BEYOND THE SOCIAL: EMBRACING SOCIOMATERIALITY INTO STRATEGY FOR UNDERSTANDING EXTERNAL ENVIRONMENTAL CHANGES

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Abstract

Current organizational studies addressing external environmental changes predominantly adopt a human-centric perspective, focusing on the unforeseen implications and social responses to such changes. This paper argues for a shift from viewing external environmental changes purely as social phenomena to recognizing the intertwined roles of both social and material elements. The methodology involved a literature review of organizational studies, specifically focusing on studies during and after the pandemic (2020–2024), using search terms like "COVID-19", "pandemic", "organizations", "implication", and "work". The analysis employed a thematic approach to identify patterns within the literature. This paper concludes that a sociomaterial perspective can provide a robust framework for enhancing our understanding of environmental dynamics, advocating for its broader application in organizational research. This paper contributes to organizational studies in two ways. First, it brings the material into the foreground to amend deficiencies in our understanding of the organizational external environment within which organizational practices are formed and framed. Second, the paper synthesizes the literature on sociomateriality to eliminate the ambiguity often associated with this framework, facilitating its adoption in empirical research.

Keywords: External Environment, Organizational Practices, Strategic Management, Theoretical Framework, Sociomateriality

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1. INTRODUCTION

All organizations operate within rapidly changing technological, economic, legal, and vast other environmental conditions (de Clerck et al., 2023), affecting organizations and how people communicate, socialize, and work. The organizational external environment is crucial. It can direct management processes (de Clerck et al., 2023), and shape strategic decision-making processes (Elbanna & Child, 2007; Li et al., 2022). A current gap in

the literature can be witnessed in current strategy research on external environmental changes, which is often perceived and addressed through a social lens. For example, a social approach is prevalently witnessed in research addressing the implications of the recent pandemic (Carnevale & Hatak, 2020; Sheth, 2020; Sigala, 2020). Research addressing the implications of external environmental changes for organizations does not devote sufficient attention to artefacts in and around organizations. Material elements (such as technological capabilities,

physical buildings, and tangible health precautions) play a significant role in shaping organizational practices. Without an articulation of the material, our understanding of the external environment and its effect on organizations remains limited.

A theoretical framework that can bridge the gap in organizational studies is the notion of sociomateriality, which recognizes the fundamental role played by both social and material elements in and around organizations (Orlikowski, 2007). Sociomateriality has been widely applied by organizational researchers (Aljabr et al., 2022; Cecez-Kecmanovic et al., 2014; Orlikowski & Scott, 2008) but remains insufficiently articulated in research on the intersection between organizations and strategic management. Additionally, the framework was mostly applied with a focus on technology as the neglected material element, in line with the first proposition of the framework by Orlikowski and Scott (2008), and has been criticized for being used as a 'buzzword', with a superficial understanding of it (Weißenfels et al., 2016).

This paper aims to answer the following question:

RQ: How can sociomateriality be integrated into an organizational strategy to improve understanding of external environmental changes?

To answer this question, our methodology focuses on COVID-19 as an example of such changes, conducting a literature review of organizational studies during and after the pandemic (2020–2024). This paper contributes to extant organizational studies in two ways. First, it brings the material into the foreground, amending deficiencies in the current understanding of the organizational external environment. We highlight the significance of both social and material elements in constituting the organizational external environment and its changes within which current organizational practices are formed and framed. Second, we introduce sociomateriality as a useful angle to study external environmental changes and promote the understanding and adoption of the framework. This paper provides a robust foundation for organizational researchers to facilitate the application of the framework in empirical studies.

Specifically, the structure of the paper is as follows: Section 2 sets the theoretical background of the paper by reviewing the literature on sociomateriality. This literature review section includes an overview of theoretical views preceding sociomateriality through which the framework was born, an articulation of philosophical foundations underpinning the framework, and a highlight of the uses and limitations of its approaches. Section 3 presents the research methodology and outlines the steps for the analysis of literature on external environmental changes. Section 4 discusses the result of the literature analysis to highlight the gap, taking the latest global pandemic as an example. This section discusses potential applications of sociomateriality in future empirical research. Finally, Section 5 concludes by summarizing the usefulness of the framework and its relevance for empirical research addressing organizational practices as they are enacted and framed within their external environment.

2. LITERATURE REVIEW

The framework of sociomateriality is the study of how material things (like buildings, tools, text, and other objects) impact our social lives. The term itself is, therefore, composed of these two words, social and material. This framework was proposed by Orlikowski (2007) to recognize the role that technology plays in organizations. This section synthesizes the literature on sociomateriality, providing an understanding of the framework and facilitating its adoption in empirical studies. In what follows, we set the theoretical background of the paper by presenting theoretical views preceding sociomateriality through which the framework was born. This section also articulates the philosophical foundations underpinning the framework and highlights its different approaches.

2.1. Intellectual roots of sociomateriality

Several studies pursued an understanding of technology in organizations. Many of such theoretical perspectives concentrate on the implications of technology or its adoption by people (Orlikowski, 2007). For example, technological determinism assumes that technology is an external force that affects how people behave in social situations (Grint & Woolgar, 1997). This theory is based on the belief that the implications of a certain technology are inevitable, regardless of variations in utilizing the same technology by different people across contexts (Williams & Edge, 1996). On the contrary, social constructivist theories, hold an opposite perspective, arguing that different groups of people may understand and experience the same technology in various ways (Grint & Woolgar, 1997). In doing so, such theories shed light on the significance of human actions and the variety of options they may choose when working with technology, which ultimately shapes the impact of technology on them, either consciously or subconsciously (Williams & Edge, 1996).

To bridge the gap between information technology (IT) and organizational studies, Orlikowski (2007) suggested the concept of sociomateriality. She clarified the problematic paradigm used to examine materiality in organizational research. Therefore, she offers materiality as an integral part of our daily social interactions. Her discussion relies on theories that support her argument such as the actor-network theory (ANT). Many problems with earlier conceptions of the interaction between humans and technology can be resolved through ANT (MacKenzie & Wajcman, 1999). According to ANT, reality is produced by actors inside a network and the connections between them. ANT rejects the idea that social interactions, like those between people, are independent of the material. Instead, it sheds light on the people, material, and other objects being equally significant in shaping reality through the relationships they have among them (Grint & Woolgar, 1997; Latour, 2005).

The framework of sociomateriality was born to conceptualize the role of the material, such as technology, within organizations (Orlikowski & Scott, 2008). The main theoretical foundation of sociomateriality is not explicitly stated, but ANT has

been identified as an important theoretical root through which sociomateriality emerged (Cecez-Kecmanovic et al., 2014). The two theoretical perspectives are very similar in recognizing the fundamental role played by both social and material elements (Latour, 2005; Leonardi, 2013; Orlikowski, 2007). However, sociomateriality and ANT differ in their empirical implications and contributions. For example, ANT focuses on the network of relations and their formation, including 'how' the relationships between its actants (i.e., objects inside the network) occur and persist (Cecez-Kecmanovic et al., 2014; Latour, 2005). Sociomateriality is concerned with the 'outcome' resulting from the interplay of social and material elements (Leonardi, 2011). Sociomateriality, therefore, asserts that the material in an organization's environment (such as electronic devices, viruses, cubicles, telephones, masks, written text, etc.) is fundamental in shaping organizational social practices (including routines, policies, strategy formulation, decision making, etc.) (Leonardi, 2012, 2013; Orlikowski & Scott, 2008).

2.2. Philosophical foundation of sociomateriality

A discussion of basic philosophical views related to the framework is necessary for a robust understanding of the framework. This section, therefore, briefly synthesizes the main philosophical positions in relation to ontologies and epistemologies relevant to sociomateriality.

When it comes to ontologies, scholars commonly distinguish between two ontological stands: objectivism and subjectivism (Saunders et al., 2016). These two traditional ontologies are widely used in organizational studies but are inconsistent with the view of sociomateriality due to their ignorance of the material elements shaping reality together with the social elements. Instead, two other ontologies are more consistent with sociomateriality: the relational and substantialist ontologies (Cecez-Kecmanovic et al., 2014).

Relational ontology assumes the separation of the social and the material. It argues that they are entangled, resulting in everyday practices referred to as 'sociomaterial' (Cecez-Kecmanovic et al., 2014; Orlikowski, 2007). This ontology emphasizes the co-existence of the social and the material, noting that things and objects (including people) are not first independent entities that then interact, but are always co-existing (Slife, 2004). Sociomaterial perspectives relying on this ontology have been criticized for the contradiction in the philosophical argument which views social and material entities as inseparable while referring to them separately in analysis.

On the contrary, substantial ontology views the social material elements as independent entities that influence one another through their interplay (Cecez-Kecmanovic et al., 2014; Leonardi, 2012). This ontology asserts that the interplay of social agencies (such as people) and material agencies (such as technology) takes place in the space of practice (Leonardi, 2012). The ontological separation is one of the main differences between substantialist ontology and relational ontology in viewing sociomaterial practices (Cecez-Kecmanovic et al., 2014; Leonardi, 2011). Table 1 presents a summary of the differences between relational and substantialist ontologies.

Table 1. Summary of ontological views of sociomateriality

Dimension	Relational ontology	Substantialist ontology
The nature of social and material elements	They only exist in correlation to one another (inseparable).	They are separate entities with separate characteristics.
View toward practices	A practice only exists from the interaction of social and material components. Practices are, therefore, viewed as sociomaterial accomplishments.	A practice is a space influenced by social and material interactions.

Overall, both ontologies are consistent with sociomateriality due to their recognition of the significance of social and material elements. Both acknowledge the importance of 'sociomaterial practices' (Leonardi, 2012; Leonardi & Rodriguez-Lluesma, 2012; Orlikowski, 2007). In doing research, the decision between these two ontologies is often influenced by the theoretical approach toward sociomateriality adopted by scholars. Commonly used theoretical approaches are synthesized next.

Sociomateriality has been used in research with different epistemological paradigms, such as critical realism (Stampe & Müller, 2018), interpretivism paradigm (Chai et al., 2018; Zorina & Avison, 2011), and agential realism. These three epistemologies will be synthesized next.

Critical realism is a well-established epistemology that sees reality as external to knowledge. It states that a reality independent of our knowledge exists, although it cannot be entirely captured (Saunders et al., 2016). Critical realism is concerned with underlying causes and processes to explain what we see and experience in the world. This is usually useful for the analysis of social structures involving the element of time (Saunders et al., 2016). Therefore, it is sometimes adopted with sociomateriality to look at sociomaterial practices and how they emerge over time (Leonardi, 2013). For example, critical realism was adopted by Stampe and Müller (2018) to investigate wearable technology as a fundamental aspect of work practices. Their research illustrates the interdependency of technology and work practices and highlights the element of time (i.e., previous experiences, current situations, and future expectations) in influencing organizations' technological investment.

On the other hand, interpretivism proposes that a researcher plays a role in our understanding of reality. It looks at new knowledge as being produced subjectively. interpretivism disagrees with critical realism's notion of one objective reality (Saunders et al., 2016). Rather, it recognizes that different realities can exist for different groups of people. Thus, when an interpretivism paradigm is adopted for sociomateriality research, it can illustrate that different groups of people have different backgrounds and work at different times under different circumstances, and can, therefore,

experience different realities (Saunders et al., 2016). Zorina and Avison (2011) adopt a sociomaterial perspective through an interpretive paradigm to highlight the role of the context and the culture in which the social and the material interplay. Their study focuses on how the imbrication between technology and end-user communities was influenced by government and local area network (LAN) providers.

The philosophical foundations behind both critical realism and interpretivist paradigms are well established in the literature (Creswell, 2014; Saunders et al., 2016), unlike the agential realism proposed by Barad (2003). When adopted with sociomateriality, the paradigm of agential realism perceives the social (e.g., knowledge) to be not only tied to the material (e.g., technologies) but also inextricably bound with it. This can be articulated through the bond between the knowledge and the technologies that we use to observe and analyze that knowledge (Leonardi, 2013).

Agential realism perceives the social and the material as inseparable. Such a view is consistent with a relational ontology, but not with a substantialist ontology. Specifically, agential realism sees that all social elements also have some form of materiality and that all material elements have social elements within (Orlikowski, 2007). This paradigm has been criticized because it emphasizes the social and the material being inseparable but articulates them separately in empirical research analysis and discussion. However, agential realism is commonly used in research adopting the framework of sociomateriality, specifically with the entanglement approach toward sociomateriality (Cecez-Kecmanovic et al., 2014). Approaches toward sociomateriality will be synthesized next.

2.3. Theoretical approaches to sociomateriality

Sociomateriality has been criticized for being a 'buzzword' often used with a superficial understanding of the framework (Weißenfels et al., 2016). The main argument of sociomateriality is often clear, i.e., the significant role played by both social and material elements in constituting everyday practices. However, scholars have proposed various views regarding how the social and the material influence our world. An understanding of these views helps researchers identify the specific sociomaterial approach they will be adopting in their research, increasing the depth of analysis and findings. This section discusses three of the most applied approaches to sociomateriality: entanglement, aspectuality, and imbrications.

2.3.1. Entanglement

The view of entanglement was first proposed by Orlikowski (2007) to argue for the inseparation of the social and the material. This perspective argues for materiality as an essential component of the social life. It sees social and material elements as inseparable, resulting in everyday practices (Barad, 2003; Orlikowski, 2007). This approach sees agency as being endorsed by this entanglement, rather than being owned by either the social or the material (Barad, 2003). This approach has been adopted by several researchers (Myllykoski & Rantakari, 2023; Orlikowski & Scott, 2023; Perriton, 2023).

Sociomaterial entanglement was the first attempt at theorizing sociomateriality (Cecez-Kecmanovic et al., 2014). It has led to criticisms of the framework been criticized by several researchers. Such criticism arises from the same logic discussed earlier for agential realism (i.e., the contradiction between the assumptions and the expressions in empirical research). The second criticism, which explains the first, is the absence of methodological approaches capable of capturing sociomaterial entanglement empirically (Martine & Cooren, 2016).

To overcome the pitfalls of the paradigm of sociomaterial entanglement, different approaches toward sociomateriality have been proposed to better capture the concept in doing empirical research, such approaches include the metaphors of aspectuality and imbrication. Like sociomaterial entanglement, these approaches acknowledge the significance of both social and material elements. However, each proposes a different conceptualization in viewing the existence of such elements and their interplay.

2.3.2. Aspectuality

Aspectuality was introduced as an extension to the entanglement approach (Martine & Cooren, 2016). It builds on the same premise viewing the social and the material are inseparable. However, aspectuality argues that entanglement suggests that there are social aspects and material aspects which are then entangled. They introduce the term aspectuality to recognize such aspects, proposing them as being two different aspects that interact in everything that exists (Martine & Cooren, 2016). To address the criticism of sociomaterial entanglement (i.e., the contradiction between the assumptions and the expressions in empirical research), aspectuality advocates an empirical focus on one aspect (social or material aspects). According to Martine and Cooren (2016), addressing material aspects of something or someone can shed light on what maintains its existence while addressing a social aspect of something or someone is useful for understanding relations that connect that something or someone with others. For example, Wijngaarden (2023) adopts this approach to study how coworkers navigate between the need for quietness and the need for social interactions. The approach of aspectuality can, therefore, be applied to a discussion of social aspects while mentioning the connections with other material beings. It can also be applied for researching material aspects with recognition of other social elements influencing practices.

2.3.3. Imbrications

A third approach to sociomateriality is the view of imbrication, proposed by Leonardi (2011). Understanding the linguistic origin of the concept can help in understanding the argument behind this approach. Specifically, imbrication originates from the Roman language, referring to tiles on a roof (Leonardi & Rodriguez-Lluesma, 2012). Imbrication refers to the overlapping of different elements (just like in roof tiles) which then become useful

interdependently (Leonardi, 2011). Consequently, the approach of sociomaterial imbrications sees the social and the material as existing separately and then overlapping, forming a chain of imbrications. In explaining sociomaterial imbrications, Leonardi (2012) identifies the material as physical or digital technology. Although sociomaterial imbrications, and, the framework of sociomateriality in general, have been focused on the technology when discussing the material, we want to emphasize in this paper that the material represents all surrounding objects which rendered tremendous implications on organizations since the pandemic. Imbrication demonstrates that the material and the social are empirically significant when they are imbricated, rather than when independent. For example, technology by itself may not be important, but it is important while being in an organizational social context having users interacting with it (Cecez-Kecmanovic et al., 2014; Leonardi, 2012).

The sociomaterial approach of imbrication is useful for explaining the agencies of humans and material in organizations. Specifically, it sheds light on organizational practices that occur and evolve over time as the social and the material imbricate (Leonardi, 2011, 2013). For example, sociomaterial imbrication was adopted by Aljabr et al. (2022) in exploring how social and material elements evolve over time to shape professionals' connectivity practices. It was also used by Pinto et al. (2024) to study how social media helped vulnerable communities in overcoming the pandemic. An imbrication approach can thus provide an understanding of practices and work routines shaped by social and material imbrications accumulated over time.

When talking about different approaches toward sociomateriality, it is worth mentioning that these approaches represent 'weak' or 'strong' sociomaterial views (Jones, 2014). Specifically, a 'weak' perspective is in line with approaches conceptualizing the separation of the social and the material (Jones, 2014; Slife, 2004). This weak sociomateriality (such as in the imbrication view) is in line with the substantialist ontology. On the other hand, a 'strong' perspective of sociomateriality asserts that the social and the material are inseparable, existing only together. Such a perspective is most evident in the entanglement approach. In empirical research, no sociomaterial approach consistently stands out as optimal. Rather, the decision between philosophical stands and theoretical approaches is often made systematically, being largely influenced by the objective of the study and the contribution it seeks to deliver.

3. RESEARCH METHODOLOGY

The objective of this study is to construct a scientific map and further analyze the knowledge produced by researchers and strategy experts who address external environmental changes. This research focuses on COVID-19 as an example of an external environmental change. This choice stemmed from the wide impact of the pandemic on organizations and the enormous research conducted on this topic. This section presents the methodological approaches employed during the search of relevant literature. The methodology involved several phases. The research was first initiated post-COVID-19 pandemic, through the observation of a gap between an evident role of the material in everyday work practices (such as face masks, social distancing, and escalated teleworking) and the underrepresentation of such practices in empirical research.

Several methods can be suitable for conducting a literature review. A systematic review follows a structured and pre-defined protocol, involving searches across multiple databases with clearly defined inclusion and exclusion criteria, and a rigorous analysis process to ensure reproducibility and minimize bias. Another option is to perform a meta-analysis to statistically aggregate findings from multiple studies. This method can provide a quantitative synthesis of existing research, allowing for the identification of overall trends and the magnitude of sociomaterial effects. Systematic literature reviews (SLRs) and meta-analyses are powerful tools for synthesizing research, but they come with notable limitations. SLRs are time-consuming and resource-intensive, often requiring extensive protocols and comprehensive searches, and their quality is difficult to assess (Moher et al., 2010). They can also suffer from publication bias, as studies with significant findings are more likely to be included in the review. Meta-analyses can obscure contextual details and nuances of individual studies, leading to oversimplified conclusions that may not be universally applicable (Dwan et al., 2013). Therefore, while SLRs and meta-analyses are valuable, researchers must be mindful of these limitations to ensure robust and meaningful findings. To examine and synthesize current literature, our research followed a literature review methodology adapted by Osei-Kojo et al. (2020). The original study utilized four primary methods, which we describe below:

Search strategy: In our study, we conducted the literature search primarily using Scopus, with specifying results to the period during and post-pandemic (2020–2024). The search terms employed included "COVID-19", "Corona", "pandemic", "organizations", "impact", "implications", and "work". This strategy allowed us to obtain key scientific contributions for our review.

Study eligibility criteria: To conduct a comprehensive literature search, we exercised caution, as noted by Osei-Kojo et al. (2020), to avoid excluding articles that might have been pertinent by solely relying on the presence of search keywords in the abstract or introduction. Thus, our study encompassed articles that presented themes related to the searched terms and were specifically focused on the impact of the pandemic on organizations.

Report eligibility criteria: Our review encompassed both empirical and theoretical articles published exclusively in English. Articles written in English were considered due to the prevalence of English-language publications in the searched databases. Furthermore, we primarily focused on journal articles, given their peer-reviewed and rigorous nature.

Analytical strategy: Similar to Osei-Kojo et al. (2020), our data analysis employed a thematic analysis approach to identify patterns and themes within the articles. In our study, two main themes

were evident, the first is studies focus on implications on the pandemic, and the second is focused on responses to such implications, as discussed in the subsequent section. This approach validated the initial observation of the existing gap and provided support to the argument of this paper.

The final phase of this research aimed to construct a road map for future research by introducing sociomateriality as a useful angle to study external environmental changes. To promote the understanding and adoption of the framework, the paper synthesizes theoretical foundations preceding sociomateriality, through which the framework was born. This is followed by synthesizing both the theoretical and empirical work of key authors (Barad, 2003; Leonardi, 2011; Leonardi & Rodriguez-Lluesma, 2012; Orlikowski, 2007; Orlikowski & Scott, 2008) relevant to the philosophical foundations underpinning sociomateriality and the different approaches associated with the framework.

4. RESULTS AND DISCUSSION

This research addresses a gap in current organizational research on external environmental changes, arguing that such literature is dominated by a social stance that does not sufficiently address the role of the material in shaping the implications of such changes for organizations. Coming from this perspective, we introduce sociomateriality as a useful framework for closing the current gap.

Specifically, organizational literature has recently witnessed increased research on the pandemic as an external environmental change affecting organizations. The literature analysis reveals two evident themes in current research on this topic. One theme includes studies focusing on environmental change and its unintended implications, such as the opportunity for transformation of the tourism industry (Sigala, 2020), implications for human resource management in organizations (Carnevale & Hatak, 2020), and its effect on consumers' decisions and buying habits (Sheth, 2020) and on virtual work (Blanchard, 2021). Another theme of literature focuses on the intended social responses to environmental changes, such as decisions governments undertake (Sharma et al., 2021), business retailers' responses to challenges they face (Pantano et al., 2020), and firms' supply chain management decisions as a result of such changes (Sharma et al., 2020).

Extant research tends to adopt a single-angle view focusing either on the implications of external environmental changes, or social responses to it. What is missing from organizational literature is an articulation of environmental changes and responses to them as interdependent aspects. This paper argues for sociomateriality as a promising framework for closing the gap in the current literature on the implications of external environmental changes. Sociomateriality can bring the material into the foreground by providing an understanding of implications resulting from its interplay with the social in organizations (Fenwick, 2016; Leonardi & Rodriguez-Lluesma, 2012). This argument the paper makes is not to be understood as an underestimation of the usefulness of sociomateriality for other areas affecting organizations. It is rather a call for recognizing

the useful application of the framework. This is especially critical given the significant social and material changes organizations undergo, and the lack of sufficient understanding of sociomaterial aspects shaping such changes.

For example, limited studies have adopted a sociomaterial view to address practices enacted within the pandemic. These studies, however, adopt the framework of sociomateriality mainly concerning technology, including the transition to digital work and people's experiences as they are bounded by technology and its use. For example, Littlejohn et al. (2021) apply a sociomaterial perspective to address transitioning of teaching mode in a university setting. They investigate cultural barriers associated with moving teaching online, highlighting the continuing of existence teaching practices and the adoption of new practices to adapt to this transition. The framework of sociomateriality facilitated the understanding of faculty experiences as they are bounded and socially situated in an array of social and digital interactions. Specifically, their study highlights the role of material elements, such as technology used, in shaping experiences toward online teaching (Littlejohn et al., 2021). Similarly, Watson et al. (2021) adopt the framework of sociomateriality to address the transition to digitalized work arrangements. They document people's experiences during the first year of the pandemic, highlighting experiences associated with the transition to online work, and the tension and blurring of boundaries accompanied by this transition (Watson et al., 2021). Their study captures the continuous reconfiguration of work processes as they are carried out through digital means, as well as the fluctuation in social presence within such an arrangement. Gourlay et al. (2021) also adopt the framework of sociomateriality to address transitioning to online work. Specifically, they focus on how conventional boundaries are disrupted and reconfigured following this transition (Gourlay et al., 2021).

This paper argues that organizational research can benefit from adopting the frame of sociomateriality for addressing external environmental changes and the implications it entails for work practices. This can be achieved by addressing experiences associated with the transition to digitized work practices. This can also include the broader contributions the framework of sociomateriality can provide for research on a wider range of work practices shaped by the interplay between both social and material elements.

Sociomateriality can overcome the limitation of extant literature by unpacking the implications of the practices as they are formed and framed in response to the external environment (such as the implementation of safety practices, changes in business operations, etc.). In adopting the framework of sociomateriality, research can recognize the role of both the social (such as perceptions, decision-making, routines, and conversations) and the material (such as face masks, socially distant office space arrangements, digital health passports, etc.) in shaping organizational practices.

Table 2 provides a summary of potential practical implications of the sociomateriality framework, classified based on researchers' epistemological positions.

Table 2. Empirical implications for sociomateriality studies

Epistemological position	Applicable ontological position	Empirical implications
Critical realism	Substantialist ontology	Useful for addressing the emergence and persistence of sociomaterial practices over time, such as for historical analysis of social structures. This for example includes examining the change in the decision-making process that happened over time due to social and material elements imposed by the pandemic.
Interpretivism	Substantialist ontology	Useful for recognizing the context in which sociomaterial practices take place. It illustrates that different groups of people have different backgrounds and work at different times under different circumstances, and can, therefore, experience different realities. This, for example, includes addressing decision-making in an organization (a social process), while considering the role of both social and material elements within the context.
Agential realism	Relational ontology	Useful for emphasizing the ontological inseparation between social and material elements. This for example includes studying the decision-making process following environmental changes while viewing it as a sociomaterial process. Such an approach still requires a separation between social and material elements in analyzing the data and hence was criticized for its inconsistency.

5. CONCLUSION

This paper aimed to synthesize literature on sociomateriality to provide a foundational understanding of the framework and to facilitate its integration into organizational research. This paper presented theoretical and philosophical views associated with sociomateriality, highlighting the linkage between them to facilitate framework application in empirical research. Utilizing a thematic literature review, this research focused on the recent pandemic to outline gaps in current literature, specifically their social perspective in addressing the external environment.

This research is useful for organizational researchers, as well as researchers from other relevant fields, in pursuing research adopting the framework. Future organizational research can benefit from sociomateriality in recognizing the role of the material (such as workspace, face masks, physical distance, office layout, digital applications, machines, equipment, etc.) in shaping the implications of external environmental changes. This may include addressing practices post-pandemic as employees return to work at physical offices at their organizations. Future research can also devote attention to organizational face-to-face communication practices as they are constrained by the increased utilization of virtual platforms. Applying sociomateriality to address aspects, such as the amendment to work routines and social distancing at work, in addition to economic, demographic, and political changes affecting organizations is also a promising area for research.

Like any study, this research has some limitations that should be acknowledged. First, the study relies on a literature review, which is inherently limited by the quality and scope of existing research. The chosen timeframe (2020–2024) might exclude relevant studies conducted outside this period, potentially missing longer-term trends and insights. This can also be influenced by the specific database utilized. Additionally, the focus on English-language publications could result in language bias, neglecting valuable research in other languages. The thematic analysis approach, while useful for identifying patterns, may also introduce subjective interpretation, potentially affecting the consistency of the findings. These limitations suggest that further research, including empirical studies and broader literature reviews, can be useful for a more comprehensive understanding of the benefits of adopting the framework of sociomateriality for studies on organizational strategy.

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