

# VERIFICATION OF THE JOB PERFORMANCE MODEL BASED ON EMPLOYEES' DYNAMIC CAPABILITIES IN ORGANISATIONS UNDER THE COVID-19 PANDEMIC CRISIS

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## ABSTRACT

The paper aims to verify the Job Performance Model based on Employees' Dynamic Capabilities (EDC) and explain the mechanisms shaping job performance based on EDC in an initial phase of the crisis in an organisation due to the Black Swan phenomena, on the example of the COVID-19 pandemic of 2020. Empirical research on Italian organisations affected by the crisis shows that the Model is significantly distorted under such conditions. To verify the internal structure of the Job Performance Model based on EDC under critical conditions, the statistical correlation analysis, linear regression analysis and path analysis were executed using SPSS and SPSS AMOS. The research result of the statistical analysis confirmed that the new version of the Model for organisations under the Black Swan phenomenon was statistically significant without work motivation and job satisfaction. It was also proven that P–J fit still linked EDC and job performance through strengthening work engagement. The research confirmed that the Job Performance Model based on EDC, which has so far been verified under normal working conditions, radically changed its structure during the COVID-19 crisis. This means that factors previously considered important in the Job Performance Model based on EDC have become insignificant in shaping job performance. Therefore, this is an inspiration for further research to verify the Job Performance Model based on EDC in different phases of the crisis.

## KEY WORDS

**employee dynamic capabilities, job performance, management**

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## INTRODUCTION

The management history will remember 2020 as the time when practically every organisation in the world was affected by the extreme crisis caused by the COVID-19 pandemic, having all the characteristics

of a so-called Black Swan event (Taleb, 2007; Morales & Andreosso-O'Callaghan, 2020; Murphy et al., 2020). It is a phenomenon of low probability and predictability, causing negative events that are highly consequential and easily explainable but only in ret-

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respect. “Global stock markets appeared to enjoy some level of stability at the start of the year 2020 with positive trends that were disrupted by the emergence of Covid-19” (Morales & Andreosso-O’Callaghan, 2020, p. 2). Such an unpredictable, high-impact event that cannot be prevented causes a crisis in organisations. An internal crisis, especially in its initial phase, forces a necessary reaction by contemporary organisations to ensure their performance, maintain operational continuity and ensure their survival.

It also means that the organisation’s goals must be redefined together with operation methods aimed at their achievement. However, decision-makers “are mostly concerned about the cost of mistakes, rather than exact knowledge about the statistical properties” (Taleb, 2007, p. 199). Moreover, no traditional management models and paradigms work under such extreme conditions that cause a crisis in an organisation’s functioning (Bieńkowska, Tworek & Zabłocka-Kluczka, 2020); therefore, they need to rely on changed models to secure proper operation under critical conditions. Neither regular organisation’s procedures nor the routines and practices are sufficient any longer. They must be verified, redefined and adapted to the extremely critical conditions faced by organisations. More generally, this also means that the existing management paradigms need to be examined and redefined for extremely critical conditions caused by a Black Swan phenomenon to overcome the crisis.

One solution is the Job Performance Model based on Employees’ Dynamic Capabilities developed by Bieńkowska and Tworek (2020), which highlights the importance of dynamic human resources capabilities in shaping job performance. The Employees’ Dynamic Capabilities (EDC) refer to the concept of Dynamic Capabilities of an organisation proposed by Teece, Pisano and Shuen (1997) and Eisenhardt and Martin (2000), and concern “abilities to integrate, build, and reconfigure employees’ competencies to address rapidly changing environment, which is directly influencing the performance of tasks in the workplace” (Bieńkowska & Tworek, 2020, p. 3).

It seems that the verification of the Job Performance Model based on EDC under a crisis caused by a Black Swan event is particularly important due to the nature of dynamic capabilities (here, employees) in the processes of adapting the organisation as a whole to changes in the environment. EDC considers the employee ability to adapt to changes in the environment, their ability to adapt to these changes and creatively solve problems in the organisation. Its role

in shaping job performance under a crisis caused by a Black Swan phenomenon has never been analysed, which constitutes a research gap. This explicit research gap is considered in this paper. Hence, the aim is to verify the Job Performance Model based on EDC and explain the mechanisms of shaping job performance in an organisation under crisis caused by a Black Swan phenomenon. The research relates to the initial crisis phase caused by the COVID-19 pandemic in Italy. The impact of EDC on job performance was analysed under the maximum unpredictability, dynamic course, avalanche-like speed of action and extreme intensity conditions. The obtained model was empirically verified using path analysis (sequential mediation) to test how organisations could benefit from EDC achieving job performance under a crisis caused by the COVID-19 pandemic. The verification was based on a sample of organisations operating in Italy during the initial phase of the COVID-19 pandemic. Italy experienced severe consequences of this phase that caused a crisis in a vast majority of organisations. It was the first country in Europe to be hit by the pandemic, and it was impossible to predict its occurrence. Therefore, literature on the early phase of the pandemic often offers such samples (Ghislieri et al., 2021; Molino et al., 2020).

It seems that the Job Performance Model based on EDC — just as other models known from the organisational theory — may exhibit a different structure and behaviour under such conditions (which is in line with the situational theory, important during such an analysis). The acknowledgement of the changes within the Job Performance Model is a crucial contribution to the current management theory. Filling the research gap contributes to theory (verifying the job performance paradigm among organisations undergoing a crisis caused by a Black Swan phenomenon and contributing to the development of crisis-state theory) and practice (proposing mechanisms potentially helping those organisations to survive).

## 1. LITERATURE OVERVIEW

Job performance can be defined differently (June & Mahmood, 2011). In general, it refers to a property of the employee behaviour (Sonntag & Frese, 2002; Motowidlo & Kell, 2012) and is understood as the expected organisational value of what people do (Motowidlo & Kell, 2012). Moreover, job performance concerns both behavioural and outcome

aspects (Sonnetag & Frese, 2002; Griffin et al., 2017); therefore, according to Motowidlo & Kell (2012, p. 93), it is tied “to an individual’s behaviour rather than to the results of that behaviour”. This paper considers job performance the combination of four aspects: task proficiency, task meticulousness, work discipline and work improvement and readiness for innovation (Ali-Hassan et al., 2015; Kwahk & Park, 2018; Yuen et al., 2018). It includes behaviour and its results. This largely corresponds to the classic approach by Rich et al. (2010), who defined job performance as the aggregated value created for the organisation by the set of employee behaviours directly and indirectly contributing to the fulfilment of organisational goals, expectations and job targets (Campbell, 1990; Borman & Motowidlo, 1993; Rich et al., 2010; June & Mahmood, 2011). The classic performance paradigm (Skinner, 1969) is still valid to some extent, as it offers the main idea regarding various factors influencing job performance and a set of those factors (usually divided into groups, e.g., hygiene factors and motivators (Herzberg, 1987)) constitutes a job performance model. Although the nature and variety of those factors change over the years, various authors of classical and more contemporary literature offer rather similar job performance models featuring various personality traits (Barrick & Mount, 1991; Motowidlo et al., 1997; Salgado, 1997; Tett & Burnett, 2003), work-related attitudes, e.g., work motivation, job satisfaction, employees commitment, work engagement (Hackman & Oldham, 1976; Herzberg, 1987; Judge et al., 2001; Rich et al., 2010) and other so-called alternative predictors (Hunter & Hunter, 1984).

However, a gap in the literature on job performance models was discovered in relation to factors concerning employee abilities to react to changes in the environment. This gave rise to the emergence of so-called adaptive performance (Pulakos et al., 2000; Marques-Quinteiro et al., 2019), aimed at underlining the importance to adapt employee abilities. Such factors became significant since contemporary organisations operate in an increasingly more dynamic environment, which results in the dynamic nature of contemporary work and the workplace. This context required redefining the expectations for modern employees, who are the main organisational resource (Wolf, 2013). Organisations no longer consider employees an existing resource but rather create mechanisms for shaping and using new competences necessary to efficiently perform tasks, flexibly adapting to changes in the environment (Sony & Mekoth,

2016; Marques-Quinteiro et al., 2019). This research gap was addressed by Bienkowska & Tworek (2020), who developed the concept of Employees’ Dynamic Capabilities and used it as a base for a new job performance model.

### 1.1. EMPLOYEES’ DYNAMIC CAPABILITIES

Today the organisational environment changes rapidly, at an increasing speed (Pulakos et al., 2000). The literature provides more detail on dynamic capabilities (DC) that define an organisation’s ability to integrate, build and reconfigure its internal and external competences to adapt to the rapidly changing environmental conditions (Barton, 1995; Teece et al., 1997). DC are, therefore, a certain strategic process that allows the organisation’s resources to be reconfigured in response to the changing market to keep a competitive advantage and adapt to the changes (Handerson & Cockburn, 1994; Teece et al., 1997).

Moreover, the organisational focus on human resources has been a strategic management task in almost every organisation (Gabčanová, 2011). Intellectual capital, human capital and talent as the resources available to employees are becoming increasingly critical to the strategic success of an organisation, determining its competitive advantage (Boudreau & Ramstad, 2017). Human resources and their ability to respond to any signals of changes in the environment are important for ensuring the organisation’s operation (Sonnetag & Frese, 2010; Bienkowska & Tworek, 2020). Such capabilities are referred to in the literature as dynamic employee capabilities, which are defined based on DC definitions by Teece, Pisano and Shuen (Teece & Pisano, 1997). They are understood as the “ability to integrate, build and reconfigure employees’ competences to deal with rapidly changing environments that directly affect the performance of tasks in the workplace” (Bienkowska & Tworek, 2020, p. 3). Therefore, EDC refers to the ability to adapt and solve current problems and keep the long-term improvement of work processes at the workplace. Therefore, EDC is a part of the organisation’s DC (Bienkowska & Tworek, 2020), which has not yet been considered as an influencing factor (Singh & Rao, 2016; Helfat & Martin, 2015; Sotarauta, 2016).

In the above definition, EDC — as a multidimensional notion — refers to employee abilities to:

- be sensitive to changes in the environment (the ability to see changes, recognise opportunities and risks potentially affecting the performance of work),

- adapt to changes in the environment (the ability to undertake preventive actions to avoid problems),
- proactively solve problems in the workplace (if they occur) and include innovations,
- generate innovative ideas and original solutions to problems, and constantly develop competences and qualifications through work (Bieńkowska & Tworek, 2020).

Hence, EDC seems to be especially important for contemporary organisations functioning in a dynamically changing work environment because such conditions induce the dynamic nature of today's work and workplace. Pulakos et al. (2000, p. 612) noticed that nowadays, "workers need to be increasingly adaptable, versatile, and tolerant of uncertainty to operate effectively in this changing and varied environment". Sonnentag and Frese (2002) emphasised that employees should also show the readiness to act and be proactive. At the same time, EDC is the unique combination of employee resources and their ability to flexibly adapt to changes in the environment. This means that EDC also considers the need for continuous personal development and learning (Bieńkowska & Tworek, 2020) as employees must constantly refine and enlarge their skill sets throughout their career (Tews et al., 2011). According to Tews et al. (2011, p. 484), "learning and problem-solving are critical for employee success on the job".

### 1.2. JOB PERFORMANCE MODEL BASED ON EMPLOYEES' DYNAMIC CAPABILITIES

The role of EDC in shaping employee job performance was confirmed by Bieńkowska and Tworek (2020), which was a basis for developing a mediation Model of Job Performance based on EDC. The pilot study was carried out in 2019 based on 550 organisations operating in Poland and the USA. Based on obtained results, the Job Performance Model based on EDC was verified using organisations operating under normal conditions. Although the model included EDC, it showed that EDC affected job performance and, therefore, was still partly in line with the classic performance paradigm and various versions of classic job performance models localised around work motivation and job satisfaction.

The model included several factors mediating the relation between EDC and job performance, showing that the mechanism of EDC influence on job performance is complex and includes the mediation of the following job-related attitudes and characteristics:

- person–job fit (P–J fit) — understood as a match between individual knowledge, skills and abili-

ties and the job requirements (O'Reilly & Chatman, 1986; Edwards, 1991). It is usually presented as the compatibility between the employee and tasks (including their characteristics) that are expected to be accomplished in exchange for the employment (Kristof, 1996; Chilton et al., 2005),

- work motivation (internal work motivation) — traditionally conceptualised as the degree to which the employee is self-motivated to perform effectively (Hackman & Oldham, 1974),
- job satisfaction — defined as "the degree to which the employee is satisfied and happy with the job" (Hackman & Oldham, 1974, p. 6), or in other words, understood as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience" (Rich et al., 2010; Locke, 1976),
- work engagement — understood as the ability of employees to willingly craft themselves to their work roles.

They should "employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1992, p. 694). Engagement is defined as a state of mind related to work, which is described as positive and fulfilling, and an engaged employee is characterised by vigour, dedication, and absorption (Schaufeli & Bakker, 2004, p. 61). Moreover, work engagement is usually understood as the opposite of job burnout (Schaufeli & Bakker, 2004).

The role of each employee in shaping job performance was confirmed to some extent by various literature reports, which, however, did not offer a comprehensive approach to them all. However, based on the obtained empirical results, the Job Performance Model based on EDC included the P–J fit as the first mediator. Next, P–J fit acted as a link between EDC and other factors influencing job performance in the model, such as work motivation, job satisfaction and work engagement. Therefore, the developed model confirmed that the mechanism shaping employee job performance is highly complicated and depends on a set of many factors, but it is justified to include EDC as one of them (Bieńkowska & Tworek, 2020).

### 1.3. JOB PERFORMANCE AND JOB-RELATED ATTITUDES UNDER A CRISIS CAUSED BY A BLACK SWAN PHENOMENON

The unexpected Black Swan phenomena that have occurred throughout history have shown that organisations should focus more on developing

adaptability. Organisations that prepare for crisis situations to a certain extent by looking at possible scenarios have a significantly better ability to manage the negative effects of sudden crises (Coutu, 2002). Therefore, to a large extent, there is a conviction that any organisational crisis (caused by an uncommon event) brings negative effects, threatening the survival of an organisation (Coutu, 2002). All crisis events affecting organisations are often turning points in their lives. Unfortunately, analyses conducted by Starbuck et al. (2006) showed that decisions made by managers to prevent the effects of crises had frequently deepened them even further because organisations, e.g., did not implement adequate management plans to develop their ability to continue to operate and survive during and after the crisis (Elliott et al., 2002; Rose & Lim, 2002; Paton, 2009).

If management is not properly prepared for crisis conditions or a Black Swan phenomenon, an organisation is forced to make rapid changes, and some remain unready (Elliott et al., 2002; Rose & Lim, 2002; Paton, 2009). Employees may feel worried, uninterested and improperly cared for, with growing concern about their job security (Paton, 2009). When the employer does not ensure the safety of the workplace, employees are exposed to stress and negative emotional responses that can affect their work efforts (Jordan et al., 2002; Areni & Chirubolo, 2005). Job insecurity is becoming increasingly inevitable in the current business reality (Sverke & Hellfgre, 2002; Areni & Chirubolo, 2005). Unfortunately, the growing uncertainty of employment raises the dilemma of managing the productivity of employees (Areni & Chirubolo, 2005). Employees can mobilise to work hard to stay in the organisation; however, they can see that all efforts are self-defeating because the organisation makes redundancy decisions (Areni & Chirubolo, 2005). Moreover, employees often experience unfair treatment due to crises in the organisation, which further increases their job insecurity and consequently reduces their productivity (Brockner, 1990; Brockner et al., 1988; Brockner et al., 1992; Parker et al., 1997). On the other hand, the uncertainty of employment forces employees to start looking for a job because of a decreased trust in the organisation, which results in frequent ignorance at work, failure to meet the requirements, i.e., all those behaviours which are observed in the process of withdrawal from work and result in reduced job performance (Chirubolo & Hellgren, 2003; Davy et al., 1991; Ashford et al., 1989; Lim, 1996; Abramis, 1994; Lim,

1997; Probst, 2002). Based on the above consideration, the following hypothesis can be formulated:

H0: Problems with maintaining business continuity has a negative impact on the job performance of employees.

Problems with ensuring employee job performance under an organisational crisis necessitate solutions that would effectively counteract this phenomenon, threatening the achievement of organisational goals. In this perspective, it seems right to prove the special role of EDC in influencing the employee job performance under crises in the organisation.

The Model of Job Performance based on EDC was verified for a certain continuum of operating conditions under which contemporary organisations function. It features EDC as a factor underlining the need for employees to adapt to changes and shape their job performance. However, it seems that once the conditions become critical, the role of EDC gains even more significance. There is a difference between any conditions caused by even the most turbulent environment and critical conditions induced by the Black Swan phenomena (which are highly unpredictable; thus, organisations cannot prepare for them), which cause an exogenic crisis in the organisation (Nafday, 2009). From the management theory's perspective, the crisis is usually defined as "a low-probability, high-impact event that threatens the viability of the organisation and is characterised by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly" (Pearson & Clair, 2008, p. 3). However, an exogenic crisis caused by a Black Swan phenomenon extends much further. A Black Swan event is "the unexpected and unlikely but not an impossible catastrophe that no one ever seems to plan for, the things one does not know or does not know that one does not know" (Nafday, 2009). Such an unpredictable event that goes beyond what is normally expected of a situation and has potentially severe consequences, creating extremely critical operating conditions, which are a source of exogenic crisis in the organisation, is characterised by extremely high turbulence and unpredictability (Pearson & Clair, 2008).

Based on the literature (Durant et al., 2006; Taleb, 2007), many management models (and even paradigms) are no longer valid under such conditions necessitating their reinvention. It seems to be especially true in the case of the job performance paradigm and job performance models based on it. The

focus on appropriate stimulation of employee job performance is important for managers regardless of the organisational operation conditions due to its impact on organisational performance (Sriviboon, 2020). However, job performance becomes an especially crucial issue under extremely critical conditions, which are so dire and unpredictable (caused by a Black Swan phenomenon) that they are causing an exogenous crisis in the organisation and necessitate the reshaping of its operating method. Such conditions can disturb the sustainability of the organisation and even its survival by triggering the escalation of negative phenomena. Moreover, the characteristics of such a crisis are dynamically changing depending on its phase. It seems that the escalation phase is the most unpredictable, turbulent and dangerous. Therefore, retaining and maintaining employee job performance in an escalating crisis requires a different approach and is becoming a necessary condition for organisations to overcome the crisis and restore sustainability and balance (Marques-Quinteiro, 2019; Sahho & Abbas, 2019). The Job Performance Model based on EDC already features a factor stressing the need for employees to adapt to changing conditions. Therefore, it seems to be best-suited as a starting point for describing the mechanism of shaping job performance, especially during the initial phase of a crisis caused by a Black Swan phenomenon (remaining in line with the adaptive performance theory of Pulakos et al., 2000). It seems that mechanisms shaping job performance shown by the model verified for normal conditions would be reshaped in crisis, underlining much further the role of EDC and potentially changing the role of existing factors for organisational survival.

As a set of characteristics helping an employee to quickly integrate, build and reconfigure competencies to meet rapidly changing environmental conditions (Bieńkowska & Tworek, 2020), EDC will become the most expected set of features under crisis caused by a Black Swan phenomenon. Many researchers confirm that employee adaptation to a dynamic environment is key for organisational survival under a crisis. The higher is the level of adaptation, the greater is the complexity of the environment for an organisation to operate successfully (Chakravarthy, 1982; Bharosa & Janssen, 2010). Therefore, organisations with a high level of EDC are much more capable of adapting to changing conditions and employee job performance is more likely to be ensured during a crisis.

The employee sensitivity to changes occurring in the organisation during a crisis and high adaptability to these changes have been recognised as a key factor influencing employee job performance (Fuller et al., 2010; Bieńkowska & Tworek, 2020). Employees with a high level of EDC consider all changes as challenges, and their approach to adapting to these changes is highly proactive (Ployhart & Bliese 2006, Cullen et al., 2014). By adapting to them, employees are ready to take responsibility for the acquisition of the skills that are required by the organisation facing a crisis caused by a Black Swan phenomenon to work again as efficiently (Cullen et al., 2014) as possible for the organisation's success.

Therefore, considering the lack of detailed research on the relationship between EDC and job performance in times of a crisis (especially in its initial phase) caused by a Black Swan phenomenon, complex analysis is necessary and constitutes a part of the research gap considered in this article. Nevertheless, based on the above considerations, a general hypothesis is formulated on the relationship between EDC and job performance in times of crisis:

H1: EDC has a positive impact on job performance during a crisis caused by a Black Swan phenomenon.

The person–job fit (P–J fit) is considered in the literature as a rather complex construct, which generally determines the level of adjustment of employee characteristics to the work they do (Edwards, 1991; Kristof, 1996; Boon & Biron, 2016). Some research studies confirm that employees who are better fitted to their job are more satisfied with it (Caldwell & O'Reilly, 1990; Kristof-Brown et al., 2005; Park et al., 2011; Boon & Biron, 2016) and demonstrate a higher level of job performance (Bieńkowska & Tworek, 2020).

It is worth noting that the P–J fit is also highly susceptible to changes caused by a crisis in the organisation because the P–J fit is composed of two key elements, i.e., the demands–abilities fit, which refers to the degree to which an employee's job requirements are met, and the needs–supplies fit, which refers to the degree to which the individual needs of employees (values, objectives, interests, remuneration, benefit, and competence development) are met by the work they do (Muchinsky & Monahan, 1987; Edwards, 1991; Cable & DeRue, 2002). The changes triggered by a crisis introduce a new order in the organisation, which does not necessarily have to be consistent with the individual

needs of employees. For employees, rapidly changing working conditions during a crisis accumulate a sense of lost control and increased job insecurity, which translates into enormous stress (Theorell et al., 1988; Bolino et al., 2010; Portoghese et al., 2014). Any changes within the organisation (destabilising shocks) force employees from a state of balance (a high P–J fit) to a state of imbalance (Lee & Mitchel, 1994; Chilton et al., 2010). It does not mean that employees will not be able to re-establish their P–J fit balance, but it further underlines the difference in the re-establishing mechanisms (which influence job performance) compared to those used when employees are not forced out of their balance.

Some research informs that employees, who are better fitted for the job, provide organisations with more effective adaptation to changing working conditions (Dunham, 2001; Landsbergis, 2003; Arshadi & Damiri, 2013; Deniz et al., 2015). Even if the P–J fit is disturbed, with proper support, they are able to adapt more quickly to these changes and re-establish the P–J fit balance (Deniz et al., 2015). This allows to formulate the following hypothesis:

H2: The P–J fit has a positive impact on job performance during a crisis caused by a Black Swan phenomenon.

Work motivation is considered one of the main factors strengthening job performance, and this relationship has been known for many years in management (McGregor cited in Ogunna 1999; Azar & Shafiqhi, 2013; Olusadum & Anulik, 2018). It is also known that during the crisis, work motivation is strongly affected (Mehri et al., 2011) mainly because the organisation's functioning during a crisis is extremely difficult for employees and employers due to a significant impact on the work atmosphere (Závadský et al., 2015). Factors used to motivate employees must be reduced to stopping additional cost generation (Závadský et al., 2015, STATSOFT, 2004). Therefore, managers attempt to introduce motivational factors that require no additional costs (Hitka & Sirotiakova, 2011), such as changing internal communication, developing employees by involving the “tacit” knowledge potential in the organisation or improving processes as a trainer (Hitka & Sirotiakova, 2011), which may further influence the role of motivation for job performance.

Moreover, work motivation tends to naturally decline under such conditions, and it is hard for managers to force it back up again (Závadský et al., 2015). It is hard to motivate employees effectively when they experience increased levels of stress asso-

ciated with the job-loss fear and inability to perform under changed conditions, which in turn affect their sense of security in the organisation (Závadský et al., 2015). Job insecurity is defined as “perceived powerlessness to maintain desired continuity in a threatened job situation” (Greenhalgh & Rosenblatt, 1984, p. 438). It can be triggered by an exogenic crisis occurring in the organisation (Adkins et al., 2001). Such job insecurity causes a sense of powerlessness and loss of control, which may reduce work motivation (De Spiegelaere, 2014). This conclusion aligns with the much older Active Events Theory, which explains a decline in employee motivation in a crisis-affected organisation because of the impact of negative events that cause negative emotions (Hobfoll, 1989; Weiss & Cropanzano, 1996).

However, research conducted by Mehri et al. (2011) shows that the greatest decrease in work motivation caused by job insecurity is observed among employees who had worked in the organisation before the crisis. Employees who have just started their professional careers during the crisis do not show such a strong decrease in work motivation (Mehri et al., 2011). Nevertheless, work motivation is still an important factor influencing job performance during a crisis.

Job satisfaction most often refers to the degree to which employees like their work (Hackman & Oldham, 1974), i.e., the level of certain positive emotions towards work (Judge, 1994; Hirschfeld, 2000). Dawis (1992) considered that employees felt satisfied with their work when they had the opportunity to make full use of their abilities in the work environment. The organisation enables them to develop abilities and rewards them for effective work (Roberts & Foti, 1998).

Since most crises are hard to predict (especially a Black Swan event), and their duration is usually unknown, there is significant uncertainty about future financial results, and the organisation will keep costs to a minimum to survive in the market (Cao & Chen, 2016). Hence, the organisation undergoing a crisis is usually unable to ensure that all employee expectations are met. “In crisis situations, job satisfaction is likely to drop because of the combined influence of an increase in anxiety and a decrease in individuals’ perception of control over the environment” (Spector, 1986, after: Marques-Quinteiro et al., 2019 p. 5). The actions generating additional costs and not necessarily bringing measurable fast benefits to the organisation are limited initially. Therefore, many researchers (Markovits et al., 2014; Cahill et al.,

2015; Green et al., 2016) state that job satisfaction during a recession is distorted. Moreover, a decrease in job satisfaction is caused by negative effects of the recession, which result in a negative assessment of the organisation by employees and, consequently, a decrease in job satisfaction (Markovits, 2014). Based on research conducted during the crisis of 2009, the greatest impact on the reduction of job satisfaction was made by job loss and resignation from promotions (Markovits et al., 2014; Green et al., 2016). The increase in job insecurity as a factor reducing job satisfaction is often mentioned in the literature (Ashford et al., 1989; Sverke & Hellgren, 2002). However, some views suggest that a decline in job satisfaction during a crisis is not so obvious and occurs largely among low-skilled workers, whose job insecurity is very high (Pilipiec et al., 2019). Furthermore, it shows that the effect of crises is not limited to the level of job satisfaction but extends to the relationships of job satisfaction with other factors of the job performance model. The above considerations show that job satisfaction will also be strongly affected by the crisis in the organisation.

A different aspect is the impact of job satisfaction on job performance during a crisis, especially in its initial phase. Although it is more difficult to achieve high levels of employee job satisfaction during a crisis (Spector, 1986), as described above, it is worth taking care of, as there is no reason to reject the statements about the positive impact of job satisfaction on job performance during a crisis. It seems, however, that the sources of employee satisfaction in a crisis are the effects achieved despite the changing conditions in which the organisation functions, at the level of individual employees, teams and the organisation as a whole (Marques-Quinteiro et al., 2019). A sense of community and employee engagement can be triggers of job satisfaction and positively impact job performance.

Employees who work in teams facing difficult conditions feel a stronger social relationship, which often motivates them to continue working (Wessely, 2006; Hüffmeier & Hertel, 2011; Driskell et al., 2018). The meaning of work is yet another important aspect of job satisfaction under difficult conditions (Driskell et al., 2018). The worker who does meaningful work feels much more engaged in it, significantly reducing other stress factors that affect work negatively, such as the sense of job insecurity caused by a crisis (Britt et al., 2016; Driskell et al., 2018). The autonomy of work has a particularly positive impact on the meaning of work (Driskell et al., 2018). It strengthens job satis-

faction in the case of employees with highly developed self-leadership (Judge et al., 2001; Keith & Frese, 2005; Marques-Quinteiro et al., 2019). Self-leadership allows employees to evaluate their work more positively, particularly the tasks performed and existing conditions, which consequently may help the employees to look for the positive aspects of the crisis (Neck et al., 1995; Neck & Manz, 2010; Marques-Quinteiro et al., 2019). Due to highly developed self-leadership, employees are able to manage their own work with a high sense of autonomy, which motivates them to work and results in job satisfaction and job performance (Manz, 1986; Breevaart et al., 2015; Marques-Quinteiro et al., 2019). Moreover, it is also important to properly explain the tasks performed by employees. If the crisis brings about some restructuring and employees are obliged to take on new tasks, it is important to explain to them new organisational roles accordingly (Brown & Peterson, 1993; Marques-Quinteiro et al., 2019). All of this is done so that the individual can understand the rationale behind the entrusted responsibilities. This is because it is expected that over time, despite the ongoing crisis, employees will be able to evaluate their work more positively and enjoy it, which will strengthen job performance (Spector, 1986).

Employees engaged in their work are very valuable to the organisation, as engagement, understood as vigour and enthusiasm for work, has a positive impact on their job performance (Bandula et al., 2016).

However, employee work engagement in a crisis is not deterministically decreasing for all employees (Sverke & Hellgren, 2002; Moshoeu & Geldenhuys, 2015) due to a high level of employee identification and individual interpretation of the situation (Moshoeu & Geldenhuys, 2015). Various factors that strengthen engagement (affecting employees negatively and positively) may turbulently and visibly change its role in shaping job performance during various phases of a crisis. The employee reaction to the crisis that can either decrease or increase their work engagement largely depends on their position in the organisation and their work experience (Greenhalgh & Rosenblatt, 1984; De Witt, 1999, 2000). On the one hand, the literature confirms that in the face of a crisis, in which workers feel insecure about their employment and fear losing their job, employees cannot fully engage due to anxiety, anger or frustration (Wiesenfeld et al., 2001; Kiefer, 2005; Mauno et al., 2007; De Spiegelaere, 2014; Wang et al., 2015). On the other hand, Berg, Wrzesniewski & Dutton (2010) argued that job cuts associated with

the crisis might be treated by employees as a challenge that requires them to make a greater effort and perform more efficiently to ensure they stay in the organisation (Lu et al., 2014). Employees may feel that their increased engagement in work, effort and productivity can minimise the possibility of job loss in the face of an economic crisis (Moshoeu & Geldenhuys, 2015). Empirical studies confirm that employees of organisations in a crisis work harder and longer to prove their value to the organisation (Moshoeu & Geldenhuys, 2015; Luthans & Youssef, 2007). Moreover, employees engaged in their work are generally more persistent and proactive in reacting to organisational changes, especially those caused by a crisis (Macey et al., 2008; Bieńkowska & Tworek, 2020). They are willing to look for new and innovative methods of work, take care of development and quickly adapt to any changes in the organisation. Hence, it seems that the decline in work engagement during a crisis is not certain. This work-related attitude may become an especially important element of a job performance model in various phases of a crisis, as it may have the potential to positively influence other elements of the model, not only the job performance itself. Based on the above considerations, the following hypothesis can be formulated:

H3: Work motivation, job satisfaction, and work engagement have a positive impact on job performance during a crisis caused by a Black Swan phenomenon.

#### **1.4. JOB PERFORMANCE MODEL BASED ON EDC IN ORGANISATIONS UNDER A CRISIS CAUSED BY THE COVID-19 PANDEMIC**

Consequently, the above-mentioned constructs have an impact on employee job performance during a crisis. The Job Performance Model based on EDC proposed by Bieńkowska and Tworek (2020) concerns the EDC's role in shaping job performance and shows the mechanism behind the influence of EDC on job performance. Therefore, it appears logical for the Model to change in a crisis (especially in its initial phase). Usually, a high unpredictability, dynamic course, extreme speed and intensity faced during this crisis phase means that an organisation has significant difficulties planning its activities (Hackman & Oldham, 1974). In this phase, organisations are primarily focused on a flexible and immediate change to their functioning (Pulakos et al., 2000; Cao & Chen, 2016), to ensure the continuity of existence (Cao & Chen, 2016). Unfortunately, in this crisis

phase, employees may find it difficult to adapt and take inappropriate actions to prevent losses and achieve results (Sotarauta, 2016).

In such a case, the non-implementation of changes in the organisational operation or continued operation based on "old" procedures, assuming that employee job performance remains unchanged (stiffening/freezing both methods of operation and blocking the redefinition of objectives) frequently results in a counterproductive effect. This means that under a crisis caused by a Black Swan phenomenon, the overriding issue is the change and adaptation of the organisation and its employees to the new operating conditions. Therefore, it seems that the key for achieving the goals of the organisation is the proper use of EDC, adjusting the P-J fit of employees and awakening their engagement in the change process and the achievement of job performance. Hence, it should also be stated that work motivation and job satisfaction are of little importance in this process, although they are essential elements for shaping job performance.

The role of the P-J fit as a mediator of the relationship between EDC and job performance seems to be especially important during a crisis caused by a Black Swan phenomenon. Employees with high levels of EDC (Riemenschneider et al., 2002; Chilton et al., 2010) experience their P-J fit disturbance only for a short period of time, during the transition to a new state of balance or their P-J fit is not disturbed at all. Such employees may treat any changes in the organisation as challenges and an opportunity to improve their knowledge and competences (Zabusky & Barley, 1996). The degree of fulfilment of the needs-supplies fit will be maintained or even increase thanks to dynamic changes occurring during the crisis. This will positively translate into an increase in the P-J fit, influencing job performance even more, being a mediator of its relationship with EDC.

The engagement of employees in their tasks and the process of necessary changes seems to be necessary to reduce the P-J fit deficit by using EDC in the initial phase of the crisis. The efficiency of the adaptation activities undertaken in the organisation and the proper use of the EDC potential in this process depend on whether employees feel engaged. However, it seems that a satisfactory level of work engagement is not that hard to achieve during a crisis. Spurr and Straub (2020) underlined that during a crisis caused by an unpredictable Black Swan phenomenon, employees tended to feel prouder about their ability to continue working and contributing to society,

which strengthened their engagement. Their EDC enables them to work better under such conditions and allows stronger feeling, demonstrating that work engagement translates into job performance during a crisis. Moreover, Risley (2020) stated that with proper inspiration, work engagement supported by adaptability abilities (like EDC) is definitely aimed at ensuring job performance during a crisis, which calls for quick adaptation. The empirical study performed by Song et al. (2020) confirmed that the levels of work engagement raised during a crisis caused by a Black Swan phenomenon, and, surprisingly, it was higher among employees forced to work from home than among those who remain in offices. It shows that work engagement has the potential to build job performance during a crisis, especially when it mediates the relationship between EDC and job performance, strengthening it.

Based on the above considerations, the following hypothesis can be formulated:

H4: EDC influences job performance through the P-J fit and work engagement during a crisis caused by a Black Swan phenomenon.

## 2. RESEARCH METHODOLOGY

Empirical research based on a survey (using the CAWI method) was conducted to verify the proposed hypothesis and test whether the job performance model based on EDC will change its structure (and internal relations). The sample was selected purposefully and covered organisations operating under critical conditions of the COVID-19 pandemic in Italy (EU) in the early phase of the pandemic. Italy experienced severe consequences of the COVID-19 pandemic, especially at the beginning, as the most surprised country unable to predict the chain of events. There was no time to prepare for possible issues related to everyday functioning, and the crisis

hit a vast majority of organisations. The literature on the early phase of the pandemic often uses such samples (Ghislieri et al., 2021; Molino et al., 2020). Therefore, the choice of the country was deliberate, as it was significantly influenced by the COVID-19 pandemic, which during the performed study, caused an escalating crisis in organisations operating in that country. The outbreak of coronavirus SARS-CoV-2 (causing the COVID-19 pandemic) has disrupted the world at the turn of 2019/2020. Before the end of March 2020, it spread globally, hitting all the major economies of the world almost at the same time, which was exceptional. It is an example of a Black Swan phenomenon and, hence, it may be used to verify the hypotheses concerning the changes within the Job Performance Model based on EDC during a crisis caused by such phenomena occurring in an organisation.

The research survey was taken on March 18–22, 2020, few days after the lockdown restrictions were introduced (full lockdown, with the number of COVID-19 cases exceeding 40 000 and the number of deaths from COVID-19 exceeding 4000, and all organisations forced to introduce remote work if possible). Conditions of organisational functioning radically changed, which gave the authors the possibility to test the model under critical conditions that escalated the crisis for most organisations. The characteristics of the sample are presented in Table 1. The sample comprised 115 organisations from Italy. The survey was filled in by managers of the organisations. Several control variables were introduced to confirm the proper diversity of the sample (size and time of operations of the organisation, industry type). Additionally, to make sure that the organisations are meeting the assumption of operating under critical conditions, additional questions concerning the negative influence of the COVID-19 pandemic on their operations were included in the research. All organisations declared an enormous influence of the critical

Tab. 1. Size and time of operation of organisations included in the sample

ORGANIZATION SIZE	TIME OF OPERATIONS				TOTAL
	Less than a year	1 to 5 years	5 to 10 years	More than 10 years	
Micro (below 11 people)	6	5	4	4	19
Small (11–50 people)	4	15	7	1	27
Medium (51–250 people)	1	8	20	7	36
Large (above 250 people)	2	4	14	13	33
Total	13	32	45	25	115

Source: (Bieñkowska et al., 2020).

Tab. 2. Descriptive statistics and reliability of scales of identified variables

NO.	VARIABLE	NO. OF SCALES	ALPHA-CRONBACH	M	SD
1	Work motivation	1	--	3.39	0.96
2	Job satisfaction	1	--	3.44	1.01
3	Work engagement	1	--	3.40	0.93
4	P-J fit	1	--	3.57	0.92
5	Job performance	4	0.909	3.39	0.88
6	EDC	4	0.853	3.46	0.74

conditions of the pandemic on all areas of the organisation's operations, including job performance.

### 2.1. OVERVIEW OF THE VARIABLES

The following variables were analysed to verify the model in the crisis escalation phase influenced by critical conditions of organisations functioning during the COVID-19 pandemic:

Work motivation was measured using a 5-point Likert scale, based on a single-item question "Employees in our company are willing and ready to carry out the tasks entrusted to them".

Job satisfaction was measured using a 5-point Likert scale, based on a single-item question "Employees in our company are happy being a member of this company, they do not think about resigning from work".

Work engagement was measured using a 5-point Likert scale, based on a single-item question "Employees in our company are fully engaged in their job at their workplace. They feel bursting with energy and feel strong and vigorous".

The P-J fit was measured using a 5-point Likert scale, based on a single-item question "The knowledge, skills and abilities of employees in our company, fully fit the requirements of their job position. Employees in our company are fully prepared to perform their tasks".

Job performance was measured using a 5-point Likert scale, according to the definition by Campbell (1990) and Borman (1993). The scale contained four items referring to the quality, timeliness, efficiency and effectiveness of the employee tasks at the workplace.

EDC was measured using a 5-point Likert scale, based on four items connected to four dimensions of EDC.

## 3. RESEARCH RESULTS

The study was amended by control variables, which were used to verify whether the studied organisations were actually impacted by the COVID-

19 pandemic. Questions concerning the negative influence on various aspects of the organisation's operations were asked. In all cases, respondents confirmed that organisations were operating in a crisis caused by the COVID-19 pandemic. Hence, the assumed verification is possible in the chosen sample. To verify the H0 hypothesis and confirm that problems with maintaining business continuity in the organisation (as the confirmation of crisis occurrence) were indeed influencing job performance, the correlation analysis was performed. The analysis showed a correlation between the occurrence and strength of problems with maintaining business continuity significantly influencing job performance ( $r = -0.801$ ,  $p < 0.001$ ). Therefore, the H0 can be accepted, stating that problems with maintaining business continuity have a negative influence on employee job performance.

Next, linear regression analysis was performed to verify hypotheses H2 and H3. The results of the analysis are presented in Table 3. For every independent variable, a separate linear regression model was built. Each of them was statistically significant and showed a cause-effect relationship between an independent and dependent variable. Hence, H2 and H3 hypotheses can be accepted.

The results allowed verifying the internal structure of the Job Performance Model based on EDC under given critical conditions. Hence, as a next step, to verify the H1-Hx hypothesis, the path analysis was executed using SPSS AMOS. Hence, initially, the r-Pearson correlation analysis was performed to establish relationships between analysed variables. The results presented in Table 4 confirm that the correlation was statistically significant and mild or strong in all cases. Based on the results, the place of each variable and the direction of each relationship were established using path analysis. It was established that the model in its original form was defined and significant for the obtained sample, however showing that work motivation ( $p = 0.063$ ) and job satisfaction ( $p = 0.162$ ) had statistically insignificant relationships

Tab. 3. Linear regression analysis of four models using job performance as a dependent variable

INDEPENDENT VARIABLES	BETA	STANDARD ERROR	P VALUE	R <sup>2</sup>	F-SNEDECOR
EDC	0.453	0.106	0.000	0.198	F(1,109) = 28.085; p < 0.001
P-J fit	0.425	0.085	0.000	0.181	F(1,110) = 24.552; p < 0.001
Work motivation	0.433	0.079	0.000	0.180	F(1,111) = 25.630; p < 0.001
Job satisfaction	0.366	0.080	0.000	0.126	F(1,109) = 17.161; p < 0.001
Work engagement	0.422	0.082	0.000	0.171	F(1,111) = 24.020; p < 0.001

Tab. 4. Correlation weights

		WORK MOTIVATION	JOB SATISFACTION	WORK ENGAGEMENT	P-J FIT	EDC
Job satisfaction	r	0.668**	1			
	Sig.	0.000				
	N	113	113			
Work engagement	r	0.641**	0.671**	1		
	Sig.	0.000	0.000			
	N	113	113	113		
P-J fit	r	0.508**	0.653**	0.477**	1	
	Sig.	0.000	0.000	0.000		
	N	113	113	113	113	
EDC	r	0.580**	0.748**	0.587**	0.654**	1
	Sig.	0.001	0.000	0.000	0.000	
	N	113	113	113	113	113
Job performance	r	0.433**	0.483**	0.422**	0.425**	0.451**
	Sig.	0.001	0.000	0.000	0.000	0.000
	N	113	113	113	113	113

Tab. 5. Regression weights

			ESTIMATE	S.E.	C.R.	P
P-J fit	<---	EDC	0.836	0.091	9.183	***
Work engagement	<---	P-J fit	0.496	0.085	5.813	***
Job performance	<---	Work engagement	0.400	<u>0.081</u>	4.939	***

Tab. 6. Standardised total effects

	EDC	P-J FIT	WORK ENGAGEMENT
P-J fit	0.836	0.000	0.000
Work engagement	0.415	0.496	0.000
Job performance	0.166	0.198	0.421

Tab. 7. Standardised direct effects

	EDC	P-J FIT	WORK ENGAGEMENT
P-J fit	0.836	0.000	0.000
Work engagement	0.000	0.496	0.000
Job performance	0.000	0.000	0.421

with other elements of the model. Therefore, to obtain a valid model, those variables were removed from the model, which is consistent with the assumptions presented in Chapter 2. The corrected model was verified as defined and well-fitted ( $\text{Chi}^2(3) = 33.123$ ,  $p < 0.001$ ;  $\text{CFI} = 0.779$ ;  $\text{RMSEA} = 0.297$ ). An overview of the changed model is presented in Table 5. Tables 6 and 7 contain the values of total and direct effects occurring among variables within the model. The obtained results allow accepting hypothesis H4. Moreover, the same model and similar results were obtained for every group of organisations included in the sample (the specificity of organisations has not changed the shape of the model).

## 4. DISCUSSION

The obtained results show differences between the current Job Performance Model based on EDC for organisations operating under a crisis escalation and the model initially obtained by the authors for organisations operating in normal conditions. Although there is a relationship between work motivation, job satisfaction and job performance (verified by linear regression analysis), the influence of work engagement on job performance is much stronger. Its high strength during the crisis caused changes in the structure of the model. Most importantly, according to the obtained sequentially mediated model:

- EDC impacts employee job performance.
- Work motivation is no longer a statistically significant mediator within the model.
- Job satisfaction is no longer a statistically significant mediator within the model.
- The strength of work engagement as a mediator in the model is higher.

The article mainly aimed to examine the structure of the Job Performance Model based on EDC during a crisis in an organisation due to a Black Swan phenomenon, showing changes in the mechanism shaping employee job performance. In particular, the examination focused on the influence of EDC, work motivation, job satisfaction and work engagement on

job performance during a crisis. Based on the linear regression analysis and path analysis, the new version of the model was obtained. The Job Performance Model based on EDC modified for the initial crisis phase in an organisation due to a Black Swan phenomenon is presented in Fig. 1.

The obtained results confirmed that during the crisis caused by a Black Swan event, traditional models and paradigms of management no longer worked the same (Bieńkowska, Tworek & Zabłocka - Kluczka, 2020). Due to the predicted disruption of job performance in times of crisis, the Job Performance Model based on EDC was also verified to have a different structure (Fig. 2). As predicted, work motivation and job satisfaction were proven to be no longer relevant elements of the model among organisations experiencing the crisis caused by a Black Swan phenomenon. The new version of the model obtained for organisations operating under the Black Swan phenomenon that affected the world in 2020, i.e., the COVID-19 pandemic, was statistically significant without work motivation and job satisfaction. It was also proven that the P-J fit still provided a link between EDC and job performance through strengthening work engagement.

In this research, the crisis caused by a Black Swan event was only a situational factor in which the model was set. Thus, the focus should not be only on the direct impact of the crisis on work engagement. However, it is not surprising that in the context of a crisis, in many cases, work engagement is stronger. This is an important observation, as in the proposed model, the work engagement continues to be strengthened by the link between EDC and job performance, i.e., the P-J fit. Employees who fit the job better can perform their tasks better. In times of crisis, employees may experience that their P-J fit balance has been disturbed. However, employees better fitted for the job can manage the dynamic changes in the organisation much better (Deniz et al., 2015). As a consequence, EDC-supported employees recover the P-J fit balance much faster, which is affected by the changed conditions of work in the organisation during the crisis triggered by a Black Swan phenomenon.

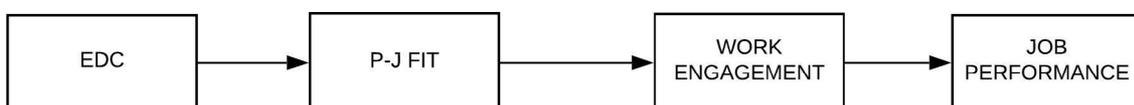


Fig. 1. Shape of the Job Performance Model based on EDC in organisations under a crisis

It is, therefore, important for organisations to be aware of the changes in the basic models shaping employee job performance and to know how to form those factors as they influence organisational performance. Such awareness is crucial for all types of organisations (in case of their size, time of operations etc.), as the mechanism enabling and maintaining employee job performance is changed regardless of their specificity.

## CONCLUSION

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The paper aimed to verify the Job Performance Model based on EDC and explain the mechanisms of shaping job performance under a crisis in an organisation due to a Black Swan phenomenon. This issue is particularly relevant in view of the current COVID-19 pandemic, which forced organisations to reshape their operations and employees to adjust to ensure the proper level of job performance.

Employee job performance is a particularly important factor during a crisis, as it determines the level of organisational performance and enables its survival in the market. The research confirmed the mechanism for ensuring job performance through EDC changes during a crisis. Under normal operating conditions, the relationship between EDC and job performance is mediated by the P–J fit, work motivation, job satisfaction and work engagement. The performed empirical research on employee job performance in organisations affected by extreme conditions resulting from the COVID-19 pandemic (an example of a Black Swan phenomenon) demonstrated that work motivation and job satisfaction were no longer significant mediators in the model. However, the P–J fit remained a link between EDC and work engagement in the process of shaping job performance.

Empirical research conducted on Italian organisations affected by the crisis caused by the COVID-19 pandemic shows that all examined work-related attitudes retain their influence on employee job performance, which means that during a crisis, solutions in the field of HRM should strengthen work motivation, job satisfaction and work engagement. At the same time, the attention is drawn by the highest values of the correlation coefficient between EDC and job performance, as well as the R<sup>2</sup> coefficient of the regression model for EDC and job performance. This may indicate the critical role of EDC in shaping job performance during such a crisis. At the same time,

the Job Performance Model based on EDC changes its shape. It turns out that in the face of a crisis (especially in its initial phase), EDC primarily affects the P–J fit, which is not surprising because the demands–abilities balance gets disturbed. This is a key issue that can be restored thanks to EDC. Then, due to the engagement of employees, the planned job performance can be restored.

Therefore, the paper contributes to the crisis–state theory through initial verification of the job performance paradigm in organisations undergoing a crisis caused by a Black Swan phenomenon. It also offers practical implications as it proposes mechanisms potentially helping organisations to survive through shaping employee job performance under a crisis. It is especially important as a crisis, which is unpredictable, disturbs proper operations and employees are forced to change their working methods. Every mechanism showing organisations how they ensure their proper work seems to be important for them to ensure their continuity.

The obtained results allowed achieving the aim of this article — to verify changes in the Job Performance Model based on EDC occurring in organisations under a crisis caused by a Black Swan phenomenon. However, this research topic is not fully exhausted in the article and has some limitations. The research was conducted in a limited group of organisations operating in Italy, the country among the most affected by the pandemic. However, the obtained results should be treated as a pilot study. This research should be extended to other Black Swan phenomena causing crises in organisations to inform full conclusions on the subject.

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