



## MANDATORY DIGITAL CHANGE AS A STAGED ORGANIZATIONAL INFORMING PROCESS: A TIME-LAGGED STUDY

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### ABSTRACT

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aim/Purpose  | This study examines how employees evaluate mandatory digital change when technology use is imposed rather than voluntarily adopted.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Background   | The paper conceptualizes mandatory digital change as a staged organizational informing process in which organizational signals shape expectations, post-implementation positive disconfirmation of expectations, attitudes toward the technology, and evaluation of the broader change.                                                                                                                                                                                                                                                                                                   |
| Methodology  | A time-lagged field study was conducted in a public-sector organization that migrated from Microsoft Office to OpenOffice through a staged hybrid transition. The migration concerned desktop applications for word processing, spreadsheets, and presentations; email and enterprise collaboration platforms were not replaced. Supervisor support and organizational support for innovation were measured before implementation; disconfirmation of expectations, attitudes, and change evaluation were measured after implementation. The final matched sample included 115 employees. |
| Contribution | The study contributes to informing science by distinguishing pre-implementation informing conditions, post-implementation expectation disconfirmation, and acceptance beyond compliance in a mandatory technology implementation.                                                                                                                                                                                                                                                                                                                                                         |
| Findings     | Supervisor support positively predicted ease-of-use disconfirmation, whereas organizational support for innovation unexpectedly predicted ease-                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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|                                   |                                                                                                                                                                                                                                                                                                               |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | of-use disconfirmation negatively. Ease-of-use disconfirmation strongly predicted usefulness disconfirmation and was marginally associated with attitudes toward the software. Attitudes toward the software positively predicted the overall evaluation of the organizational change.                        |
| Recommendations for Practitioners | Organizations should design the informing architecture of mandatory digital change by calibrating expectations, involving supervisors, sustaining implementation support, and monitoring employee reactions after deployment.                                                                                 |
| Recommendations for Researchers   | Future research should model expectations, perceived system performance, and disconfirmation of expectations separately, and should examine how proximal and distal informing conditions interact with implementation quality.                                                                                |
| Impact on Society                 | The study highlights that public-sector digital transformation depends not only on technical deployment and cost reduction but also on how employees are informed, supported, and enabled to incorporate new systems into their daily work.                                                                   |
| Future Research                   | Replication in larger samples, multiple organizations, and more complex technologies is needed. Future research should also distinguish implementation-specific support from general organizational support for innovation and compare immediate replacement, parallel use, and hybrid transition strategies. |
| Keywords                          | mandatory technology adoption, digital transformation, organizational informing process, informing science, technology acceptance, disconfirmation of expectations, supervisor support, organizational support for innovation                                                                                 |

## INTRODUCTION

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Organizations increasingly introduce information technologies to modernize internal processes, reduce costs, improve coordination, and redesign how work is performed. Such initiatives are often described as digital transformation, but they rarely concern only technological transformation. The introduction of a new information system modifies routines, communication patterns, perceived competence, task interdependence, and the relationship between employees and the organization. For this reason, the success of a digital transformation depends not only on whether a system is formally deployed, but also on how well employees understand, experience, and evaluate the change (Mergel et al., 2019; Vial, 2019).

This issue becomes especially salient when technology adoption is mandatory. In many organizations, employees do not decide whether or not to adopt a new system. Quite often, they are only required to use it once deployment is complete. Such a situation is common in public administrations, hospitals, universities, large private organizations, professional service firms, and other highly institutionalized settings. In these contexts, the central question is not whether employees will use the system, because use is imposed by organizational rules and by the removal of previous systems. The more informative question is whether employees are able to understand the change, whether they will incorporate the new system into their daily work, or whether they will evaluate the technology and the organizational decision to adopt it positively.

For this reason, a mandatory technology implementation is better understood as an organizational informing process than as a purely individual adoption decision. Employees should receive information about why the change is occurring, how the new system should be used, what support is

available, and how the system is expected to affect their work. The same system may therefore be evaluated differently depending on the quality, credibility, and continuity of the environment that informs implementation.

Informing science, the transdiscipline proposed by Cohen (1999), provides a useful lens for this problem because it focuses on relationships among providers, technology experts, clients or users, and contexts (Cohen, 2009; Gill & Bhattacharjee, 2007). From this perspective, a mandatory digital implementation is not only the delivery of a technological artifact. It is a situated process in which employees receive signals, form and compare their expectations with the actual experience of the new system, and revise their judgments about both the technology and the organizational change. The organization is therefore not merely a technology provider. It is an informing system that shapes the interpretive conditions under which employees encounter the new technology.

This perspective complements, but also reframes, technology acceptance research. The Technology Acceptance Model (TAM) posits that perceived ease of use and perceived usefulness shape attitudes toward a technology and subsequent intention to use it (Davis, 1989; Venkatesh & Davis, 2000). However, when use is compulsory, actual use is no longer a sufficient indicator of acceptance. Employees may use a system because they must, while still experiencing frustration, disappointment, or resistance (Brown et al., 2002). Under mandatory-use conditions, attitudes toward the technology and evaluations of the broader organizational change become more informative outcomes than behavioral use alone.

Expectation-confirmation/disconfirmation theory adds a dynamic element to this reasoning. Rather than asking only whether a system is perceived as easy or useful at one point in time, disconfirmation concerns whether the system is experienced as better or worse than expected after use (Bhattacharjee, 2001). In these cases, expectations are not formed in isolation. Managerial communication, training, peer discussions, supervisor behavior, organizational climate, and prior experience with similar systems shape them. Post-implementation confirmation or disconfirmation of expectations, therefore, reflects not only technical performance but also the match or mismatch between the organization's informing signals and employees' subsequent experience. In the present study, disconfirmation of ease of use and disconfirmation of usefulness are defined as employees' post-implementation judgments that a new technology (in this case, new software) was easier or more useful than expected.

One relevant setting is the mandatory migration from proprietary to open-source software. Organizations may adopt open-source solutions to reduce licensing costs, increase technological independence, support customization, facilitate reuse across units or institutions, or because of political and managerial commitment and IT capabilities (Cassell, 2008; Hauge et al., 2010; Nagy et al., 2010; Rentocchini & Tartari, 2010; Van Loon & Toshkov, 2015). Yet strategic reasons for adoption do not automatically translate into favorable employee reactions. For employees, the challenges of software migration are experienced in everyday work: changed interfaces, revised routines, compatibility problems, training demands, temporary loss of efficiency, and uncertainty about whether familiar tasks can be performed as before. However, less is known about how organizational conditions prior to implementation shape employees' disconfirmation of expectations and evaluations of the change following implementation of the new system. It is, in fact, in principle, possible that a technology project formally succeeds in deployment while still producing weak acceptance, negative attitudes, or poor evaluation of the organizational change.

The present study addresses this issue by examining a mandatory software migration within a public-sector organization. The organization migrated from a proprietary office suite to an open-source alternative through a staged process that included communication, training, a temporary coexistence of the old and new software, and the eventual removal of the proprietary suite. Using a time-lagged design, the study investigates whether supervisor and organizational support for innovation, measured prior to implementation, predict employees' post-implementation disconfirmation of the expected

ease of use and usefulness. It then examines whether these disconfirmation beliefs are associated with attitudes toward the new software and whether such attitudes predict employees' overall evaluation of the organizational change.

The model is organized around three stages of mandatory digital change as an informing process. First, before implementation, employees are exposed to organizational informing conditions, including proximal support from supervisors and broader innovation-oriented organizational signals. Second, after implementation, employees compare their prior expectations with their actual experience of the system, producing ease-of-use and usefulness disconfirmation of expectations. Third, these disconfirmation beliefs are associated with attitudes toward the mandatory technology, which in turn inform employees' overall evaluation of the organizational change.

The study contributes to informing science and technology implementation research in three ways. First, it conceptualizes mandatory digital change as a staged organizational-informing process, thereby shifting attention from imposed use to acceptance beyond mere compliance. Second, it distinguishes between proximal informing support, represented by supervisor support, and distal organizational support, represented by organizational informing signals and support for innovation. Third, it shows that innovation-oriented organizational signals may be ambivalent: these signals can express openness to change, but they may also raise expectations that, when implementation does not match the organization's innovation-oriented message, result in negative disconfirmation.

## **THEORETICAL BACKGROUND AND HYPOTHESES**

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### ***MANDATORY DIGITAL CHANGE AS A STAGED ORGANIZATIONAL INFORMING PROCESS***

Implementation of a new digital technology is often presented in terms of system functionality and efficiency. However, when implementation is mandatory, employee reactions depend on a broader process. In terms of informing science, the organization is not only a technology provider but also an informing system that connects information sources, technological artifacts, users, and implementation contexts (Cohen, 1999, 2009; Gill & Bhattacharjee, 2007). In a mandatory software migration, this informing system includes formal communication, training sessions, technical assistance, supervisory guidance, peer-level sensemaking, and the broader organizational climate that signals whether innovation is genuinely supported. Employees' post-implementation evaluations, therefore, reflect both their experience with the system and the organizational conditions that make it understandable, usable, and meaningful.

This staged interpretation is useful because mandatory digital change unfolds over time. Before implementation, employees are exposed to organizational signals that shape their expectations. During implementation, they encounter training issues, technical difficulties, support challenges, and informal interpretations of the change. After implementation, they compare their experience with prior expectations and evaluate both the technology and the organizational decision. The model tested in this study follows this sequence, linking pre-implementation informing conditions to post-implementation disconfirmation of expectations and, subsequently, to attitudes and change evaluation.

This perspective is consistent with organizational change research, which shows that employees' reactions to change are shaped by support, communication, leadership behavior, and perceived implementation quality (Choi, 2011; Fernandez & Rainey, 2006; Fuchs & Prouska, 2014; Gigliotti et al., 2019). It also extends technology acceptance reasoning by embedding perceived ease of use and usefulness within the social and organizational context in which employees learn, interpret, and apply the technology. In mandatory digital change, acceptance is therefore not simply a property of the user-system dyad, but an outcome of the broader organizational informing environment.

The informing science perspective and organizational change theory address complementary levels of mandatory digital transformation. Informing science directs attention to the architecture through

which information about the change is produced, transmitted, interpreted, and translated into system use: the sources, channels, content, technological artifact, clients, and context of informing. Organizational behavior and change research explain how employees respond to that architecture through expectation formation, sensemaking, perceived support, attitudes, and change evaluation. Integrating these perspectives, therefore, makes it possible to examine not only whether information is provided, but also how the organizational conditions surrounding that information shape employees' experience of the technology and their evaluation of the broader change.

In the present case, senior management and the external IT provider were the main formal informing sources; employee representatives provided a limited consultative channel before the final managerial decision; supervisors acted as proximal informing agents; plenary briefings and training sessions were formal informing channels; OpenOffice was both the technological artifact and the object of evaluation; and employees were the clients required to incorporate the suite into their daily work.

### ***PRE-IMPLEMENTATION INFORMING CONDITIONS: PROXIMAL SUPPORT AND DISTAL ORGANIZATIONAL SIGNALS***

A staged informing-process model requires attention to the organizational conditions that precede employees' direct experience with the system. These conditions help employees to anticipate what the implementation will be like, whether the organization will support them, and whether the new system is likely to improve their work. In the present study, two pre-implementation conditions are considered: supervisor support and organizational support for innovation.

These two conditions represent different levels of the organizational informing environment. Supervisor support is proximal because supervisors are close to employees' daily work and can provide concrete help, clarification, and local sensemaking. Organizational support for innovation is more distal because it represents a broader signal about the organization's values, priorities, and presumed capability to support new ways of working. Both may be related to the disconfirmation of expectations, but they may do so through different mechanisms. Proximal support may help employees manage the practical effort of learning the system, whereas distal innovation signals may shape broader expectations about the quality and value of the implementation.

### ***SUPERVISOR SUPPORT AS PROXIMAL INFORMING SUPPORT***

Supervisor support refers to employees' perception that their direct supervisor values them, provides help, and facilitates their work (Eisenberger et al., 1986; Griffin et al., 2001). In organizational change, supervisors occupy a crucial position because they translate abstract organizational decisions into concrete work practices. They can provide information, reduce uncertainty, legitimize the change, help employees cope with difficulties, and signal whether the organization is attentive to employees' needs (Choi, 2011; Neves, 2011).

In the context of mandatory digital change, supervisors can be conceptualized as proximal informing agents. They help employees interpret the change, identify available resources, understand what is expected, and manage the practical difficulties of learning a new system. Research on technology adoption has shown that managerial and social support can influence perceived ease of use and usefulness in several technological contexts, including e-learning, telemedicine, sales technologies, and enterprise systems (Bhattacharjee & Hikmet, 2007; Kowitlawakul, 2011; Lee et al., 2010; Schillewaert et al., 2005; Weng et al., 2015).

This role should be particularly relevant for ease-of-use disconfirmation. Learning to use a new software suite involves uncertainty, errors, temporary inefficiency, and requests for assistance. Employees who perceive their supervisors as supportive may be more likely to ask questions, persist through difficulties, and interpret the learning process as manageable. Consequently, they may experience the system as easier than initially expected. The absence of such support might instead lead employees to perceive the system as more difficult than expected. The relationship with usefulness disconfirmation is also plausible, as supervisors can help employees understand how the software supports work

objectives or improves efficiency. However, usefulness may depend more strongly on system functionality and task fit. Thus, we hypothesize that:

**H1a:** Supervisor support before implementation will be positively associated with post-implementation ease-of-use disconfirmation.

**H1b:** Supervisor support before implementation will be positively associated with post-implementation usefulness disconfirmation.

### ***ORGANIZATIONAL SUPPORT FOR INNOVATION AS A DISTAL INFORMING SIGNAL***

Organizational support for innovation refers to employees' perception that the organization provides practical support for new ideas and improved ways of working (Anderson & West, 1998; West, 1990). Organizational climate research emphasizes that employees' perceptions of organizational practices, procedures, and priorities shape how they interpret organizational events (Schneider et al., 2013). In an organization perceived as supportive of innovation, new ways of working should be viewed as legitimate, valued, and practically supported. Prior research has linked support for innovation to organizational learning and innovation-related outcomes (Devloo et al., 2016; Hsiao et al., 2014).

From an informing science perspective, organizational support for innovation can be interpreted as a distal informing signal. It communicates what the organization values and what employees may reasonably expect when a new system is introduced. Employees who perceive the organization as supportive of innovation may therefore expect digital change to be implemented in a coherent, well-resourced, and improvement-oriented way. Such a climate may also make the rationale for the new system more credible, because the implementation is interpreted as part of a broader organizational orientation toward new and improved ways of working rather than as an isolated technical imposition. This reasoning suggests that organizational support for innovation should be associated with a positive disconfirmation of post-implementation expectations. When employees perceive that their organization provides practical support for innovation, they may be more likely to approach the new system with confidence in organizational backing, interpret implementation difficulties as manageable and temporary, and recognize the potential value of the system for improving work practices. This logic is consistent with innovation implementation research, which emphasizes that successful implementation depends not only on the innovation itself but also on the organizational context and support structures that enable employees to use it effectively (Klein et al., 2001). Accordingly, employees who perceive stronger organizational support for innovation prior to implementation should be more likely to find the new software easier and more useful than initially expected. Thus, we hypothesize that:

**H2a:** Organizational support for innovation before implementation will be positively associated with post-implementation ease-of-use disconfirmation.

**H2b:** Organizational support for innovation before implementation will be positively associated with post-implementation usefulness disconfirmation.

### ***POST-IMPLEMENTATION DISCONFIRMATION AS THE COMPARISON POINT BETWEEN ORGANIZATIONAL SIGNALS AND USE EXPERIENCE***

After implementation, employees compare their prior expectations with their actual experience of the system. In the present study, disconfirmation of ease of use and usefulness is defined as employees' post-implementation judgments that the new software was easier or more useful than expected. These beliefs are the point at which organizational signals and system experience intersect. They do not merely capture whether the software is objectively easy or useful; they capture whether the software experience exceeds or falls short of what employees had been led to expect.

TAM posits that perceived ease of use and perceived usefulness are central determinants of attitudes toward a technology (Davis, 1989). Perceived ease of use refers to the belief that using a system requires little effort, whereas perceived usefulness refers to the belief that using the system improves job performance. In the original TAM formulation, perceived ease of use also contributes to perceived usefulness because a more user-friendly system allows users to accomplish tasks with lower cognitive and operational costs (Davis, 1989). Later models, including TAM2 and TAM3, expanded the range of antecedents and placed stronger emphasis on intention and use (Venkatesh & Bala, 2008; Venkatesh & Davis, 2000).

The same logic can be extended to expectation disconfirmation. If employees find the new software easier to use than expected, they may also be more likely to find it more useful than expected, because lower effort facilitates task accomplishment and reduces the perceived costs of adaptation. This relationship is particularly relevant in mandatory digital change, where employees cannot avoid the system and must integrate it into everyday work. Thus, we hypothesize that:

- H3:** Post-implementation ease-of-use disconfirmation will be positively associated with post-implementation usefulness disconfirmation.

### ***ACCEPTANCE BEYOND COMPLIANCE: ATTITUDES TOWARD THE SOFTWARE AND CHANGE EVALUATION***

In voluntary contexts, intention to use is theoretically important because it reflects the user's willingness to adopt the technology. In mandatory contexts, intention and use are constrained by organizational decision. Employees have to use the system because no alternative is available (Brown et al., 2002). Therefore, attitudes toward the technology capture acceptance beyond behavioral compliance.

In the TAM, attitudes toward a technology are shaped by beliefs concerning ease of use and usefulness (Davis, 1989). The same logic can be extended to expectation disconfirmation. If employees find the system easier and more useful than expected, they should develop more favorable attitudes toward it (and vice versa in case of negative disconfirmation). Ease-of-use disconfirmation may reduce frustration, perceived effort, and anxiety related to the transition. Usefulness disconfirmation may increase the perception that the change has practical value for daily work. Thus, we hypothesize that:

- H4a:** Post-implementation ease-of-use disconfirmation will be positively associated with attitudes toward the new software.
- H4b:** Post-implementation usefulness disconfirmation will be positively associated with attitudes toward the new software.

A mandatory software migration is both a technological change and an organizational change. Employees' attitudes toward the new software are therefore likely to influence how they evaluate the broader transformation. The software is the most visible and immediate object through which the organizational decision is experienced. If employees evaluate the new system positively, they may judge the change as appropriate, legitimate, and beneficial. If they evaluate it negatively, they may interpret the organizational decision as poorly conceived or poorly implemented.

This association extends TAM in a way that is appropriate for mandatory adoption. In voluntary settings, the usual downstream outcome is intention or use. In mandatory organizational settings, overall change evaluation is a more informative outcome because it captures whether the imposed transformation is perceived as positive or negative after implementation (Fuchs & Prouska, 2014). Thus, we hypothesize that:

- H5:** Attitudes toward the new software will be positively associated with employees' overall evaluation of the organizational change.

## METHOD

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### *RESEARCH SETTING AND PROCEDURE*

The empirical setting was a public-sector organization that implemented a mandatory migration from Microsoft Office to OpenOffice. The migration concerned desktop applications used for word processing, spreadsheets, and presentations. It did not replace email, videoconferencing, instant messaging, document-management systems, or enterprise collaboration platforms such as Microsoft Teams. The change, therefore, affected individual and interdependent task execution through office documents rather than the organization's entire communication and collaboration infrastructure. The case was selected because employees did not decide whether to adopt the new system. Once implementation was completed, Microsoft Office was removed, and OpenOffice became the only available office suite.

The migration was supported by an external information technology provider and unfolded in three phases. The final choice to change the system remained a management decision, although employee representatives were consulted beforehand; this consultation was limited, and individual employees did not participate directly in selecting the suite. During the pre-implementation phase, management communicated the decision, explained the reasons for the migration in plenary sessions, and introduced OpenOffice. During the implementation phase, all employees attended an eight-hour training course in groups of approximately 15 to 20 participants, and OpenOffice was installed while Microsoft Office remained temporarily available. During the post-implementation phase, Microsoft Office was uninstalled from all computers, making OpenOffice compulsory for daily work. The implementation, therefore, followed a staged hybrid transition: an initial period of parallel use allowed employees to compare the suites and adapt gradually, followed by the discontinuation of Microsoft Office. Training was one component of this broader informing and implementation process rather than the sole mechanism supporting adoption.

### *DATA COLLECTION AND PARTICIPANTS*

Data were collected at two time points. The first questionnaire was administered before the beginning of training activities, when employees had received information about the migration but had not yet started the formal training process. The second questionnaire was administered approximately 10 months later, 3 months after the migration was completed and the proprietary software was discontinued. This design enabled the linking of pre-implementation organizational conditions to post-implementation evaluations of the technology and organizational change.

To protect confidentiality while enabling anonymous matching across waves, questionnaires were distributed by the organization's IT officers rather than by the researchers. Respondents generated the same alphanumeric code at both waves using a predefined combination of selected initials and elements of maternal biographical information. No names were collected, no nominative linkage file was created for the research team, and the code was used solely to match Time 1 and Time 2 questionnaires. Employees returned completed questionnaires in a sealed box that was subsequently delivered to the researchers. Approximately 200 employees were eligible to participate. A total of 157 employees responded at Time 1 (approximately 78.5%), and 124 responded at Time 2 (approximately 62.0%). The final matched sample included 115 employees, representing 73.2% of Time 1 respondents and 92.7% of Time 2 respondents. Of these, 73.9% were women. With regard to age, 17.4% were between 25 and 34 years old, 47.8% between 35 and 44, 28.7% between 45 and 54, and 6.1% were older than 55. Most participants had a high school diploma (58.1%), while 26.3% had a master's degree. Average organizational tenure was 12.73 years ( $SD = 9.75$ ).

## MEASURES

Unless otherwise stated, items were rated on five-point Likert-type scales ranging from 1 (completely disagree) to 5 (completely agree). Scale scores were computed so that higher values indicated higher levels of the construct.

*Supervisor support* was measured at Time 1 using four items adapted from Eisenberger et al.'s (1986) perceived organizational support scale and reworded to refer to supervisors. The scale captured employees' perceptions that their supervisors valued and supported them in the workplace. A sample item is: "My supervisors are proud that I am part of this organization."

*Organizational support for innovation* was measured at Time 1 using four items adapted from the support-for-innovation subscale of the Team Climate Inventory (Anderson & West, 1998). Items were reworded to refer to the organization rather than the team. The scale captured whether employees perceived the organization as practically supportive of new ideas and improved ways of working. A sample item is: "Members of this organization provide practical support for new ideas and their application." Because the original scale was developed at the team level and the referent was changed, we interpret the measure as organizational support for innovation rather than as a fully validated measure of organizational innovation climate.

*Ease-of-use and usefulness disconfirmation* were measured at Time 2 using adapted items based on Davis's (1989) perceived ease of use and perceived usefulness measures. Four items assessed ease-of-use disconfirmation, and four items assessed usefulness disconfirmation. Rather than asking for static perceptions, participants indicated whether the new software was worse, equal, or better than expected, using a five-point response scale from 1 (much worse than I expected) to 5 (much better than I expected). A sample ease-of-use item is: "My interaction with the system is clear and understandable." A sample usefulness item is: "Using the new system increased my productivity."

*Attitudes toward the open-source software* were measured at Time 2 using four semantic differential items rated on seven-point scales, consistent with the attitudinal logic of TAM (Davis, 1989). Participants evaluated the new system using bipolar adjective pairs such as good-bad and beneficial-harmful. Items were coded so that higher scores indicated more positive attitudes.

*Overall evaluation of the organizational change* was measured at Time 2 using a single item tailored to the specific implementation: "Overall, I evaluate the change that the organization decided to undertake, namely the transition to open-source software, as ..." Responses ranged from 1 (very negative) to 5 (very positive). Because the item referred to a concrete, clearly defined global judgment, a single-item measure was considered acceptable for this exploratory field study, although this remains a limitation.

## ANALYTICAL STRATEGY

Descriptive statistics, correlations, and internal consistency estimates were computed using SPSS 25.0. The measurement model was assessed through confirmatory factor analysis, and the hypothesized model was tested using structural equation modeling in AMOS 25.0. The model followed the proposed staged sequence: pre-implementation supervisor support and organizational support for innovation predicted post-implementation ease-of-use and usefulness disconfirmation; ease-of-use disconfirmation predicted usefulness disconfirmation; both disconfirmation variables predicted attitudes toward the software; and attitudes predicted overall change evaluation.

Model fit was evaluated using  $\chi^2$ , CFI, TLI, RMSEA, and SRMR. Composite reliability (CR) and average variance extracted (AVE) were inspected to assess construct reliability and convergent validity. CR values of .70 or higher were considered acceptable. For AVE, values around .40 or higher were considered adequate in this applied SEM context, particularly when composite reliability was acceptable, and the construct was theoretically coherent (Hair et al., 2018).

There is no universal minimum sample size for structural equation modeling because requirements depend on model complexity, the number and quality of indicators, factor loadings, effect sizes,

missing data, and estimator characteristics (Wolf et al., 2013). Nevertheless,  $N = 115$  is modest for the present latent-variable model and limits statistical power, particularly for small structural effects. SEM was used because the hypotheses concerned relations among latent constructs and the tested model was relatively parsimonious; however, the estimates are treated as preliminary, effect sizes and fit indices are reported alongside significance tests, and nonsignificant paths are interpreted cautiously. The single-item measure of change evaluation was included in the model by fixing its factor loading to 1 and its residual variance to 0; findings involving this outcome are therefore also interpreted with caution.

## RESULTS

### *DESCRIPTIVE STATISTICS AND PRELIMINARY ASSOCIATIONS*

Employees reported relatively modest levels of supervisor and organizational support for innovation prior to implementation. Supervisor support had a mean of 2.81 ( $SD = 0.72$ ), whereas organizational support for innovation had a mean of 2.95 ( $SD = 0.63$ ). Post-implementation disconfirmation scores indicated that the new software was experienced as somewhat worse than expected, particularly in terms of ease of use. Ease-of-use disconfirmation had a mean of 2.40 ( $SD = 0.89$ ), while usefulness disconfirmation had a mean of 2.82 ( $SD = 0.69$ ). At the same time, employees' attitudes toward the software were relatively positive ( $M = 5.28$ ,  $SD = 0.94$ ), and overall change evaluation was close to the midpoint of the scale ( $M = 3.06$ ,  $SD = 0.82$ ).

Internal consistency estimates were generally acceptable. Reliability was high for ease-of-use disconfirmation ( $\alpha = .95$ ) and organizational support for innovation ( $\alpha = .87$ ), acceptable for attitudes toward the software ( $\alpha = .76$ ) and usefulness disconfirmation ( $\alpha = .71$ ), and slightly below the conventional .70 threshold for supervisor support ( $\alpha = .69$ ; Hair et al., 2018). Because the latter value was very close to the conventional threshold and the construct was theoretically central to the model, the scale was retained. However, this reliability estimate should be considered when interpreting the results.

Correlations showed that supervisor support and organizational support for innovation were positively associated. The post-implementation variables were also positively related to one another: ease-of-use disconfirmation, usefulness disconfirmation, attitudes toward the software, and change evaluation were all positively correlated. Cross-time associations between the pre-implementation support variables and the post-implementation outcomes were generally weak, with the exception of the positive association between supervisor support and attitudes toward the software. All these values are reported in Table 1.

**Table 1. Means, standard deviations, reliability, and correlations of the studied variables**

|                                    | <b>M</b> | <b>SD</b> | <b>1</b>     | <b>2</b>     | <b>3</b>     | <b>4</b>     | <b>5</b>     |
|------------------------------------|----------|-----------|--------------|--------------|--------------|--------------|--------------|
| 1. Support by supervisors (T1)     | 2.81     | 0.72      | <i>(.69)</i> |              |              |              |              |
| 2. Support for innovation (T1)     | 2.95     | 0.63      | .36**        | <i>(.87)</i> |              |              |              |
| 3. PEOU Expect. Disconf. (T2)      | 2.40     | 0.89      | .15          | -.14         | <i>(.95)</i> |              |              |
| 4. PU Expect. Disconf. (T2)        | 2.82     | 0.69      | .14          | .00          | .60**        | <i>(.71)</i> |              |
| 5. Attitudes towards software (T2) | 5.28     | 0.94      | .19*         | .08          | .25**        | .22*         | <i>(.76)</i> |
| 6. Change evaluation (T2)          | 3.06     | 0.82      | .07          | -.10         | .57**        | .49**        | .39**        |

*Note.*  $N = 115$ . \*  $p < .05$ , \*\*  $p < .01$ ; Cronbach's alphas on the diagonal (in italics, between brackets)

### *MEASUREMENT MODEL*

The confirmatory factor analysis showed acceptable fit to the data,  $\chi^2 (175) = 243.44$ ,  $p = .001$ , CFI = .95, TLI = .93, RMSEA = .06, SRMR = .07. Most standardized factor loadings exceeded

conventional minimum thresholds. One reverse-coded item of the supervisor support scale had a low loading (.25), suggesting that this item may have performed less well than the others. However, the construct was retained due to its theoretical relevance and the fact that the overall reliability estimates remained acceptable.

Composite reliability values were satisfactory for all latent variables. Composite reliability was .88 for organizational support for innovation, .95 for ease-of-use disconfirmation, .74 for usefulness disconfirmation, .79 for attitudes toward the software, and .73 for supervisor support. These values indicate adequate internal consistency of the latent constructs.

Convergent validity was generally acceptable, although not uniformly strong. Average variance extracted was high for organizational support for innovation (AVE = .64) and ease-of-use disconfirmation (AVE = .83), and close to the conventional .50 threshold for attitudes toward the software (AVE = .49). AVE values were lower for usefulness disconfirmation (AVE = .44) and supervisor support (AVE = .44), suggesting moderate convergent validity for these constructs.

### **RESEARCH MODEL**

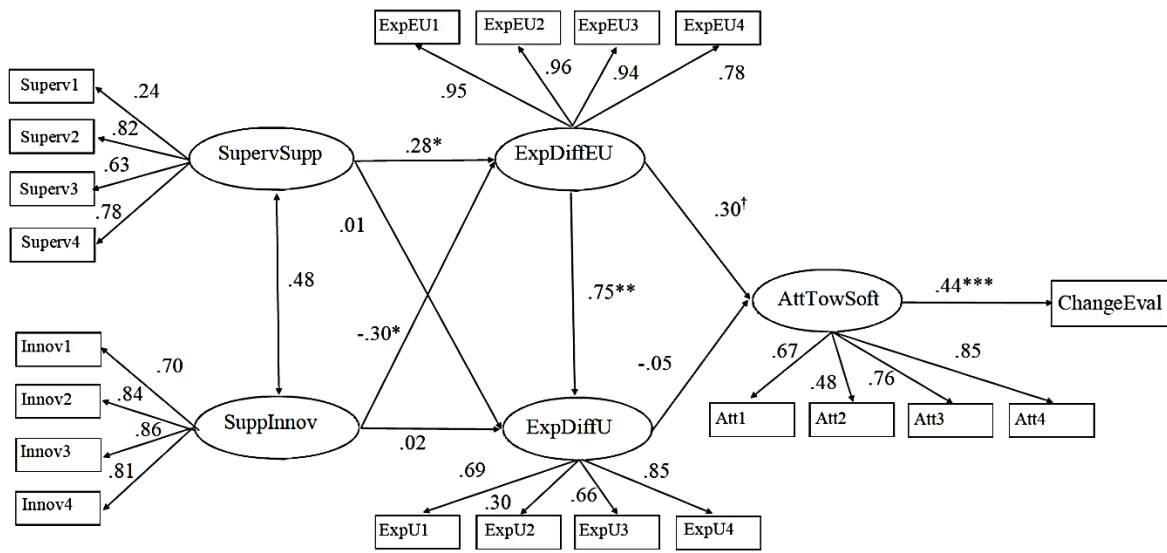
The hypothesized structural model showed acceptable fit to the data,  $\chi^2(181) = 247.89$ ,  $p = .001$ ,  $\chi^2/df = 1.37$ , CFI = .95, TLI = .94, RMSEA = .06, 90% CI [.04, .07], PCLOSE = .25, SRMR = .08.

Supervisor support at Time 1 positively predicted ease-of-use disconfirmation at Time 2 ( $\beta = .28$ ,  $B = .31$ ,  $SE = .14$ ,  $CR = 2.26$ ,  $p = .02$ ), supporting H1a. Supervisor support did not significantly predict usefulness disconfirmation ( $\beta = .01$ ,  $B = .00$ ,  $SE = .04$ ,  $CR = .10$ ,  $p = .92$ ), so H1b was not supported. Organizational support for innovation did not show the hypothesized positive association with ease-of-use disconfirmation as the association was significant and negative ( $\beta = -.30$ ,  $B = -.43$ ,  $SE = .17$ ,  $CR = -2.50$ ,  $p = .01$ ). Thus, H2a was not supported, and the observed relationship was opposite to the expected direction. Organizational support for innovation did not significantly predict usefulness disconfirmation ( $\beta = .02$ ,  $B = .01$ ,  $SE = .05$ ,  $CR = .21$ ,  $p = .84$ ), so H2b was not supported. Consistent with TAM-based reasoning, ease-of-use disconfirmation positively predicted usefulness disconfirmation ( $\beta = .75$ ,  $B = .27$ ,  $SE = .09$ ,  $CR = 2.95$ ,  $p < .01$ ), supporting H3. Ease-of-use disconfirmation was marginally associated with attitudes toward the new software ( $\beta = .30$ ,  $B = .25$ ,  $SE = .15$ ,  $CR = 1.68$ ,  $p = .09$ ). This coefficient was positive but did not reach the conventional .05 significance level; therefore, H4a was not supported. Usefulness disconfirmation did not significantly predict attitudes toward the software ( $\beta = -.05$ ,  $B = -.12$ ,  $SE = .45$ ,  $CR = -.26$ ,  $p = .80$ ), so H4b was not supported. Finally, attitudes toward the software positively predicted employees' overall evaluation of the organizational change ( $\beta = .44$ ,  $B = .38$ ,  $SE = .09$ ,  $CR = 4.20$ ,  $p < .001$ ), supporting H5. A summary of hypothesis tests is available in Table 2. The tested model is represented in Figure 1.

**Table 2. Summary of hypothesis tests**

| Hyp. | Path                                                                | Outcome                                                                   |
|------|---------------------------------------------------------------------|---------------------------------------------------------------------------|
| H1a  | Supervisor support → ease-of-use disconfirmation                    | Supported ( $\beta = .28$ , $p = .02$ )                                   |
| H1b  | Supervisor support → usefulness disconfirmation                     | Not supported ( $\beta = .01$ , $p = .92$ )                               |
| H2a  | Organizational support for innovation → ease-of-use disconfirmation | Not supported; significant opposite effect ( $\beta = -.30$ , $p = .01$ ) |
| H2b  | Organizational support for innovation → usefulness disconfirmation  | Not supported ( $\beta = .02$ , $p = .84$ )                               |
| H3   | Ease-of-use disconfirmation → usefulness disconfirmation            | Supported ( $\beta = .75$ , $p < .01$ )                                   |

| Hyp. | Path                                    | Outcome                                                     |
|------|-----------------------------------------|-------------------------------------------------------------|
| H4a  | Ease-of-use disconfirmation → attitudes | Not supported at $p < .05$<br>( $\beta = .30$ , $p = .09$ ) |
| H4b  | Usefulness disconfirmation → attitudes  | Not supported ( $\beta = -.05$ , $p = .80$ )                |
| H5   | Attitudes → change evaluation           | Supported ( $\beta = .44$ , $p < .001$ )                    |



**Figure 1. Hypothesized structural model with standardized estimates**

*Note:* SupInnov = organizational support for innovation; SuperSup = supervisor support; ExpDifEU = ease-of-use expectation disconfirmation; ExpDifU = usefulness expectation disconfirmation; AttTowSoft = attitudes toward the software; ChangEval = overall evaluation of the organizational change. Standardized factor loadings and structural paths are reported. Significance levels are shown only for hypothesized structural paths. † $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

## DISCUSSION

This study examined mandatory technology adoption as a staged organizational informing process. Integrating informing science (Cohen, 1999, 2009; Gill & Bhattacharjee, 2007), TAM (Davis, 1989; Venkatesh & Davis, 2000), expectation-disconfirmation reasoning (Bhattacharjee, 2001), and organizational change research (Choi, 2011; Fuchs & Prouska, 2014), it investigated whether pre-implementation supervisor support and organizational support for innovation predicted employees' post-implementation disconfirmation of expected ease of use and usefulness, attitudes toward a newly adopted software suite, and overall evaluation of the organizational change.

The revised logic of the model is important for interpreting the findings. The study does not treat supervisor support and organizational support for innovation as generic antecedents of technology acceptance. Rather, it treats them as pre-implementation conditions that inform the expectations employees bring to a mandatory digital change. Post-implementation disconfirmation is then the comparison point between initial organizational signals and employees' subsequent experiences with the implemented system. Attitudes toward the software and change evaluation represent acceptance beyond compliance, that is, the psychological and evaluative responses when behavioral use is required.

The findings provide preliminary field evidence that the organizational informing environment matters in mandatory digital change. Employees who perceived stronger support from supervisors before implementation were more likely to report that the new software was easier to use than expected after implementation. This result is theoretically meaningful because ease of use is not determined only by interface design or technical functionality. In workplace contexts, perceived ease of use also depends on whether employees feel able to ask for help, manage temporary inefficiency, and cope with learning demands. Direct supervisors are particularly important because they are the organizational actors closest to employees' day-to-day work and are responsible for translating organizational decisions into concrete practices (Neves, 2011; Zappalà et al., 2019).

From an informing science perspective, supervisors can be understood as proximal informing agents. They do not merely provide emotional or instrumental support; they help employees interpret the change, understand expectations, and translate the new system into everyday work practices. This may explain why supervisor support was associated with ease-of-use disconfirmation. Employees who experience supportive supervision may perceive the informing environment as more accessible and responsive, making the system easier to learn than expected.

Supervisor support did not predict usefulness disconfirmation. This null finding is plausible in the present context. The new open-source suite was introduced as a replacement for a proprietary office suite, offering broadly equivalent functionality. Employees' judgments of usefulness may therefore have depended more on perceived task fit, technical performance, file compatibility, and the functional adequacy of the software than on general support from supervisors. Supervisor support may facilitate employees' adaptation to a new system, yet it may have a more limited influence on whether employees perceive the system as enhancing productivity or job performance.

The most theoretically interesting result concerns organizational support for innovation. Contrary to the formal hypothesis, pre-implementation support for innovation negatively predicted ease-of-use disconfirmation. The hypothesis followed the positive logic of organizational climate and innovation-implementation research, according to which supportive organizational contexts should facilitate the implementation of new ways of working. However, the observed negative association suggests that, in this specific mandatory implementation, organizational support for innovation may have served as a high-level signaling mechanism that raised employees' expectations about the quality, coherence, and ease of use of the digital change.

This interpretation is consistent with expectation-disconfirmation reasoning. If employees perceive their organization as supportive of innovation, they may expect a digital implementation to be well planned, well resourced, and clearly beneficial for daily work. When the actual experience of using the new system does not match these expectations, employees may report lower ease-of-use disconfirmation. In this sense, organizational support for innovation may have a double-edged function: it can create openness to change and legitimize new ways of working, but it can also increase the risk of disappointment when the practical implementation experience does not live up to the innovation-oriented message conveyed before the change.

From an informing science perspective, this finding suggests that distal organizational signals need to be aligned with concrete implementation support and realistic difficulties related to the change. An innovation-supportive climate communicates that the organization values innovation and will support new ways of working. If later implementation support is weak, fragmented, or less useful than expected, the informing signal becomes inconsistent with employees' use experience. Negative disconfirmation may therefore reflect not only system difficulty, but also a mismatch between the organization's pre-implementation message and employees' post-implementation experience.

Alternative explanations should also be considered. First, general organizational support for innovation may not correspond to implementation-specific support for this particular migration. Second, adapting a team-level support-for-innovation measure to the organizational level may have altered its meaning or psychometric performance. Third, unmeasured differences in job role, intensity of

software use, prior digital competence, or exposure to compatibility problems may have contributed to the observed association. The negative coefficient should therefore not be interpreted as evidence that organizational support for innovation is generally detrimental.

The results partly support TAM-based assumptions in a disconfirmation framework. Ease-of-use disconfirmation strongly predicted usefulness disconfirmation. When employees found the system easier than expected, they also tended to find it more useful than expected. This is consistent with the original TAM assumption that ease of use contributes to usefulness (Davis, 1989). In practical terms, a system that is easier to learn and operate may allow employees to focus on task accomplishment rather than on effortful adaptation, thereby improving perceived utility.

However, disconfirmation variables were weaker predictors of attitudes toward the software than expected. Ease-of-use disconfirmation showed only a marginal association with attitudes, and usefulness disconfirmation was not significant. This may indicate that attitudes toward a mandatory workplace technology are influenced by additional factors not captured in the present model, such as prior habits, perceived loss of autonomy, symbolic meanings attached to the change, compatibility with work practices, peer norms, technical problems, or perceptions of procedural fairness. It may also indicate that static post-implementation perceptions of ease of use and usefulness predict attitudes more strongly than retrospective disconfirmation measures. In other words, whether the software is currently perceived as easy and useful may matter more for attitudes than whether it is better or worse than expected.

A clear finding concerns the link between attitudes toward the software and the overall evaluation of change. Employees with more positive attitudes toward the new software also evaluated the organizational change more positively. This result extends TAM logic in a mandatory context. When behavioral intention and voluntary use are constrained, attitudes toward the technology remain important because they shape how employees evaluate the broader change. The technology becomes the concrete object through which the organizational decision is experienced. If the system is evaluated favorably, the change is more likely to be seen as legitimate and positive; if it is evaluated unfavorably, the change may be judged negatively.

### ***THEORETICAL IMPLICATIONS***

This study contributes to informing science by proposing a staged model of mandatory digital change. In such contexts, employees are not only users of a system; they are clients of an organizational informing process. They must receive, interpret, and act on information about the rationale for the change, the system's expected use, the available support, and the implications for everyday work. The effectiveness of a mandatory information system cannot, therefore, be inferred from technical deployment alone. It also depends on whether the organizational informing environment enables users to form realistic expectations and incorporate the system into work practices.

The study also contributes to technology acceptance research by showing that mandatory digital change requires a different logic: in voluntary contexts, intention to use is a central dependent variable; in mandatory contexts, actual use is imposed, and intention may have limited explanatory value. Attitudes and change evaluation, therefore, become more informative because they capture employees' psychological acceptance of the technology and their assessment of the organizational decision behind it (Brown et al., 2002; Marikyan et al., 2026).

A further contribution concerns the distinction between proximal and distal informing conditions. Supervisor support operated as a proximal informing condition that was positively associated with ease-of-use disconfirmation. Organizational support for innovation operated as a broader contextual signal that, unexpectedly, was negatively associated with ease-of-use disconfirmation. This finding suggests that distal informing signals may not translate automatically into favorable implementation experiences. When innovation-oriented messages raise expectations that are not matched by concrete implementation support, they may become vulnerable to negative disconfirmation. This distinction

suggests that proximal support may help employees manage concrete implementation difficulties, whereas distal innovation signals may shape expectations about implementation quality. Finally, the study contributes to expectation-disconfirmation research by showing that disconfirmation is useful for studying digital implementation, but should be modeled carefully. In organizational settings, disconfirmation is not only an individual comparison between expected and experienced system performance. It is also shaped by communication, training, leadership, climate, and other signals that generate expectations. Future models should include expectations before implementation, perceived ease of use, and usefulness after implementation, and direct disconfirmation scores to clarify the roles of each.

### ***PRACTICAL IMPLICATIONS***

For managers, IT leaders, and change agents, the findings suggest that mandatory digital change requires more than formal deployment. Organizations should design the informing architecture of the transition. This includes communicating the rationale for the change, calibrating expectations, providing usable training, ensuring technical assistance, and clarifying how the new system should be incorporated into work practices.

Supervisor support appears particularly important for helping employees experience the new system as manageable. Organizations should therefore involve supervisors early, clarify their role in supporting employees, provide them with sufficient knowledge about the new technology, and ensure that they can respond to operational difficulties. Supervisors should not be treated as passive recipients of implementation decisions but as local agents of information who translate the change into day-to-day work.

The unexpected negative association between support for innovation and ease-of-use disconfirmation also has practical implications. Organizations should avoid presenting digital change through overly optimistic or generic innovation narratives if they cannot sustain concrete support during implementation. Raising expectations without providing continuous assistance may increase disappointment. A more effective strategy is to communicate both the rationale and the likely difficulties of the change, while demonstrating that support will remain available after initial training.

Finally, because attitudes toward the software were associated with overall change evaluation, organizations should monitor employees' reactions after implementation, not only during announcement or training. Post-implementation feedback can identify usability problems, unmet expectations, and perceived barriers that may otherwise reduce the legitimacy of the change. In mandatory digital change, acceptance beyond compliance should be treated as an implementation outcome in its own right.

### ***LIMITATIONS AND FUTURE RESEARCH***

This study has several limitations. First, although data were collected at two time points, the design should be considered time-lagged rather than longitudinal. Supervisor support and support for innovation were measured before implementation, whereas ease-of-use disconfirmation, usefulness disconfirmation, attitudes, and change evaluation were all measured at Time 2. Therefore, causal interpretations should be avoided.

Second, expectation disconfirmation was measured retrospectively at Time 2. This approach captures employees' perceived comparison between expectations and experience, but it does not directly measure expectations before implementation and perceptions after implementation as separate constructs. Future studies should collect pre-implementation expectations, post-implementation perceptions, and direct disconfirmation indicators separately, allowing researchers to model expectation revision more precisely.

Third, the sample size was modest. As SEM sample-size requirements vary with model characteristics,  $N = 115$  should not be evaluated against a single universal cutoff (Wolf et al., 2013). Even so, the present sample limits power to detect small structural effects and makes the nonsignificant paths

especially uncertain. The model fit and effect-size pattern provide preliminary evidence, not a definitive test. Replication in larger samples and across multiple organizations is therefore needed.

Fourth, the study was conducted in a single public-sector organization that adopted OpenOffice through a staged hybrid transition. The change concerned desktop productivity applications rather than the organization's full communication or collaboration infrastructure. The findings may not generalize to other organizations, countries, technologies, or transition strategies. Future research should test whether the staged informing process generalizes to more complex and interdependent technologies, such as enterprise resource planning systems, electronic health records, engineering software, or organization-wide collaboration platforms. Such implementations involve greater task interdependence, process redesign, data integration, and operational risk than the office-suite migration examined here. Comparative work should also distinguish immediate replacement strategies from parallel-use and staged hybrid transitions.

Fifth, change evaluation was measured with a single item. Although single-item global evaluations can be useful when the construct is concrete and easily interpretable, multi-item measures would provide stronger reliability and validity. Future research should include richer measures of change evaluation, including perceived legitimacy, satisfaction with implementation, or perceived change success.

Sixth, the study did not measure implementation support during the transition. This is particularly relevant for interpreting the unexpected negative effect of organizational support for innovation. Future studies should distinguish between pre-implementation organizational support for innovation, implementation-specific support, training quality, communication quality, technical assistance, and post-implementation support continuity.

Finally, the informing science framing should be developed further in future research. The present study inferred the organizational informing environment from supervisor support and organizational support for innovation, but it did not directly measure informing quality, information richness or communication effectiveness. Future studies could explicitly model the organizational informing environment as a set of implementation conditions linking information systems, employees, and organizational change outcomes.

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## CONCLUSION

Mandatory digital change cannot be reduced to the technical adoption of a new system. It is a staged organizational informing process in which employees receive implementation signals, form and revise expectations, develop attitudes toward the technology, and evaluate the broader change. This study suggests that supervisor support before implementation can help employees experience a mandatory software migration as easier than expected, while organizational support for innovation may backfire when expectations are not matched by sustained implementation support. It also shows that attitudes toward the new software are associated with employees' overall evaluation of the organizational change. These findings point to the importance of integrating informing science, technology acceptance models, and organizational change theory, particularly in contexts where digital transformation is mandatory, complex, and dependent on employees' everyday experience.

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