning (Chaker et al., 2021). Secondly, it could be observed that stress increased among employees. This is due to layoffs in certain sectors of the economy, a more demanding working environment, and unethical solutions implemented by organizations that tried to survive in difficult conditions (Tu et al., 2021; Wong et al., 2021). Thirdly, emotional exhaustion was noticed. It appeared as a consequence of fear for one's own and relatives' health, job insecurity, as well customer incivility behavior, and this all had a negative impact on job performance (Shin et al., 2021). On the other hand, it was observed that in developed economies, 20-25% of workers did not lose their performance when switching to remote jobs (Lund et al., 2021). There is also evidence from Hong Kong that during the waves of infection, online work remained at the same level of effectiveness (Vyas & Butakhieo, 2021). Finally, Ng et al. (2022) proved that remote work is positively related to job performance and has no significant relationship with emotional exhaustion.

The challenges and discrepancies discussed above made it necessary to verify a job performance model based on employees' dynamic capabilities during a crisis. The starting point for the considerations was the assumption that in times of rapid changes, uncertainty and the need to quickly adapt to external requirements, employees' dynamic capabilities will be a chance for the survival and even development of the organization (Bieńkowska & Tworek, 2020; Cullen et al., 2014). In research conducted in 115 organizations operating in Italy during the introduction of full restrictions related to the spread of the Covid-19 pandemic, Bieńkowska et al. (2021a) proved a positive relationship between employees' dynamic capabilities and job performance. Moreover, the authors noted that during a Black swan event, job satisfaction and job motivation are no longer significant mediators. What is also very interesting, it turned out that the mediating strength of job engagement increased. Furthermore, the person–job fit remained a significant mediator (Bieńkowska et al., 2021a). Bearing in mind the above changes, it seems that further research should be carried out on the job performance model based on employees' dynamic capabilities during a crisis.

Definition and characteristics of e-trust

Trust is a key element, often cited by scientists as a fundamental aspect of any social interaction. This is because shared trust has direct social, ethical, as well as economic consequences in its causative effect. Trust makes joint ventures a reality (Arrow, 1974; Gambetta, 1988). The idea of trust can be characterized as trust in the credibility and integrity of the exchange partner (Morgan & Hunt, 1994). This idea is developed by arguing that it results from the fact that trust is the starting point for deriving rules of correct behavior or methods of effective action by reducing complexity and uncertainty in a given social system (Luhmann, 1979). Trust is the binder of all international relations and economic exchanges; and also takes the form of a catalyst to create the ground for the first steps in conflict resolution (Deutsch, 1958).

Due to the dynamic development of technology, the term trust finds itself as a new research object in the space of considering new technologies. In the digital age, the term trust takes on a new meaning and, as scientists note, trust is a necessary aspect of the digital economy (Tapscott et al., 2000). The development of technology and broadly understood digitization is what drives a revolution in the industrial world. These dynamics shaped the reconstruction of the concept of leadership, which, as a result of the development of information technologies, has been referred to as e-leadership (Mohammad, 2009; Van Wart et al., 2019).

The significance and dynamics of IT development has been particularly intensified due to the COVID-19 pandemic. In a very short time the way in which a society of different cultures performs their professional and private duties has changed. The necessity to isolate and change the functioning of society as a causative effect have become a catalyst for changes in the way people perform their duties, and thus this change contributed to the development of methods and technologies for communication and information exchange. It is also noted that trust has been recognized as a key issue in digital media and technologies (Shin & Biocca, 2018).

Corritore et al. (2003) define the term e-trust as a certain attitude of complete trust in an online situation where there is a risk that someone's weakness will not be exploited. The phenomenon of e-trust appears on a multitude of levels, becoming a fairly common phenomenon in specific events, such as e-trust in business ethics, e-commerce or systems management. E-trust takes place in environments where there are no direct and physical contacts, where moral and social pressures may be perceived differently as a result. In this process, interactions are carried out by digital devices (Corritore et al., 2003).

The absolutely unexpected COVID-19 pandemic forced employees to work virtually. The term 'virtual team' has developed to reveal aspects related to the performance of their activities and aspects of leadership of such a team. Leaders of such teams have been faced with a new challenge of how to exercise leadership in a new form. Researchers conducted studies where they identified key aspects of how existing knowledge can lead to new insights for newly transferred e-leaders (Chamakiotis et al., 2021). The e-leadership theory explores workplace leadership that is implemented using technology that has an impact on potential interactions and electronic communication networks (Putriastuti & Stasi, 2019). The three-dimensional model of digital trust in the workplace was proposed. Researchers focused on employees' perceptions of technology, people and processes in the workplace, the authors presented three factors that are fundamental to answer the question of what influences the digital trust of employees in the workplace (Launer et al., 2022).

Nowadays, the formula of work that takes place in the digital world is oriented towards achieving the same goals as before the inclusion of employees into the digital world. The only difference is that the concept of information management, supported by technology, is used on a larger scale. Transferring work to binary thresholds creates new challenges not only in the aspects of leadership and team management, but also ethical aspects related to the implementation of new technologies in the work environment (Paska, 2021). The technology must therefore be the result of appropriate validations to remain reliable. And this, in turn, comes down to the idea that the reliability of technology is a key aspect of the reliability of modern organizations (Bieńkowska et al., 2020b).

Due to the contemporary dimension of the functioning of the world, technology not only shapes people's work culture, but also stimulates their social relations. The new technology brings not only a more effective recipe for solving problems, more optimal ways of conducting business processes, but also shapes a new pattern of social relations based on physical methods of information exchange. When operating in a digital environment, people are exposed to binary relationships in which, as in traditional contacts, a new element of trust emerges, identified as e-trust. This e-trust, as well as trust outside the digital environment, is quite a rich concept conditioned by many different elements of the entire system. The development of technology, which during the pandemic took a special development, reduced in a fairly short unit of time the duties of many professions to be performed in front of a computer, tablet or telephone screen. This included various social strata, regardless of education or age, and meant that the first effects of work encountered many difficulties, revealing an extremely important aspect of

trust in this new e-environment. Thus, the phenomenon of e-trust appears, which is identified as the attitude of people towards a digital entity. Different attempts to understand e-trust and how e-trust can be promoted, researchers conceptualize e-trust differently because of the different forms it can take and the different levels at which it can occur.

The role of e-trust during a crisis caused by a Black Swan event

Since the initial outbreak of COVID-19 along its evolvement to a pandemic, researchers have been examining its characteristics against the definition of Black Swan (Wind et al., 2020) (Shilo & Collins-Kreiner, 2022). Although virus infection itself is not novel to human society, with even precedented large-scale effects such as the deadly 'Spanish flu' around 1918 (Trilla et al., 2008) and the H1N1 pandemic from 2009 to 2010 (Neumann et al., 2009), COVID-19 which has wiped human society since 2019 is having an unimaginable scale on the global stage. It caught the whole of humanity off guard. The lack of knowledge and preparedness saw a swift escalation of the event from a regional disease to epidemic and then to an extraordinary global pandemic crisis. Regular economic rules were disturbed by city lockdowns or people guarantees. The aviation industry was damaged greatly followed by unemployment, shrinking transportation capacity and unpredicted traveling experiences (Dube et al., 2021). On the fronts of politics, science or social services, COVID-19 has been bringing challenges to traditional statistical correlational analysis and shaking people's psychological safety. It is assumed that public opinion is likely to transit from pessimistic to unsure (Hutmacher et al., 2022). All these correspond with the attributes of a Black Swan event, and thus led us to treat COVID-19 as such an event, by which we might be able to refer to experiences and proven, effective strategies in coping with it.

E-trust is one of the 6-competence e-leadership models proposed and is allegedly one of the most important attributes in the model (Roman et al., 2019). To understand the role of e-trust under a Black Swan event such as COVID-19, we ought to refer to some early research on the subject of trust and crisis management. Trust has been much discussed in the literature, especially on the subjects of management and teamwork, with e-trust being proposed to be the most important element for continued success of an organization (Avolio & Kahai, 2003; Malhotra et al., 2007). Trust can lead to cooperative behaviors on various levels of crisis management. On the contrary, lack of trust is often seen as the culprit of the deepening of a crisis (Mainwaring, 2006). Gyórfy (2018), in his study among European Union countries found that trust level is positively correlated to crisis management process efficiency (Gyórfy, 2018). Research that has a virtual

setup revealed as well that members expect e-leaders to sustain the same level of support via ICT tools, which substantiates the argument that e-trust between a leader and a virtual team has no different a nature than traditional trust (Toleikienė et al., 2020). E-leaders who successfully establish e-trust are perceived as being honest, consistent and fair (Avolio & Kahai, 2003). Being able to create such a sense of honesty, consistency and fairness is proven to be essential and achievable by skilled e-leaders (Roman et al., 2019). In return, e-leadership is an essential tool when the majority of productivity work had to take place in a remote manner during COVID-19 (Dwianto et al., 2021). During the COVID-19 crisis, leaders have been leaning towards building a relationship with members through rich media such as discussion forums and instant messaging, which is strengthened by the plain media such as file sharing and presentation. Such effort could positively effect members' work efficiency if there is strong trust between the leader and members (Roman et al., 2019). There can be found research that also endorsed the role of e-trust and postulated that building trust is the most fundamental factor that underpins other leadership responsibilities during the COVID-19 crisis (Wang et al., 2022).

The role of e-trust in strengthening the EDC-JP model

Employees' Dynamic Capabilities (EDC) originated from the general Dynamic Capabilities (DC) concept which was thoroughly studied (Ambrosini & Bowman, 2009; Teece et al., 2001; Zahra et al., 2006) and outlined as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address a rapidly changing environment" (Teece et al., 1997, p.516). Bieńkowska and Tworek (2020) defined it as "the ability to integrate, build and reconfigure employees' competencies to address a rapidly changing environment that directly influences the performance of tasks in the workplace" (Bieńkowska & Tworek, 2020).

It denotes not only adaptability and problem solving, but also long-term work process improvements. It is an essential ability that underpins organizations' capacity to deal with varying and turbulent environment (Pulakos et al., 2000). This well corresponds to the Black Swan COVID-19 situation as was elaborated in the previous chapter. COVID-19 entailed a great degree of uncertainty and an extremely dynamic environment with a growing pace of changes. In such a situation, employees are tasked with problems which are characterized as unstructured and require continuous learning (Bieńkowska & Tworek, 2020).

The situation of a high level of uncertainty and the need to work remotely, highlighted the importance of the e-trust issue. Numerous reports indicate

the key role of trust in international alliances (Grosse, 2002), as well as in the work of virtual teams (Child, 2001). Interestingly, it even turns out that trust plays a much greater role among virtual teams than those working in a traditional way (Cascio & Shurygailo, 2003). Moreover, it was noted that there is a dependency between the characteristics of an employee and the trust they have in a leader when working remotely (Flavián et al., 2022). The characteristics of the employee, in turn, are aspects that may be manifested, among others, by EDC (Bieńkowska et al., 2020). On the other hand, the role of the e-leader is undoubted in the context of person–job (P-J) fit. Starting from the importance of the influence of the supervisor on the assessment of the newcomer's P-J fit (Dufour et al., 2022) to making sure that an atmosphere of trust is provided by creating certainty that the employees will perform their tasks reliably, which is one of the positive consequences of P-J fit (Lilian, 2014).

The growing body of literature in this area has led to the conclusion that, after the situation in which the world found itself through the Black Swan COVID-19 crisis, organizations cannot be managed the way they were traditionally (Allen et al., 2015). Hierarchical management works much worse in managing employees working remotely, so it is necessary, among others, to change the approach to building trust (de Vries et al., 2019). Managers should not focus on organizing fragmented tasks, but on building an environment that will neutralize the negative effects of working in an uncertain environment and using IT tools that not all employees use with ease and pleasure (Stokols et al., 2009). Numerous researchers have investigated that the P-J fit affects multiple attitudinal and behavioral outcomes, such as job motivation, job satisfaction, job engagement (Bieńkowska et al., 2020; Kaur & Kang, 2021; O'Reilly et al., 1991). It was noted that team trust is based on the belief that other members will perform well the tasks entrusted to them (which is a consequence of P-J fit), and this in turn translates into job motivation. In this case, the role of an e-leader is to build trust in the team, including e-trust (Zaccaro & Bader, 2003). In addition, modern managers, through a whole range of activities supporting e-trust, such as promoting joint efforts, creating a positive atmosphere for remote work, improving knowledge management or supporting the implementation of joint projects, and improving online communication of challenges, affect not only motivation, but also job satisfaction and job engagement (Lilian, 2014). Therefore, it seems that e-trust may strengthen the positive influence of a P-J fit, job motivation, job satisfaction and work engagement in job performance.

A Black Swan COVID-19 crisis made e-leadership inevitable due to forced teleworking as a measure against the spread of the virus (Dwianto et al., 2021). E-trust in such a context led to a drastic transformation of leadership tasks to instruct employees how to utilize ICT tools and to gather and share

information, monitor and review task division and motivate members through ICT tools (Toleikienė et al., 2020), all using their dynamic capabilities. In addition, working from home is often a complaint by employees as it can prolong working hours and add mental stress, therefore negatively impacting the work–life balance, which may be somehow mitigated by such dynamic capabilities (Toleikienė et al., 2020). The situation expediated ICT tool integration and leadership transformation so that newly emerged e-leaders can successfully manage a crisis and utilize the dynamic capabilities of their employees (Bufquin et al., 2021), because of their ability to strenghten positive influences and mitigate negative ones. Leaders who intend to build trust through ICTs start as early as the project initiating and planning stage, so to create an amicable dynamic which can better orient tasks and responsibilities (Wang et al., 2022) and enable proper use of EDC. In certain situations, such as short-term project virtual teams, even though e-trust is relatively transient and dependent upon the project lifespan, e-trust is still proven to be an essential success factor throughout the project development. It can sustain the team to go through a change of responsibilities and unexpected circumstances enabling EDC (Malhotra et al., 2007), and motivate the team to excel in performance (Avolio & Kahai, 2003). From the employees' perspective, having trust for their leaders creates a sense of belonging and security, a booster for high performance. Therefore, the following hypothesis can be formulated and presented in Figure 1:

H1. The higher the level of e-trust is, the stronger the influence of EDC is on job performance of organizations operating under a crisis caused by a Black Swan event through P-J fit, work motivation, job satisfaction, and work engagement.

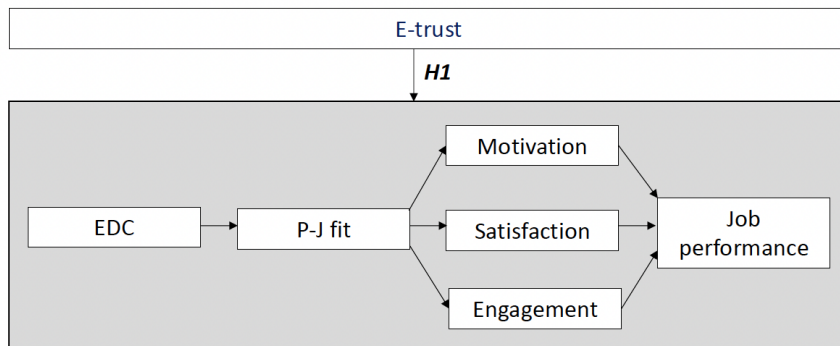


Figure 1. Theoretical model

METHODOLOGY

The role of e-trust in moderating the EDC-JP model was verified during empirical research, after being embedded with the extensive literature review and shown by hypothesis H1. The research was conducted as a part of project no 2020/37/B/HS4/00130 titled "Development of the Job Performance model based on Employees' Dynamic Capabilities for various phases of a crisis in an organization" funded by the National Science Centre in Poland.

Research methods and sample

The research was divided into the pilot research and the main research. The pilot research was conducted among 25 managers, who acted as competent judges. The quality of the questionnaire was tested during this phase of research. The input from the pilot research allowed to avoid common method bias and improve the questionnaire used in the main part of the study, and rewrite several questions, which were not fully understood.

The main part of the research was conducted during an active wave of the COVID-19 pandemic (characterized by rising number of active cases, various restrictions required by most countries – including social distancing, travel limitations, remote work) among 1197 organizations operating in Poland, Italy and USA in the first quarter of 2021. The wave of the COVID-19 pandemic (caused by a new strain of the virus) is considered in the study as the example of a Black Swan event, which caused a crisis in many organizations operating in various countries in the world. Moreover, those organizations were operating in various stages of such crisis, as the study was performed almost 1.5 years after the beginning of the pandemic. The study was conducted using the computer-assisted web interview using the purposive panel of high-level managers working in organizations, employing more than 10 people. Because of the aim of the study, the sample was purposefully selected and limited by geographical aspects (only Poland, Italy and USA were considered – countries severely hit by the COVID-19 pandemic, with implemented restrictions enabling crisis within organizations). In each organization, only one survey was conducted, and it was filled in by a person from a higher level of management. Despite the fact that the selection of organizations for the sample was not representative, it is possible to formulate conclusions because of the diversity of the organizations included in the sample chosen for the study. Organizations were divided into two groups, depending on the level of e-trust (see Table 1). The model itself was verified only among organizations, which declared that they operated during an active wave of COVID-19, which is an example of a Black Swan event. The KMO was calculated for all variables

included in the study and the results remained above 0.8 in every case, which means that the sample was sufficiently big to perform the intended analysis.

Table 1. Research sample characteristic

	Poland	USA	Italy
Total	428	543	235
Including:	Higher level of e-trust	Lower level of e-trust	Total
	670	527	1197

Variables overview and measurement scales verification

To allow verification of hypotheses, the following variables were used: e-trust, EDC, P-J fit, work motivation, job satisfaction, work engagement, job performance (Table 2).

Table 2. Summary of the items and the corresponding variables

Variable	Item
E-trust *E-trust	Within the virtual environment, the leader is able to create a sense of trust. The leader uses virtual communications in a manner that supports honesty, consistency, follow-through, fairness, and general integrity.
Employee dynamic capabilities *EDC	Employees quickly notice and successfully recognize in the environment (both inside and outside of the organization) opportunities and threats (including early warning signals) that can affect the work they do Employees adapt effectively to the opportunities and threats appearing in the environment (both inside and outside the organization) Employees undertake preventive actions that will enable them to carry out the tasks entrusted to them despite changes in the environment Employees quickly notice and successfully recognize problems appearing at the workplace Employees quickly solve problems appearing Employees do it on their own or seek support (within the scope of knowledge and information) that allow them to perform assigned tasks Employees generate innovative ideas and original solutions to problems Employees constantly develop their competences and raise my qualifications
Person – job fit *PJfit	Employees knowledge, skills and abilities fully “match” or fit the requirements of the job Employees felt that their goals and needs are met in this job Employees can use their talent, skills and competencies in this job

Variable	Item
Motivation *Motiva	Employees feel motivated to work Employees are willing and ready to carry out the tasks entrusted to them at the level of a satisfying organization Employees are willing and ready to allocate extra effort allowing exceed the requirements posed in front of them
Satisfaction *Satisf	Generally speaking, Employees are very happy with the work Basically, Employees really like the type of work they do in this organization Employees rarely think about resigning from work
Work engagement *WrkEng	Employees are enthusiastic about their job At this job, employees feel bursting with energy Employees are immersed in their work
Job Performance *JobPerf	Employees always complete the duties specified in their job description Employees always meet all the formal performance requirements of their job Employees complete their tasks efficiently Employees are always able to overcome obstacles to complete their tasks Employees are rarely absent from my work Employees avoid absenteeism at work without a legitimate reason Employees make few mistakes at work

- E-Trust: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 2 items based on a leader's ability to create a sense of trust and supportive communication (Roman et al., 2019).
- Employee dynamic capabilities: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 6 items concerning: sensitivity to changes in the environment, ability to adapt to changes in the environment, ability to solve problems in the workplace (including innovation in the workplace), as well as the ability of continuous personal development (Bieńkowska & Tworek, 2020).
- P-J fit: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 3 items concerning the match between employees' knowledge, skills, abilities (including talent) and requirements of the job (Brkich et al., 2002).
- Work motivation: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 3 items concerning willingness and readiness to carry out the entrusted tasks, including the allocation of an extra effort to it (Hackman & Oldham, 1975).
- Job satisfaction: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 3 items concerning

the employees' attitude towards their job (including happiness and intention to resign from work).

- Work engagement: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 3 items concerning the employees' attitude towards their job (including their enthusiasm, the level of immersion into the job) (Jung et al., 2021).
- Job Performance: a variable assessed on a 5-point Likert scale (1: I strongly disagree to 5: I strongly agree) using 7 items based on the task proficiency, task meticulousness and work discipline.

As a first step of the study, which required a multigroup path analysis based on the obtained data, the measurement scales were assessed. The assessment was made in IBM SPSS using Cronbach's α and the results are given in Table 3.

Table 3. Variables overview

Variable	Items	Alpha-Cronbach
Satisfaction (Satisf)	3	0.630
Motivation (Motiv)	3	0.714
Work engagement (WrkEng)	3	0.714
Job performance (JobPerf)	4	0.753
Person – job fit (PJfit)	3	0.685
EDC (EDC)	8	0.843

This approach seems to be sufficient because the scales used have been previously validated. Cronbach's α should remain above 0.7 (which seems to be the case for almost all variables). Moreover, the systematic method variance was controlled to ensure no common method bias. Based on the performed assessment, it should be noted that almost all measurement scales are well-fitted, reliable, and coherent. Besides that, the discriminant validity was also tested to ensure that the latent variables that represent different theoretical concepts are statistically different and the results (all HTMT < 0.68) confirm that the chosen variables may be used for path analysis.

Path analysis results

The set of criteria concerning measurement scales and the sample, which need to be met to perform the multigroup path analysis, were analyzed and it was determined that the sample and measurement scales can be used for path analysis. Based on such analysis, it was decided to move forward with the model verification using path analysis, as it was more important to

analyze to the full extent the differences among the effects within the model than verify moderation using a continues moderator. That is why a multigroup path analysis was performed using IBM SPSS AMOS, which remained more valuable for the authors than linear regression analysis with moderators, which could have been performed in IBM SPSS.

The multigroup path analysis was performed through dividing the sample into two groups of organizations, those which declared the lower level of e-trust (below median), and those which declared the higher level of e-trust (above median). Based on the obtained data, the statistically significant and well-fitted model was obtained, and the full assessment of the model was performed. It should be noted that the fit of the model was measured at first and assessed with CFI (which determines the goodness of the fit of the model and sufficient values are above 0.7) and RMSEA (which determines the badness of the fit of the model and sufficient values are below 0.2). The unconstrained model obtained from the multigroup path analysis was statistically significant and well-fitted at Chi2 (91) = 953,663; p = 0.001; CFI = 0.783; RMSEA = 0.183 and it was better fitted than the constrained model (which is important from the point of view of moderation).

The detailed results are given in Tables 4-7. Table 4 and 5 contain regression coefficients calculated for organizations characterized by a higher level of e-trust (Table 4) and a lower level of e-trust (Table 5), showing an estimate for each relation, standard error (S.E.), t-value critical ratio (C.R.) and probability (p).

Table 4. Regression coefficients for organizations with a higher level of e-trust

			Estimate	S.E.	C.R.	P
PJfit	<---	EDC	0.579	0.034	17.005	***
Motiv	<---	PJfit	0.534	0.038	14.230	***
Satisf	<---	PJfit	0.600	0.042	14.380	***
WrkEng	<---	PJfit	0.524	0.041	12.629	***
JobPerf	<---	Motiv	0.205	0.043	3.776	***
JobPerf	<---	Satisf	0.100	0.040	2.514	0.012

Table 5. Regression coefficients for organizations with a lower level of e-trust

			Estimate	S.E.	C.R.	P
PJfit	<---	EDC	0.552	0.039	14.095	***
Motiv	<---	PJfit	0.505	0.045	11.169	***
Satisf	<---	PJfit	0.452	0.041	10.893	***
WrkEng	<---	PJfit	0.459	0.045	10.126	***

			Estimate	S.E.	C.R.	P
JobPerf	<---	Motiv	0.162	0.042	4.848	***
JobPerf	<---	Satisf	0.100	0.047	2.147	0.032

Table 6 and 7 contain total effects occurring within the model calculated for organizations characterized by a higher level of e-trust (Table 6) and a lower level of e-trust (Table 7).

Table 6. Total (including indirect) effects for organizations with a higher level of e-trust

	EDC	PJfit	WrkEng	Satisf	Motiv
PJfit	0.579	0.000	0.000	0.000	0.000
WrkEng	0.303 (0.303)	0.524	0.000	0.000	0.000
Satisf	0.348 (0.348)	0.600	0.000	0.000	0.000
Motiv	0.309 (0.309_	0.534	0.000	0.000	0.000
JobPerf	0.138 (0.138)	0.239 (0.239)	0.177	0.100	0.205

Table 7. Total (including indirect in brackets) effects for organizations with a lower level of e-trust

	EDC	PJfit	WrkEng	Satisf	Motiv
PJfit	0.552	0.000	0.000	0.000	0.000
WrkEng	0.253 (0.253)	0.459	0.000	0.000	0.000
Satisf	0.249 (0.249)	0.452	0.000	0.000	0.000
Motiv	0.279 (0.279)	0.505	0.000	0.000	0.000
JobPerf	0.105 (0.105)	0.190 (0.190)	0.089	0.100	0.162

The obtained results confirm that the EDC-JP model is correctly determining the mechanism of EDC influence on job performance in the given sample. Moreover, the obtained model was well-fitted and statistically significant, which shows that there is a statistically significant difference between the strength of a relation occurring within the model for organizations characterized by a higher and a lower level of e-trust. Hence, such results

confirm that e-trust is indeed a moderator of the EDC-JP model and it has the ability to strengthen the relations occurring within it. Such a strengthening effect is quite visible, as the total effect of EDC influence on job performance is 30% stronger in the case of organizations with a higher level of e-trust. The effects are stronger for such organizations in case of all relations within the model. It is worth noting that the highest difference (almost doubled) occurs in case of work engagement (for a higher level of e-trust, the total effect = 0.177, and for a lower level of e-trust the total effect = 0.089). Such findings were additionally verified using IBM SPSS Macro Process (by Hayes), determining that e-trust is indeed a moderator of the relations appearing in the model. Therefore, the obtained results allow to accept the proposed hypothesis stating that the higher the level of e-trust is, the stronger the influence of EDC is on job performance of organizations operating under a crisis caused by a Black Swan event mediated by P-J fit, work motivation, job satisfaction and work engagement (Figure 1).

DISCUSSION AND CONCLUSION

The role of employees in shaping performance seems to be an important issue in modern organizational management, especially in times of crisis caused by a Black Swan event. The results of the conducted research allowed us to state that e-trust, as an essential part of e-leadership, plays an important role in influencing all dependencies between the variables in an employees' dynamic capabilities model based on job performance. E-trust influences the dependencies in the model, strengthening the relationship between them.

The results of the research carried out allow us to confirm the reports from the currently existing literature analysis. First of all, it was shown that e-trust strengthens the relationship between employees' dynamic capabilities and P-J fit, which is consistent with the conclusions of Lilian (2014), but also Dufour et al. (2022), who in their studies indicate the important role of trust in the leader as a reinforcing factor between the characteristics of the employees and their adaptation to work, manifested, inter alia, in the perfect performance of the tasks entrusted to them. Child (2001) emphasizes that these conclusions are especially important for remote work. Secondly, it was shown that e-trust strengthens the relationship between P-J fit and (a) work motivation (b) job satisfaction (c) work engagement, which is also emphasized by the works of Zaccaro and Bader (2003) or Lillian (2014), in which the influence of actions taken by leaders aimed at strengthening e-trust on the relationship between P-J fit and work related attitudes is shown. Finally, it was proved that e-trust strengthens the relation between (a) work motivation

(b) job satisfaction (c) work engagement and job performance, which is also supported by Malvey and Hamby (2004) stressing that, from the employees' perspective, having trust for their leaders creates work-related attitudes which are a booster for high performance. In the above context, the effect of e-trust on a job performance model based on employees' dynamic capabilities during a crisis caused by a Black Swan event should be considered validated.

The main aim of the conducted research was to analyze the role of e-trust in strengthening the influence of employees' dynamic capabilities on the job performance of employees among organizations operating under the conditions of the COVID-19 pandemic. Such aim was fulfilled by a literature review and empirical research. The literature review was a basis for the formulation of the main hypothesis, which was then verified based on an empirical study performed among more than 1100 organizations from Poland, Italy and USA. Bieńkowska and Tworek (2020) indicated earlier that employees' dynamic capabilities (EDC) have the ability to positively influence the job performance of employees through numerous mediators connected to work-related attitudes. This study has proven that e-trust has a crucial role in strengthening such a relation. The conducted research made it possible to verify the impact of e-trust on the job performance model based on EDC during a crisis caused by a Black Swan event (COVID-19 pandemic). In particular, it has been proven that a) e-trust is strengthening the relation between EDC and P-J fit; b) e-trust is strengthening the relation between P-J fit and (a) work motivation (b) job satisfaction (c) work engagement; e-trust is strengthening the relation between (a) work motivation (b) job satisfaction (c) work engagement and job performance. Based on the above considerations, it turned out that the higher the level of e-trust is, the stronger the influence of EDC is on job performance of organizations operating under a crisis caused by a Black Swan event. Therefore, the research gap, which emerged from the literature analysis, has been filled.

The developed addition to the initial model also has a practical significance, in addition to knowledge contribution in the fields of both organizational management and human resources management. The research attempts to determine the dependence of factors influencing job performance, which translates into organizational performance. This aspect is particularly important for ensuring the continuity of the organization's operation, as well as its growth and development. The studies were conducted during the waves of the COVID-19 pandemic, but it seems that the conclusions resulting from them can support the organization's activities, not only during situations caused by this particular crisis. After gaining experience and diagnosing the benefits of remote work, it can be highly probable that it will be implemented into the routine work of an organization. Therefore,

the conducted empirical research may also be used in further activities of the organization. Managers received guidelines on how to influence employee behavior in order to shape the outcomes desired from the organization's point of view. The importance of building e-trust in virtual teams as a key part of e-leadership was indicated. Therefore, the management should focus on the use of tools and strengthening of behaviors that build an atmosphere conducive to a sense of trust between the participants of the organization while working remotely.

The established aim of the paper has been successfully fulfilled. Nevertheless, the discussed results have certain limitations. First of all, although the research sample appears to be significant – 1,200 organizations were tested – they were selected in a purposive manner. Secondly, the research was geographically restricted and conducted in Poland, Italy and USA. Thirdly, research was conducted during the second wave of the pandemic, and the conditions for changes in a pandemic situation may differ. Finally, only e-trust, treated as a component of e-leadership, was considered. However, it seems that, contrary to the above limitations, the conducted research contributes to the knowledge of organizational management and human resource management.

Those considerations also seem to be a solid starting point for future research. First of all, it seems advisable to expand the sample of organizations, as well as to check the analyzed dependencies in other countries, including those with different economic and social characteristics. Secondly, in further research on the job performance model based on employees' dynamic capabilities, it is worth considering other elements of the e-leadership model (e-communications skills, e-social skills, e-team building skills, e-change management skills, e-technological skills). Finally, it is worth considering conducting the same-constructed research due to the turbulent reality around the world.

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Abstrakt

CEL: W kryzysie, jakim niewątpliwie jest pandemia COVID-19, pracownicy odgrywają kluczową rolę w zapewnieniu ciągłości działania oraz osiągnięciu zarówno zadowalających, jak i ponadprzeciętnych wyników organizacji. W związku z tym zarówno charakterystyki uczestników organizacji, jak i możliwość wpływania na poprawę ich efektywności w pracy, znalazły się w centrum uwagi naukowców i praktyków. Mając na uwadze powyższe, celem artykułu jest analiza roli e-zaufania we wzmacnianiu wpływu dynamicznych zdolności pracowników na wydajność pracy wśród organizacji działających w warunkach pandemii COVID-19. **METODYKA:** Badania empiryczne przeprowadzono w oparciu o model dynamicznych zdolności pracowników. Aby zweryfikować potencjalne zależności przeprowadzono badania empiryczne w 1200 organizacjach zlokalizowanych w Polsce, Włoszech i USA. Organizacje zostały wybrane w sposób celowy. Przygotowano ustrukturyzowany kwestionariusz ankiety, a w badaniu wykorzystano metodę CAWI (Computer-Assisted Web Interview). Zbadano rzetelność skal użytych w ankiecie, a następnie przeprowadzono wielogrupową analizę ścieżek przy użyciu IBM SPSS AMOS. Model został zweryfikowany, potwierdzając domniemane zależności między zmiennymi. **WYNIKI:** Udowodniono, że im wyższy poziom e-zaufania, tym silniejszy jest wpływ dynamicznych zdolności pracowników na wydajność pracy w organizacjach działających w warunkach kryzysu spowodowanego zdarzeniem typu czarny łabędź, z uwzględnieniem mediacyjnego efektu dopasowania osoby do pracy, motywacji do pracy, satysfakcji z pracy i zaangażowania w pracę. **IMPLIKACJE:** Opracowanie stanowi wkład do aktualnej wiedzy z zakresu zarządzania, a w szczególności zarządzania zasobami ludzkimi. W kontekście teoretycznym opisano zależności między czynnikami wpływającymi na wydajność pracy w trudnych warunkach kryzysu wywołanego wydarzeniem typu czarny łabędź. Z praktycznego punktu widzenia istotne wydają się natomiast wskazówki w jaki sposób kształtować zachowania przywódcze podczas pracy zdalnej, ze szczególnym uwzględnieniem aspektu e-zaufania. **ORYGINALNOŚĆ I WARTOŚĆ:** Badania wzbogacają rozważania dotyczące istniejącego modelu dynamicznych zdolności pracowników. Wskazano i omówiono rolę czynnika jakim jest e-zaufanie, który jest istotnym elementem e-przywódstwa, w kontekście wpływu na ten model. Wnioski stanowią podwaliny do rozwoju wiedzy na temat zarządzania pracownikami podczas pracy zdalnej, która nie tylko była rozwiązaniem na czas kryzysu, ale została również na stałe wprowadzona do obecnej organizacji pracy. **Słowa kluczowe:** zarządzanie, e-zaufanie, dynamiczne zdolności pracownika, dopasowanie osoby do pracy, motywacja do pracy, satysfakcja z pracy, zaangażowanie w pracę, wydajność pracy.

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Conflicts of interest

The authors declare no conflict of interest.

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