

**Infollution (Information Pollution) Management, Filtering Strategy, Scalable Workforce, and Organizational Learning: A Conceptual Study**

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**Abstract:** Information generation is increasing rapidly on a global scale. The exponential advancement in information technology and communication has accentuated the problem of effective information management. Yet, employees' cognitive ability to process information has not increased in parallel with information generation. With the exponential rise of information, information pollution (infollution) emerges as a problem on an exponential basis. Infollution is among the greatest challenges of the 21<sup>st</sup> century. Nevertheless, based on information processing theory and dynamic capability, researchers have conceptualised that agile organisations can cope with information pollution by promoting scalable workforce and organisational learning. By employing coping strategies, filtering has been hypothesised as moderating the association of scalable workplace and organisational learning with infollution management. This research will extend the literature in the domain of information management and agile organisations. It will be particularly useful for information processors to identify quality information for improved decision-making.

**Keywords:** *Scalable workforces, organisational learning, information pollution, infollution management, agile organisation*

## 1. Introduction

The world is quickly becoming an information society which is characterised by an exponential increase in formal and informal information. The average quantity of generated information in two days is akin to the total information produced from the birth of civilisation until the year 2003. This is an age of unprecedented information production. Individuals can and do create excessive information at low costs. Individuals are free to collect and share information both consciously and unconsciously. This scenario generates a new problem known as information pollution or infollution. The literature is lacking regarding infollution management (Bawden, 2008). Researchers have concluded that excessive information generation challenges people to deal with infollution (Iqbal, Hassan, & Ahmad, 2018; Ozdemir, 2016). Infollution is linked to a dynamic environment (Watts, Shankaranarayanan, & Even, 2009). Organisations can achieve a competitive edge through dynamic capabilities in a dynamic environment (Teece, 2010). Organisational agility is considered a competitive advantage on the basis of three competencies (scalable workforce, organisational learning, and organisational infrastructure) (Nijssen & Paauwe, 2012). There is limited literature on organisational agility as a dynamic capability especially in the context of organisational behaviour (Nijssen & Paauwe, 2012). With ongoing advances in information and communication technologies, organisations need to be agile to deal with such a dynamic environment.

Agility has become a hot topic in current research because the environment is changing faster than organisations which are struggling to keep up (Gligor & Holcomb, 2012). Infollution contributes to a dynamic environment. Collaborative investigations emphasised the reliance of change and learning (Gligor & Holcomb, 2012). Knowledge management is associated with learning (Kamhawi, 2012). As such, organisational agility regarding organisational learning and a scalable workforce is critical for dealing with infollution. Researchers have suggested exploring infollution in terms of coping strategies and its impact on organisations (Firat & Kurt, 2008). Moreover, to the best of our knowledge, no empirical evidence is available about the relationship between the scalable workforce and organisational learning with infollution management. With the exponential advancement in information technology and communication, effective information management has become a more pronounced problem (Wang, Jiang, Meier, & Zeng, 2012). The vast volume of information impedes the employee's ability to be selective in seeking and accessing information (Blummer & M. Kenton,

2014). Employees can use certain standards to block the information they do not need and retrieve relevant information (Ghauth & Sukhur, 2015).

The current research introduces information withdrawal and filtering strategies as moderating variables in the relationship between agile organisations (scalable workforce) and organisational learning. The literature is silent regarding the moderating role of filtering and withdrawal strategies on the relationship of the agile workforce and infollution management. This research explores the relationship between the scalable workforce and organisational learning with infollution management. It also considers the moderating role of filtering strategy in this context of rife infollution.

## 2. Literature Review

**Infollution Management:** Infollution is defined as contaminated information which is of less importance, irrelevant, unauthentic, and unreliable, and lacks accuracy and precision (Wang et al., 2012). Similarly, Iqbal and Nawaz (2019) have defined information pollution as the overabundance of irrelevant, unsolicited, unwanted messages. Employees should realise the detrimental effects of infollution or risk adversely affecting the organisation. Infollution is ultimately concerned with the quality of information to enhance organisational performance (Iqbal et al., 2018). It will fundamentally change the way businesses compete and operate. Organisations that invest in and successfully derive value from their information will have a distinct advantage over their competitors. A performance gap will grow with the generation of relevant data. While the ability to capture and store vast amounts of information has grown at an exponential rate, the technical capacity to aggregate and analyse these disparate volumes of information is only now catching up (Iqbal et al., 2018). The information revolution has brought substantial benefits to businesses and consumers, but there are commensurate drawbacks of using big information. The availability of relevant information at the right time contributes substantially to the success of organisations. Traditional systems and approaches are slow, inflexible and face difficulty handling information generated at an exponential rate (Iqbal et al., 2018). Organisational information is typically inaccurate, historical and incomplete. To get a competitive edge, organisations need to have effective strategies to gather and manage information.

The world is experiencing an exponential rise in information generation because of advances in information and communication technologies. Information and computer scientists have exercised a systematic effort to overcome infollution with limited success (Iqbal & Nawaz, 2019). Continuous advances in research and development enhance the detrimental effects of infollution. With the proliferation of information and communication technology, the rate of information production has increased rapidly. This infollution makes it difficult for employees to collect quality information efficiently from diverse information sources. Information professionals, academics and computer scientists have suggested devising techniques and technologies for countering the effects of infollution. Infollution manifests differently. It results in disruptions along with the deteriorating quality of information (Iqbal et al., 2018; Ozdemir, 2016). Disruption refers to unsolicited and irrelevant messages especially in the workplace (Nielsen, 2003). Mobile phones have also deemed a source of distraction. Such infollution does not always emerge because of information technology (Frías, Rodriguez, & Castaneda, 2008). Superfluous messages also create unnecessary distractions (Nielsen, 2003). On the other side, with the reduction in the quality of information, the information supply becomes polluted. Such infollution emerge because of low accuracy and out of date information (García-Marco, 2011). The way information is presented could also reduce its quality (Iqbal et al., 2018). Likewise, wordy, unclear, unsolicited information in cluttered forms is difficult to understand (Coult, 2008). All this means that infollution is a problem that needs to be addressed in parallel with information quality.

**Organisational Agility (Scalable Workforce and Organisational Learning):** The study of organisational agility from the perspective of dynamic capabilities is a new area especially in terms of human resource management (Nijssen & Paauwe, 2012). Organisational agility is based on the concept of a configuration approach. The configurational approach claims that patterns of multiple practices provide the required results. The dynamic capability framework emphasises the combinations of competencies and resources that can be developed, adapted and deployed as a source of competitive advantage (Teece, 2010). Based on the configurational approach, multiple patterns of practices associated with workforce scalability, fast organisational learning, and highly adaptable organisational infrastructure drive organisations to succeed in

a dynamic environment (Nijssen & Paauwe, 2012). Nijssen and Paauwe (2012) elaborated three competencies of an agile organisation as possessing a scalable workforce, organisational learning, and organisational infrastructure. Before elaborating these competencies, it is better to understand the configurational character of agile organisations. Under the configurational approach, multiple practices generate the desired results.

**Scalable Workforce:** Employees/human resource is an important asset for any organisation. Researchers emphasise the reconfiguration and transformation of a workforce. Nijssen and Paauwe (2012) elaborated the required role of workforce scalability for organisations working in a dynamic environment. A scalable workforce is considered the first competency of an agile organisation. Workforce scalability enables organisations to align and reconfigure their human resources on an efficient basis (Dyer & Ericksen, 2006). These human resource configurations comprise four dimensions: competence mix, headcount, employee contribution and deployment pattern (Nijssen & Paauwe, 2012). Headcount is concerned with the number of permanent employees, while competence mix explains the employee's knowledge and skills. Deployment patterns offer insights into the employee's assignment across organisational and/or physical location. Employee contribution is concerned with the output of their job tasks. Under dynamic capability, a combination of competencies and resources is developed, employed and protected to gain competitive advantage (Teece, 2010). Multiple practices linked with scalable workforce and organisational learning lead to competing in a dynamic environment under the configurational approach (Nijssen & Paauwe, 2012).

**Organisational Learning:** Learning is a process by which employees can perform their tasks better and quicker through repetition and experimentation (Teece, 2010). Organisations deal with two different types of organisational learning in a dynamic environment. First, organisations are required to constantly monitor the external environment in order to be updated in the dynamic market under the umbrella of knowledge alignment (Nijssen & Paauwe, 2012). Knowledge alignment emphasises the right information at the right time to cope with market changes. Second, organisational agility shows concern about absorptive capacity where creation, adaptability, and application of information are considered (Volberda, Foss, & Lyles, 2010). Organisations deal with dynamic environments through efficient information creation and processing (Su & Chen, 2013). Based on organisational and proactive approaches, Nonaka and Von Krogh (2009) elaborated organisational knowledge creation as a process where individuals create, adapt, and apply information as required within their organisations. An organisation's knowledge creation has three building blocks, namely explicit knowledge, tacit knowledge, and knowledge conversion. Tacit knowledge is unarticulated with an application of an implicit rule of thumb. Knowledge conversion emerges because of interaction between tacit and explicit knowledge (Su & Chen, 2013). It comprises several organisational practices which have been categorised into four phases, namely creating, adapting, distributing and applying knowledge.

Firstly, employees share tacit knowledge among themselves where explicit knowledge is created. The combination phase involves the combination of newly formed explicit knowledge with existing explicit knowledge within an organisation. In the end, this explicit knowledge is embodied by employees in their tacit knowledge. These practices are applicable to the inter- and intra-organisational level either formally or informally (Su & Chen, 2013). Knowledge becomes quickly outdated in this dynamic environment. Thus, creating new knowledge in a dynamic environment is more important than processing obsolete knowledge. Constantly creating and obtaining organisational knowledge is crucial for agile organisations. In the absence of agile practices, organisational knowledge would become more rapidly outdated. Nijssen and Paauwe (2012) suggested organisational competencies such as rapid response, exploiting the temporary advantage, sensing the market, and organisational learning because of their substantial influence on knowledge creation within agile firms. Fast organisational learning is also recommended as the second competency of an agile organisation (Nijssen & Paauwe, 2012).

**Filtering Strategy:** The unabated nature of information pollution has made it a tiresome job for employees to collect quality information. The information materials and media are increasing day by day. Information is being presented to several large audiences with new techniques and approaches. The old information resources are going nowhere while at the same time there is the inclusion of new information and communication technologies (Gantz, Boyd, & Dowling, 2009). Coping strategies are useful in handling information pollution, i.e. filtering strategy and withdrawal strategy (Huvila, 2012). The filtering strategy is

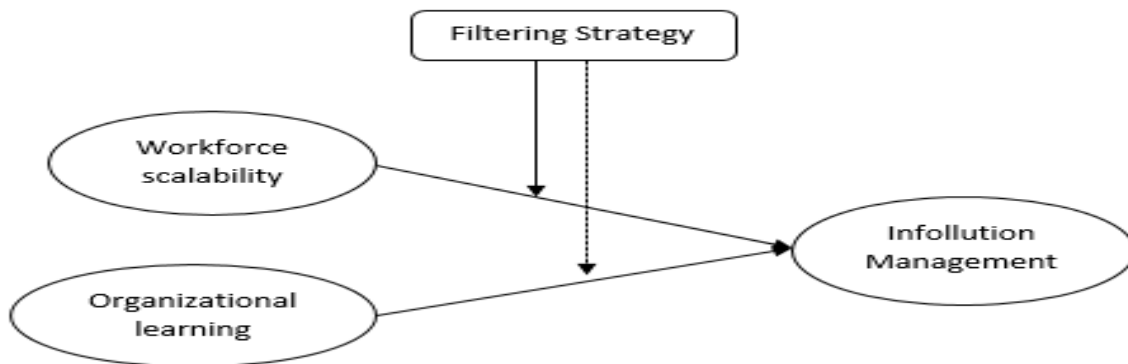
used to expel polluted information from the selected information sources. The filtering strategy is concerned to the information content (Savolainen, 2007a). The filtering and pull strategy have employee's interest in common by focusing only on a few relevant sources of information. Similarly, the push approach works in parallel to the filtering strategy by reducing the number of information sources based on accurate search criteria (Morrison & Gomez, 2014). As pull and push models are silent about the usage of a number of information sources, the filtering strategy is considered a major coping strategy.

Pull and push approaches to rely heavily on the application of electronic information sources although filtering takes into account a broader repertoire of information sources (Melinat, Kreuzkam, & Stamer, 2014). Researchers affirm usage of pull or push approaches or technologies dealing with information explosion (Edmunds & Morris, 2000; Eppler & Mengis, 2004). The pull approach focuses on the standard method of archiving quality information with an emphasis on the refined search strategies. The push strategy is concerned with the automatic delivery of information to the employees based on predefined information criteria to fulfil the current requirements. Both strategies have their advantages and disadvantages (Savolainen, 2007b). The pull strategy reduces information explosion through effective filtering of information. Timely information with easy access plays a vital role in enhancing information quality.

### 3. Theoretical Framework

According to the information processing theory, human beings have limited cognitive capacity in short-term memory, but with literacy and learning, the information processing capacity of organisations can be increased. A scalable workforce and organisational learning support better organisational memory for improved infollution management. Figure 1.1 depicts the framework of this study which demonstrates the conceptualisation of an agile organisation (scalable workforce, and organisational learning), infollution coping strategies (filtering) and infollution management. The framework is similar to that of Selmer, Jonasson, and Lauring (2013) and Nijssen and Paauwe (2012). Infollution management is the dependent variable. Finally, this study elaborates the moderating role of filtering strategy on the relationship of the scalable workforce and organisational learning with infollution management.

Figure: 1 Research Framework



### Hypotheses Development

**Scalable Workforce and Organisational Learning Improve Infollution Management Significantly:** With the proliferation of infollution, organisational agility is key to success. According to Whitehurst (2015), organisations must adopt “open organisation” practices to survive in the digital and social age. With the diversity of deployment patterns, employees experience cross-functional training, inter-disciplinary team, work-based training, coaching and monitoring (Girard & Girard, 2015). These are increasingly seen as business-driven and technology-enabled training (Holbeche, 2015). Diverse deployment patterns enhance not only the efficiency and performance of employees but also has a positive impact on the productivity of an organisation (Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002). Therefore, it is assumed that employees with diverse deployment experience would provide quality information. Higher autonomy and control in a job enhances the employee's ability to deal with problems effectively and efficiently (Jain & Kaur, 2014). A

high level of autonomy enables employees to simultaneously focus on multiple dimensions which direct them to a creative solution within a complex job. Autonomous jobs make employees work with flexibility and adaptability for high productivity (Wu, Griffin, & Parker, 2015). High demands, skills variety, and job control develop an employee's skill and knowledge and are useful in building new behaviours (Melnikas, 2010). Job autonomy improves the employee's capacity to decide on issues related to their job tasks. Such attributes make it easy for employees to deal with infollution. A scalable workforce is useful in securing customer satisfaction, quality improvements, learning curve, and economy of scope (Yang & Lin, 2009).

Information management is key to organisational success. Managers manage human resources, finance, material, machines, and information. The first four resources are known as physical resources, while the last is intangible or a conceptual resource. Managers use conceptual resources to manage physical resources. Management theory and practices are equally applicable to information management. The information manager ensures that the right employee or unit within an organisation receives the right information at the right time and makes the best use of it. Scalable employees experience human resource configuration which enhances their expertise, knowledge about processing, and competency (Armstrong & Taylor, 2014). Scalable employees are involved with a competence mix and are employed based on different deployment pattern (Dyer & Ericksen, 2006). Therefore, the scalable workforce can handle, process, and disseminate information efficiently and effectively. A scalable workforce remains updated with both internal and external changes of the organisation. As such, it is better at dealing with infollution management. Organisational learning involves knowledge creation and knowledge alignment. Employees prefer to collect real-time information and constantly monitor the outside world. So, employees can collect information which is good in terms of objectivity, accuracy, relevant, concise, and ease of understanding. Employees can identify information sources with a good reputation, value-addition, information security, and timeliness. They generously share, discuss and document information. The workforce is used to experimentation and simulation for knowledge creation purposes.

**From the Above Discussion, it is Hypothesised:**

**H1a:** A scalable workforce performs better infollution management.

**H1b:** Organisational learning has a significant positive influence on infollution management.

**The Relationship of a Scalable Workforce and Organisational Learning with Infollution Management Becomes Stronger in the Presence of a Filtering Strategy:**

There is an explosion of information, but an employee's ability to process such information has not grown in tandem (Blummer & M. Kenton, 2014). Excessive availability of information results in less systematic information search strategies. Employees find it difficult to discriminate relevant information from the large volumes of information (Eppler & Mengis, 2004). Empirical evidence considers information seekers as "satisficers". These "satisficers" employ certain criteria to judge when they have accumulated information 'good enough' for their tasks or decision-making (Karr-Wisniewski & Lu, 2010). This criterion is built on the basis of cognitive constraint, personal preferences or contextual constraints (Iqbal et al., 2018). Researchers claim significant influence of a filtering strategy on infollution management. Infollution is considered a subjective experience of the insufficiency of time required to make optimal use of available information resources in certain conditions (Iqbal et al., 2018). Organisational learning is based on knowledge creation and knowledge alignment. Knowledge creation is not relevant to specific knowledge but seeks pertinent information and where to find it quickly (Su & Chen, 2013). The filtering approach is based on prior schemata and resulting expectation (Sannino & Engeström, 2017). Such pre-existing schemata are part of knowledge creation. Therefore, it is claimed that a filtering strategy is beneficial for enhancing organisational learning. Employees focus on certain information sources available to them. Thus, filtering strategy (coping strategy) works based on the idea of satisficing. Reduction in the number of information sources and seeking information based on certain criteria makes it easy for employees to manage infollution and enhances the efficiency and effectiveness of the organisation.

**Therefore, it is hypothesised:**

**H2a:** The positive effects of a scalable workforce on infollution management will be enhanced as the filtering strategy is applied.

**H2b:** The positive effects of fast organisational learning on infollution management will be enhanced as the filtering strategy is applied.



#### 4. Conclusion

With rapid and continuous changes in a dynamic environment, decisions are made based on inaccurate, obsolete or unavailable information. However, organisations that permanently keep themselves updated about market changes and knowledge make quick and efficient strategic decisions. Organisations need real-time information for strategic decision-making. The universalistic approach emphasises the importance of best practice while a contingency approach deals with the strategic fit of employees HR practices (Fiss, 2011). Organisational agility is assumed to be a dynamic capability. Real-time information is concerned with the information with the zero-time lag between its generations and reporting. Employees are good at fulfilling organisational needs based on the relevant and updated information. Access and monitoring of real-time updated information about the dynamic factors of the market enable organisations to respond to such transformation efficiently. In another case, management would remain silent about new required alignments and configuration in the dynamic environment. Agile organisations are capable of accumulating real-time information and monitor the external environment to remain aligned with respect to the dynamic market. Based on this, the authors find it useful to tackle the problem of infollution. Authors recommend empirically checking this proposed research model in diverse sectors to deal with the issue of generalisability. Furthermore, Iqbal and Nawaz (2019) have suggested a pivotal role of virtual organization coping with rife information pollution.

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