

## **A Technology-People-Integrated Toolkit for Retail Care Management During a Crisis**

### **Abstract**

Mental volatilities are seen to be on the rise when it comes to retail employees and consumers. Specifically, in times of crisis there is a need to be able to customise care management in a way that is coherent and comprehensive to address mental volatility. This customisation is sought in technology and people. However, thus far there is no toolkit for a specific crisis-sensitive care management protocol. We, therefore, build on an ADO framework-based, illustrative case study of three UK retailers wherein we derive and exemplify how mental burnout in a volatile environment becomes a very important care management necessity which has been neglected thus far. Further, we detail how to contend with this need and how there is a demand for customisation, comprehensiveness, and consistency. In this respect, we conceptualise a technology-people-integrated toolkit that can be implemented with immediate effect for retail care management. We detail the practicalities work in two scenarios. To conclude, managerial and theoretical implications of this toolkit and study have been detailed along with the paper's limitations and suggestions for future research.

**Key words:** Retail care management, Technology-people-integrated toolkit, crisis, Antecedents-decisions-outcomes, Covid-19

## **1. Introduction**

Care management as a concept is strongly rooted in the health and social care field. Since its introduction in the late 1970s (Phillips, 1996), the extant literature from the healthcare sector indicates that there is no single, unanimously accepted definition of care management. This could be potentially attributed to the fact that the health sector faces specific challenges due to its nature as a complex dynamic work environment involving multiple professions and stakeholders with diverse ideological influences (Hyde et al., 2009). Similarly, in other sectors such as retailing one cannot encounter a definition of care management. For the needs of this paper care management in retailing will be defined as a strategy in place to adequately support retail employees' and consumers' physical and mental health in times of necessity or crisis (for example, a pandemic).

During a crisis, such as covid-19, the style of retail care management has come under a lot of scrutiny and forced change (Paige, 2021; Wright, 2021). Retailers (namely supermarkets) had to develop, consolidate and implement new, unfamiliar and challenging policies to keep employees and customers safe (Mayer et al., 2022; Pantano et al., 2020). For instance, retail employees were called to: undertake additional roles as enforcers of safety and public health protocols and rules (i.e., masking, social distancing) (Northington et al., 2021); implement operational changes (e.g., one-way systems in stores); or to deal with customers' misbehaviours such as verbal and physical abuse when products were limited or when they were required to wear face masks. At the same time, they had to cope with new and extreme workplace stressors such as anxiety and mental health distress due to ongoing work-related exposure to covid-19 (Mayer et al., 2022). Specifically, what can be seen is due to uncertainty created by a crisis there is a need to control and ensure consistency, coherence, and customisation within care. This necessity seen in real case examples below has mainly brought out the understanding of mental volatility within care management, wherein care management

literature indicates that the focus was on physical orientation and static mechanisms prior to the pandemic (Vader et al., 2021). Furthermore, the approach of care management was mainly via face-to-face modes of voicing concerns to the line manager (Nazir, 2021). Food retailing companies operating in the UK such as Tesco, Aldi, and Marks & Spencer (M&S) have had to quickly change their care management policies to better suit the magnitude of a pandemic such as covid-19 (Stratten, 2021). Particularly, the focus has had to change to foster safety, whilst focusing on a lesser burnout ratio and mental health repercussions (Hamilton, 2021; Oteh et al., 2021) from social distancing and isolation of retail employees (Ceryes et al., 2021). In relation to consumers, the changes made by the three companies have been to ensure safety (Tesco, 2021), peace of mind (Equiniti, 2021) and specifying the sustenance of the variety of essential commodities for consumers that stem from scarcity and unknown health requirement concerns (Fitzpatrick et al., 2020; Laato et al., 2020; Shahbaz et al., 2021).

While the importance of care management as a research topic has been investigated in the health care sector from different angles (e.g., in terms of patients' perspective (O'Malley et al., 2017); employees' views (Andolhe et al., 2015; Chen et al., 2017); the impact of information technology (Gardner et al., 2019; Nguyen et al., 2021; Sreejesh et al., 2021); as well as the evaluation of the effectiveness of care management services (Chia-Ling et al., 2015; Lee et al., 2014; Kirkpatrick et al., 2019) in the retailing domain its research scarcity remains noticeable. In particular, contrary to prior studies which have considered the impact of the covid-19 health crisis on the retail industry and specifically on the future of retailing (Roggeveen and Sethuraman, 2020; Verhoef et al., 2022), on retail employees (Mayer et al 2022; Northington et al., 2021; Rodríguez-López et al., 2021) and on consumer behaviour (Ahmadi et al., 2021; Islam et al., 2021; Laato et al., 2021; Pantano et al., 2020), there is a dearth of academic knowledge of how care management in the aftermath of a crisis such as covid-19 within retailing ought to be undertaken (Kohli et al., 2021; Oteh et al., 2021; Standish,

2021) and more precisely in terms of a toolkit. This is due to the fact that the understanding of what new facets need to be covered is missing in the literature. To address this need for clarity, in order to prepare a comprehensive toolkit, we need to delineate via a real-case-study approach of what the implications of covid-19 were for retail care management regarding retail employees and consumers, what were the steps taken by these companies to alter their care management practices for employees and consumers, and what outcomes in terms of consequences prevailed (Barbieri et al., 2021; Ceryes et al., 2021; Shahbaz et al., 2020; Ying et al., 2021).

In this light, we explicate the new mental facet and sub-facet of coherence, customisation, and consistency that must be considered in a time of crisis within retail care management (Barbeiri et al., 2022; Ceryes et al., 2021). This paper thus aims to address the following needs in terms of extant care management in retailing literature. First, depict a detailed antecedents-decisions-outcomes (ADO) understanding of retail care management changes to policy and strategies undertaken by these three companies as a result of covid-19. In this regard, we exemplify retail care management strategies' consequences for companies during a pandemic of this magnitude. Second, having identified the approaches we delineate the major shortcomings of the approaches which further enable understanding of the new mental facet emerging and a sub-facet of customisation and consistency to account for in retail care management within a volatile lens. Third, we develop a technology-people-integrated retail care management toolkit which enables undertaking care management during a crisis such as the current pandemic. This paper, by proposing a toolkit for retail care management encompassing employees and customers with fitting recent technologies, provides a deeper understanding of care management in retailing and contributes to the poor extant literature on the topic. Furthermore, the toolkit proposed will assist not only retailers but also managers in other service sectors to address one of the most important challenges in today's uncertain times.

It can thus be used to design programs aimed to effectively meet employees' and customers' needs and help maintain their wellbeing.

## **2. Literature Review**

### *2.1 The Retail Care Management Dynamism*

Academic literature on retail care management is sparse. Few papers in the recent past, have mentioned care management issues in retailing settings (Laato et al., 2021; Northington et al., 2021; Oteh et al., 2021). Furthermore, there have been several organisational reports that have determined what is and where care management may head in the future (Greenwood and Anas, 2021; Guillot, 2020; Kohli et al., 2021; Mayer et al., 2021; McKinsey, 2022). In this regard, there have been quite a few common themes. These are namely – safety requirements (physical), physical stressors including long working hours, absenteeism-related pay cuts, expense of making mistakes, inconvenient working hours, and pace of change in terms of technology (Greenwood and Anas, 2021; Guillot, 2020; Kohli et al., 2021; Mayer et al., 2021; McKinsey, 2022; Wright, 2021).

However, this was bound to change, with restrictions now in place, as we have seen a shift in the context, so there will be a shift in the themes to be focused on in terms of care management. Starting with mental health and burnout, effect of isolation, and a few others (Ceryes et al., 2021). However, what they are is not entirely known in a retail context. Therefore, below in every subsection we cite literature taken from contact-specific sectors such as healthcare to give an understanding of what themes are observed in other contexts, and how it could be applicable to retail, given the pandemic's context.

## 2.2 Retail employees' viewpoint

Over the years, prior studies (i.e., Andolhe et al., 2015; Lee et al., 2014; Poncet et al., 2006; Wang et al., 2007) have explored mental health as an issue within care management which has been an important consideration. However, the pandemic is the only thing that has brought it to light within a retail care management context. Also, some other studies (i.e., Hyde et al., 2009) focused on aspects of care management such as appropriate training, on employees' intention to leave or stay at work (Radford et al., 2013), on safety requirements (physical), physical stressors including long or inconvenient working hours (Andolhe et al., 2015), absenteeism-related pay cuts (Poncet et al., 2006), expense of making mistakes (Chen et al., 2017), and pace of change in terms of technology (Radford et al., 2013). The studies focused thus far on retail care management will have to change to incorporate these issues. However, since such a claim needs more evidence, and the context and literature are evolving and sparse respectively, we will have to utilise a real-life contextual understanding of what themes emerge, what difficulties are seen by retail consumers and employees, and how they can be bridged via a hybrid toolkit.

Table 1 presents what care management has been seen in varied contexts (mainly healthcare management), and how it is applicable from a retail employee's viewpoint, along with an indication of how it has not been implemented within a retailing context. Furthermore, how the evolving situation of a pandemic brings the need to account for newer themes.

**Table 1: Care management studies from the healthcare sector and its applicability and omission within the retail sector for employees**

Author/(s), Year	Purpose	Main Findings	Applicability to Retail Employees and Non-Implementation Extraction and Change of Context
Andolhe et al., 2015	To investigate emotional stress and burnout and policies and strategies to be in place for it among ICU nurses	Moderate stress levels were found due to working conditions; however, it was unreported due to fear of redundancy. Enforcing more control and adequate sleep was a coping strategy for those nurses in the ICU shifts.	Stress levels will be significant in a contact job role. However, control cannot be enforced as a coping strategy due to the nature of the sector. In this regard, sleep too is inadequate given the shifts and so as a coping strategy it is limited to number of shifts one takes (Laato et al., 2020). The need for mental well-being is slowly only being understood in retail care management, which is why people and AI, need to be mapped appropriately to enhance the understanding to enable care management.
Chen et al., 2017	Description of a family caregiver and their burdens and a new care	The primary source of caregiver burden was identified. Assessment identified nursing-care-related problems as the	These same problems can be seen as apt for retailing. Thereafter, a similar care management program via interactions can be seen to be implemented for retail employees. However, with the on-going pandemic, these

	management program to address the needs	primary source of caregiver burden in this case, with identified stressors including a lack of knowledge regarding patient care, medication management problems, sleep disorders, and inadequate social resources	factors have come to light, owing to an evolving situation and not prior to this (Barbeiri et al., 2021).
Hyde et al., 2009	To report six NHS organisations' outlook on care management and the employees' expectations	Employees expect in their appropriate infrastructure, training, and immense support. These form a part of care management	In retailing, training is provided, as is infrastructure as well and support has prior to the pandemic, been observed as a code of conduct which is more from an absenteeism and presenteeism angle with pay cuts, etc. However, during a crisis and in the context of retailing, training is minimal, online, and also the infrastructure is online too, this puts added pressure to perform to keep a job than to be cared for (Ceryes et al., 2021).
Lee et al., 2014	To investigate the relationship among care management centre service effectiveness, care management personnel, and burdens in relation to the provision of care services from the perspective of caregivers.	Satisfaction toward the care managers' professional competence was associated with a lower physical burden for caregivers. Caregivers' psychological and social burdens were associated with overall satisfaction with the care management centres and their satisfaction with the services provided by care managers.	This applies in understanding and insight to retail employees. However, the practicality of implementation is still to be seen. This implementation can be brought out via a technological-human hybrid mechanism.
Poncet et al., 2006	To identify determinants of burnout syndrome in critical care employees	High levels of burnout exist and the cost of burnout syndrome in nurses includes decreased quality of care, absenteeism, and high turnover rates.	This can be seen to be true for retail employees, however, mechanisms of safeguarding them from a care management perspective has not been seen till the pandemic threw light on these needs. Thus, these needs and some more determinants will be imperative in a crisis and retail employee care management perspective.
Radford et al., 2013	To investigate factors influencing personal care employees' intention to leave or stay	Supervisor support and on the job embeddedness of support, training and care were primary factors influencing stay or resignation.	For retail employees, such support is of paramount importance and what can be seen is prior to the pandemic, there were not many support system mechanisms in place (Laato et al., 2020). Thus, a hybrid system of care management needs to be in place.
Wang et al., 2007	To explore the relationship between caregiving burden and terminally ill gastrointestinal cancer patient disease characteristics, demographic backgrounds, level of social support, self-care efficacy, fear of death, and self-perceived symptom distress in both patients and primary caregivers.	of caregivers of terminally ill gastrointestinal cancer patients in hospice homecare had a significantly higher caregiving burden than that of those recruited from outpatient departments.	If we flip this for a retail employee frame of reference, then being a contact work atmosphere wherein retail employees have to ensure consumer satisfaction of their needs – then the burden of caregiving, will be higher.

Source: The current authors.

### 2.3 Consumers

Taking the same studies from Table 1 and O'Malley et al.'s (2018) study, we will look at the issue from the consumers' applicability and frame of reference. From these studies (Table 2), we can understand that the main facet of change for care management is the mental volatility of the pandemic and its effects on care management (i.e., Lee et al., 2014; O'Malley et al.,

2018). However, literature even in other sectors such as healthcare (Andolhe et al., 2015; Chen et al., 2017; Hyde et al., 2009) has mentioned stressors, effect of stressors, employee turnover and job cuts, presenteeism, or absenteeism. None have really delineated the mental facet from a contextual perspective. In this respect, the descriptive case study approach will give further understanding into the new contextual facet and sub-facet to be accounted for within retail care management specifically.

Table 2: Care management studies from the healthcare sector and its applicability and omission within the retail sector for consumers

Author(s), Year	Purpose	Main Findings	Applicability to Retail Consumers and Non-Implementation Extraction and Change of Context
Andolhe et al., 2015	To investigate emotional stress and burnout and policies and strategies to be in place for it among ICU nurses	Patients felt the stress factors of the nurses in the ICU, as it was palpable. They felt the care may have been overlooked due to care-giver's stress and sleeplessness.	Same findings can go for consumers in a retail shop when they feel there are not many retail employees around, or that most are busy with other work stress leading to missing out on answering queries. However, previously other than complaint portals and even now chatbots and calling hotlines, are the only mechanisms. Currently, there is no care management mechanism in place to solve this.
Chen et al., 2017	Description of a family caregiver and the burdens and a new care management program to address the needs	Lack of knowledge of caregiver for a scenario affected patient behaviour. Patients indicated resisting any new measures for health, as they didn't feel safe.	Retail consumers, due to the nature of the setting, have been seen to be sceptical if they sense the employee does not know their offerings well enough. So, they shift and ask another retail employee. In this case, this leads to changing the retailer they go to, rather than everything else. However, given the context of a pandemic, changing retailers when retailers themselves are coping, is not really a scenario to contend with. Therefore, an appropriate customisable approach via a hybrid mechanism is favourable based on the consequences seen.
Hyde et al., 2009	To report six NHS organisations' outlook to care management and the employees' expectations	Patients are seen to model their impression of care from the unmet needs that they have. Further leading to adverse effects.	Retail consumers too have unmet needs that are seen to be cornerstones in their impression of care. However, accounting for them is more from a social support angle. This has not been evidenced in care management literature. However, real-life examples can give us a further understanding. This will enhance the hybrid framework as well.
Lee et al., 2014	To investigate the relationship among care management centre service effectiveness, care management personnel, and burdens in relation to the provision of care services from the prospective of caregivers.	Service effectiveness depended a lot on the care management protocol in place. Implementation of care management services has improved satisfaction even including patients. However, centre services remain inadequate to reduce the psychological and social burdens of patients.	Consumers too during a pandemic have more social and emotional burdens to be taken care of whilst in the process of purchasing. In this, regard the protocols in place has been undefined and there isn't much consensus. Therefore, further understanding of needs and their definitions in a mechanism is of paramount importance.
O'Malley et al., 2017	To explore patients' experiences with care management, what they found useful, and what needs improvement.	Patients have mixed perceptions of care management Patients who had regular contact with, and a desire to work with, their care manager valued the care management services provided. These patients valued care managers who listened to them and explained their conditions	The first finding of this study is applicable to the retail setting, as many consumers have indicated a loss of personal interaction and knowing each other. However, there isn't a mechanism indicating how all these can be incorporated into one care management system for employees and consumers.



		and options in lay terms, helped them navigate the healthcare system and community resources, and followed up after hospitalisations.	
Poncet et al., 2006	To identify determinants of burnout syndrome in critical care employees	The cost of the burnout was perceived by patients as unwanted atmosphere that they have to deal with	For retail consumers, since the process is fast and quick, the lack of knowledge was perceived more as incompetence until the pandemic. With the pandemic though, lack of knowledge is understandable as a burnout issue, as even the consumer is going through it. However, up until recently, no one really thought that consumers can exhibit burnout during their purchase endeavours.
Radford et al., 2013	To examine factors influencing personal care employees' intention to leave or stay	Patients were not happy with constant change of care-employee and liked a sense of sustaining the same care from the same person.	From a retailing perspective, consumers do like to have the same person interacting with them but change in such a setting is inevitable due to rotation of retail employees. Therefore, for consumers prior to the pandemic it was not a consideration. However, post pandemic elderly population do feel the need to see the same person guiding them through a purchase due to surrounding uncertainty existing – need for continuity.
Wang et al., 2007	To explore the relationship between caregiving burden and terminally ill gastrointestinal cancer patient disease characteristics, demographic backgrounds, level of social support, self-care efficacy, fear of death and self-perceived symptom distress in both patients and primary caregivers.	Social support for patients along with comprehending the situation, was perceived as the most important factor	For consumers in a retail setting, this becomes applicable specifically during a pandemic of the magnitude we have seen. Including the factor of fear of contraction from a retail employee or a fellow consumer. This has to be mainly addressed appropriately in a care management mechanism which hasn't been seen so far. In the sense, policies are there to keep them safe, but not social support. From the definitions, we have seen so far, attending to consumers' needs is the delineation, however – their needs can be pertaining to emotional support and satisfaction of purchase too – which has not been accounted for thus far.

Source: The current authors.

### 3. Methodology

As the context of the pandemic in relation to the retail sector is a volatile one, in this paper we utilise a descriptive case study approach (Yin, 2014) to understand the mental facet and further considerations. We take three UK firms, namely Marks & Spencer (M&S food), Tesco, and Aldi to present an ADO (Antecedent-Decisions-Outcomes) understanding based on the descriptive insights of the sudden decisions taken by firms and the outcomes thereafter owing to the antecedent – i.e., the pandemic. For this study, the focus was on a single market: the United Kingdom. Given the context and the aim of this descriptive study, our strategy behind selecting these three firms was to include firms that would meet the following criteria:

- (i) They constitute part of the top ten firms in the UK food and grocery retail market in terms of market share and popularity (positive opinion of the food retailer),

so the generalisability and adaptability of the themes' extractions and toolkit could be feasible globally. In terms of market share for 2020, Tesco led the market with 25.4 percent, Aldi ranked fifth with 7.6 percent, while M&S was in the 9th position with 3.4 percent (Mintel, 2021). Regarding popularity, M&S Food, Tesco, and Aldi were the most popular three supermarket chains in Quarter 2 of 2022. M&S Food is the top-ranking food retailer with 78 percent of respondents having a positive opinion followed by Tesco with 76 percent and Aldi with 72 percent (Bedford, 2022).

- (ii) They have raised concerns about the way in which retail care management needs to function in such a time of crisis.
- (iii) They have attempted to amend their care management practices in light of the covid-19 pandemic but faced consequences.
- (iv) They have not been studied in a retail care management setting so far.

Once we chose the three firms, we prepared an understanding of the firms' current care management to retail employees and consumers, the changes in strategy and policy undertaken during the pandemic, and the outcomes received. This descriptive insight is presented in the form of an ADO understanding with contemporary reports regarding the pandemic and the companies in context. Thereafter, we make use of the insights to identify the key themes (i.e., a common thread among the cases) within context.

The reason for using a descriptive three-case study approach can be attributed to a variety of reasons. Firstly, Johannisson and Hiete (2021) refer to a descriptive case study approach as one which enables understanding phenomena within a specific context. Yin (2014) spells out that descriptive case studies describe the phenomenon in context. Given the complexity of the pandemic and its real-world implications (Kohli et al., 2021; McKinsey, 2022), a descriptive case study approach will offer an adequate understanding of the

implications of the antecedent in question and retail companies' decisions and outcomes (Loyd et al., 2014). Further, equipped with this understanding, we can then provide solutions applicable in real-world contexts of how care management as a mechanism can be developed and implemented utilising people and feeling-AI to enrich the practice.

To elaborate, as the whole intent for undertaking a descriptive case study is to understand contextually the “how” and “why” of a specific phenomenon with the researcher’s little control “while allowing investigators to retain holistic and meaningful characteristics of these events” (Yin, 2014), we, via the descriptive analysis, identify the key themes in context with regard to new care management practice considerations to further enable their implementation and execution. Specifically, based on the descriptive ADO presentation and insights thereafter, we find a common thread among the cases within the context – which led to one main theme and a sub-theme therein supported by cogent literature. With that understanding we utilised contemporary reports and literature from the field of AI to address how the main and sub-theme can be addressed for retail care management’s appropriate and adequate practices, if powered by an integration of feeling-AI and human agents. This is similar in methodology to a few other descriptive case studies (Kauffman, 2000; Kivinen, 2022; Pantano et al., 2022). To this end, we developed the proposed toolkit applicable to retail care management during times of crisis.

### *3.1. The cases*

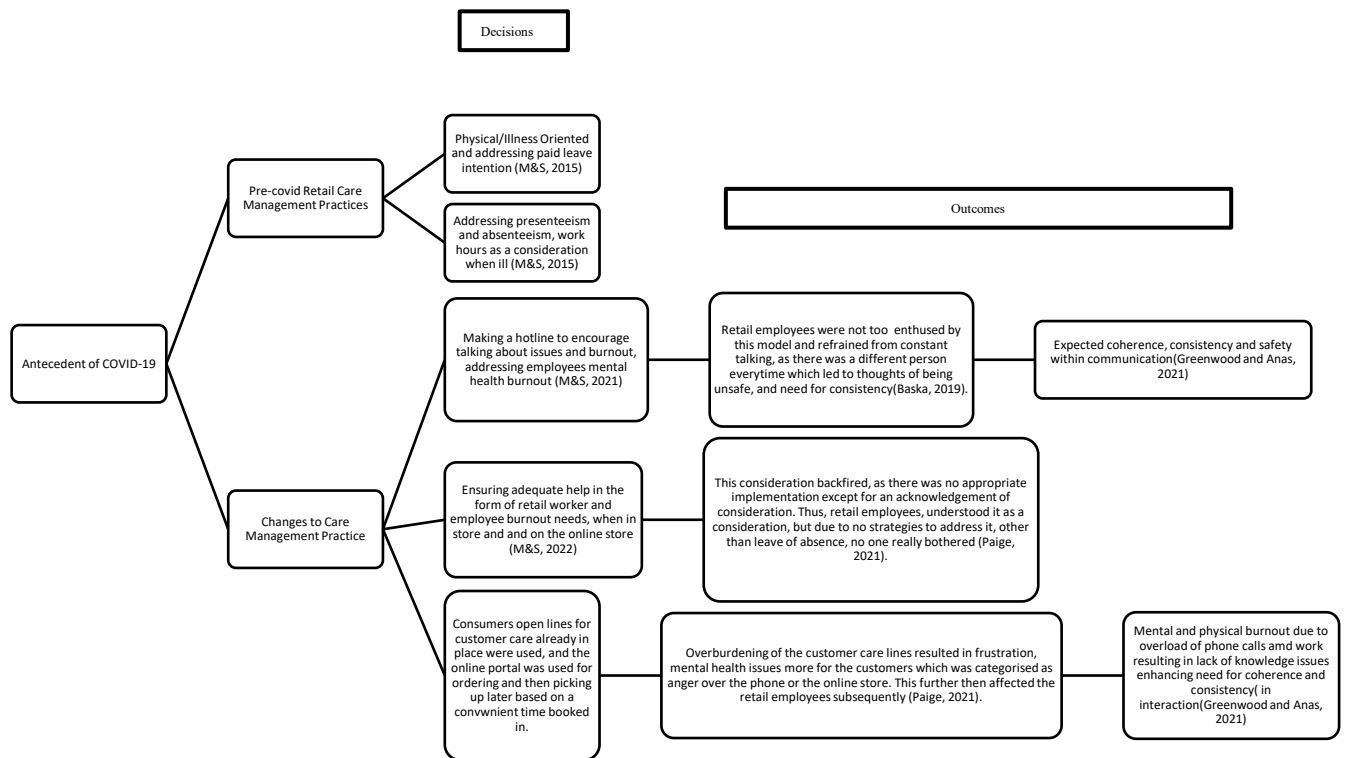
In order to further find what needs to be addressed apart from literature understanding of care management within retail– is the time capacity of real-time data. Specifically, we must understand where and what the older strategies were, what technological and people changes were brought in, and what the issues/implications were in order to be able to successfully implement a feeling-AI powered human agent approach to retail care management.

*Case 1: Marks & Spencer (M&S)*

The figurative understanding (figure 1), provides insight into the care management policies for retail employees and consumers undertaken at Marks & Spencer, thus followed what literature indicated of physical orientation (Greenwood and Anas, 2021; Guillot, 2020; Kohli et al., 2021; Mayer et al., 2021; McKinsey, 2022; Wright, 2021), as opposed to mental and global policy facet orientation whose changes affected physical and on-site and online behaviour (Wright, 2021). Specifically, the facets under consideration prior to the pandemic were illness, absenteeism, presenteeism and working hours. Now, the facets of care management policies had to include specific physical and mental factors – self-isolation, burnout from work, burnout from isolation, symptoms and the fear related to these symptoms. In this regard, all the physical facets whilst covered, it was the mental facets as combined with the physical facets that were the difficult ensuing proposition.

Therefore, whilst strategies were upgraded, the mechanisms of addressing the mental facets in their volatility, were still old-school in the sense that utilising existing methods of hotlines and chatbots, that were not entirely modified for the mental repercussions' provisions, only gave way to a situation of superficial care management. This further initiated a chain reaction of both employees and consumers avoiding the provisions that resulted in more closure to the approaches from employees and consumers and not much openness.

Figure 1. Changes in care management as a result of the pandemic undertaken by M&S.



Source: The current authors.

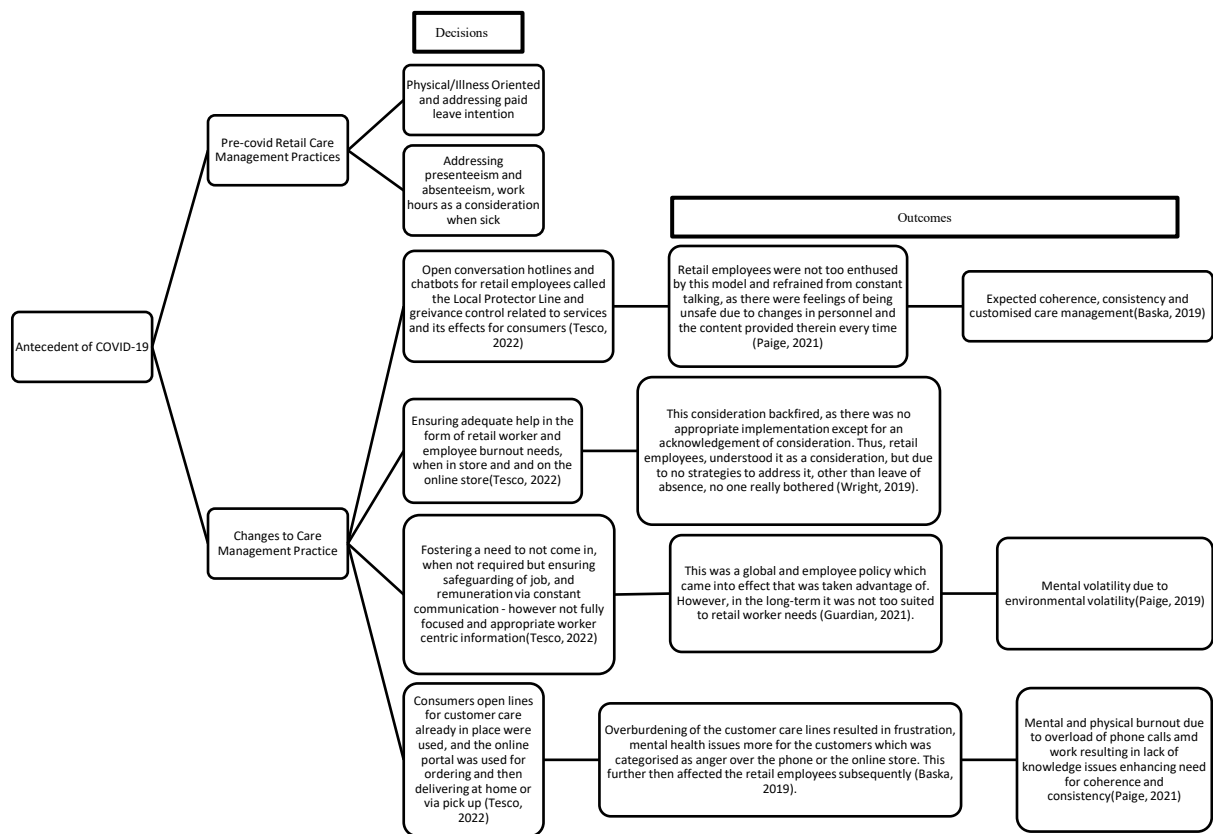
### Case 2: Tesco

From the case of Tesco, we can understand that care management was static and mainly covered grievance and care from a physical orientation. However, the antecedent of the pandemic has resulted in understanding that physical effect leads to mental repercussions to be included in the care management facets. Further, that mental burnout on its own can be a facet to be addressed.

Therefore, from this case we can extract the insight that mental health in relation to insight of repercussions and feeling of uncertainty needs to be addressed in care management. In this respect, the need among consumers and retail employees to have customised chatbots

and discussions when addressing grievances, has been brought to the forefront. As the existing system's modification did not really provide for adequate care. Like the employees and consumers of M&S, Tesco employees and consumers have been observed to voice their frustration and disapproval of the mechanisms used, which has brought out a major care management factor effecting in mental health facets – non-customisation of knowledge for the individual.

Figure 2: Changes in care management as a result of the pandemic undertaken by Tesco.



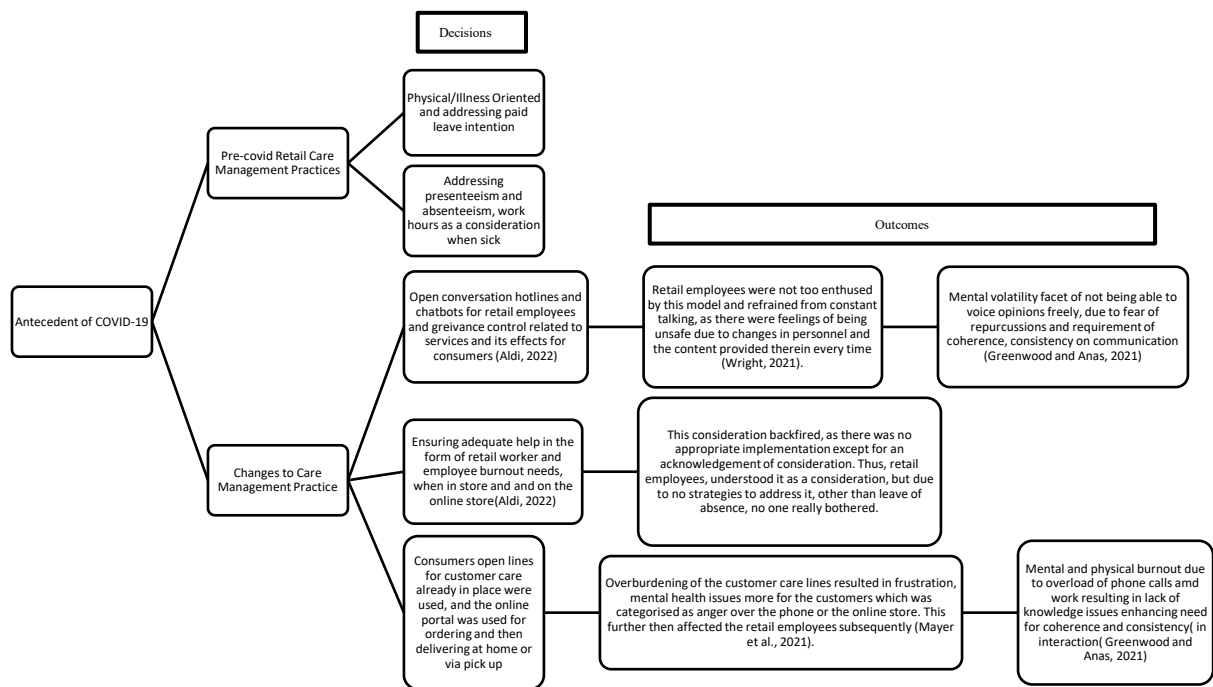
Source: The current authors.

### Case 3: Aldi

Aldi initiated appropriate care for retail employees and consumers via their online portals and their phone lines, in addition to in-store. However, as a result of social-distancing, interaction

was preferred online via chatbots both as a company, and as retail employees and consumers. This resulted in employees and consumers having to interact with an interface that wasn't a very familiar place for everyone. In this respect, concerns were taken in as static and not entirely customised for employee/consumer. This led to more ambiguity among the involved parties, resulting in a need to get into a system or preferring a system of talking to people. There too, the information was vague. Thus, this then led to more stress among employees and consumers resulting from non-customised information mental stress.

Figure 3: Changes in care management as a result of the pandemic undertaken by Aldi.



Source: The current authors.

## **4. Major Shortcoming Extracted**

### *4.1. Embryonic mechanism used in relation to people's complexity*

Essentially, corporations found themselves in a situation of extreme pressure at a time of uncertainty due to the abruptness of the pandemic (Ceyers et al., 2021). This resulted in a situation where situational AI and feeling-AI were not at the top of the list consideration, but stocking of shelves, making sure produce was fresh, and available etc., were (McKinsey, 2022). Therefore, when the notion of addressing employees and consumers' mental health arose within care management, the existing mechanism of hotlines, and chatbots utilised for communicating lesser significant issues for consumers and employees were tweaked to start the mechanism, resulting in still understanding the physicality and not the mentality (Aldi, 2021; M&S, 2021; Tesco, 2021).

Thus, it backfired due to the embryonic state of the AI powering the mechanism. Chatbots utilise "thinking AI" (Mikalef et al., 2022; Kellogg et al., 2022) which is driven by standardised protocols and AI-mechanisms referred to as Natural Language Processing (NLP) text-video conversation AI (Huang and Rust, 2021). Specifically, once the chatbot window presents itself, the user can enter their question in plain, syntactical English (Linders, 2018). The bot's language recognition functions break down the question and, at the speed of light, compares the query to its data bank of previously asked questions to look for ways customers have achieved satisfying results in similar situations (Tremblay et al., 2012).

This is comparatively primitive in relation to feeling or situational AI, which based on 100,000 different permutations and combinations of prospective situations and answers/questions that can then process itself, the situation and customise the follow-ups based on existing context and content provided by the user (Huang and Rust, 2021; Villegas-Garviz and Martin, 2022). Thus, making it customised and in real-time, not based on previous answers (Ahmed et al., 2022; Kellogg et al., 2022). This is essential, as humans are complex, and



different in every way, and using previous answers in order to address a new person will lead to miscommunication, feeling of mistrust, anxiety, more fear, and also more mental health repercussions of self-doubt (Linders, 2018; Wang et al., 2022). In a nutshell, futuristic AI-orientation is necessary to solve an evolving situation and its repercussions, not an embryonic one (Cheng and Jiang, 2022).

In the case of the hotline, the overload of calls essentially shut off the system (Wright, 2021). In this regard, we can understand that due to the backward state of AI-powered chatbots used, the hotlines were seen to have higher demand as a result of employees and consumers wanting customised chats pertaining to their situation (Huang and Rust, 2021; Mariani et al., 2021). However, the answers provided and looked for in the hotlines were not adequate, nor customised due to the fact that, as a result of the evolving situation, time was of the essence, so a standardised text was given and utilised as part of the answers to situations on calls (You et al., 2021). This standardisation further infuriated consumers and employee rather than taming the issue.

## **5. New Facet and Sub-facet to be Considered within Care Management Stemming from the Crisis for Retail Employees, and Consumers**

### *5.1. Mental volatility in relation to environmental volatility*

Within this topic, there is a need to stress mental health issues stemming not only from work, but also the stress of living in an uncertain time. For instance, mental burnout of losing family, of being in a position of a caregiver, of having to volunteer more services in an uncertain surrounding (Andolhe et al., 2015; Ceyers et al., 2021; Northington et al., 2021; Wang et al., 2007). Whilst the physical orientation to performance is the one that has been the focus thus far, every physical situation leads to a mental repercussion. This has come to the forefront now with regard to the pandemic's outcomes.

The care management portals, therefore tweaked for the situation, can be observed as not conducive to the current situational pre-requisites sought. Therefore, a new system, that enables appropriate mental-specificity in online and offline communication/interaction is needed. In this regard, we can see the mental sphere delineating a specific requirement when it comes to retail employees and consumers.

### *5.2 Expected consistency and coherence of customised content, system and personnel to contend with mental volatility*

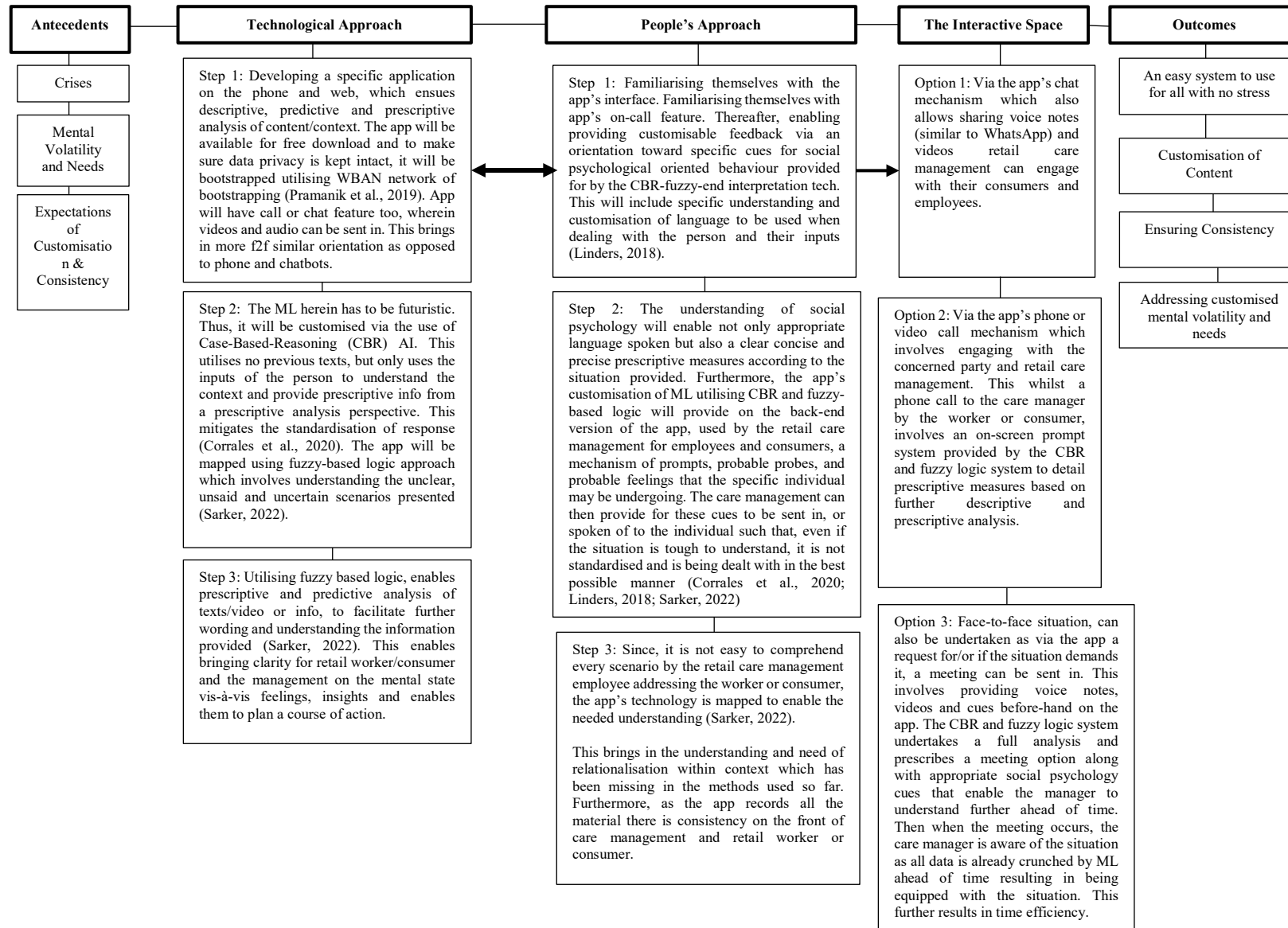
Within the mental volatility main theme, via the literature, and the case studies, we can understand that in a time of crisis, the methods adopted failed to provide for appropriate outcomes in care management since consistency of content for a specific employee or consumer was missing (Matsunaga, 2021). In this respect, we can understand that in a time of uncertainty, there is a need among retail employees and consumers to hold on to some form of consistency and coherence, during their interaction (Alam et al., 2022; High and Crowley, 2018). Especially, content and context specific consistency has been seen to be key. In this regard, the content conveyed via a chatbot is generic (Hartmann et al., 2019). The content on a hotline too is generic (Guardian, 2021). This can be attributed to the fact that given the magnitude of a workforce, the time allotted for a specific consumer or employee is limited and standardisation of content is an easy mechanism (Ahmed et al., 2022; Alam et al., 2022; High and Crowley, 2018; Matsunaga, 2022).

However, given the complexity of individuals and the complexity that stems from an evolving pandemic, the mental complexity is bound to differ in every aspect from employee to employee and consumer to consumer (McLaren and High, 2019). Therefore, at this time, standardisation is avoided, and consistency and coherence in relation to their feelings is sought

(Miliken, 1987). The inconsistency has been seen to lead to mental burnout more than ones caused in a physical consequential manner (Zeike et al., 2019).

Figure 4: The toolkit

### The Technology-People-Driven Care Management Toolkit



Source: The current authors.

### *5.3 Scenarios of the process of care management with the toolkit*

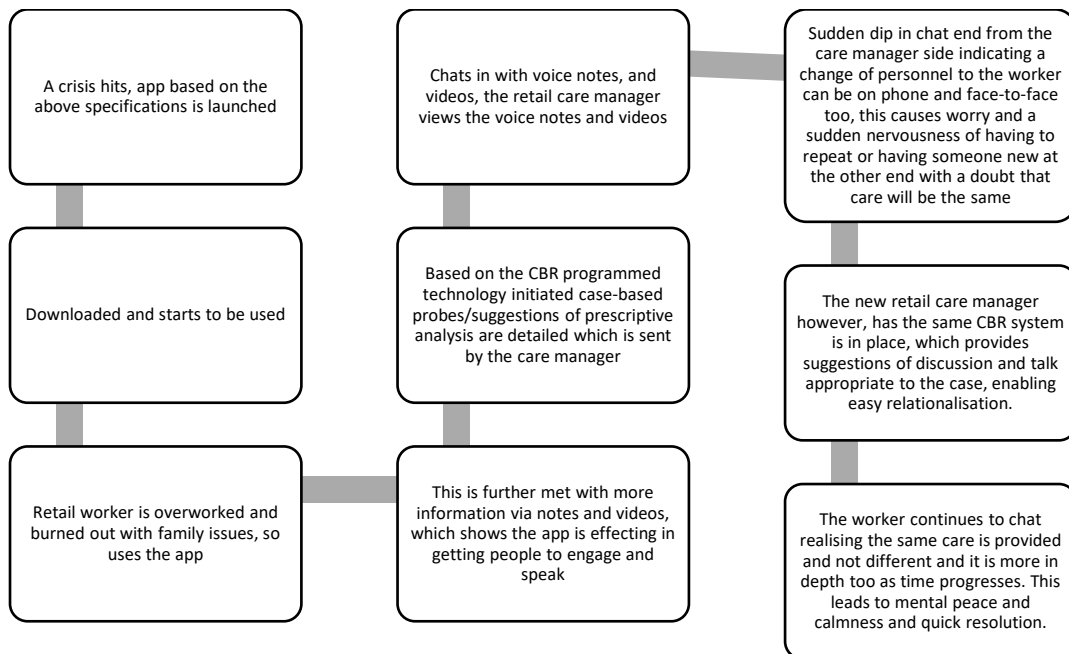
To elucidate the toolkit, we delineate it via two scenarios in a retail care context. Scenario 1 is focused upon retail employees (figure 5) and scenario 2 is centred on retail consumers (figure 6). In both scenarios, normally several reports indicate that when a person at the back end of a chat bot changes, on a phone support changes or even face-to-face, the emotional turmoil increases for the individual in consideration (Hildebrand, 2022). This results in not going ahead with more sharing, more closure than openness (Kellogg et al., 2022). This is increased when there is a follow-up chat or follow-up phone call or follow-up face to face meeting (Barrett et al., 2019). Further, results in disengagements with a question, “when can I call back or chat back when the other previous care manager is available?”, or even “can you connect me back to your colleague?” (McKinsey, 2022). Via the new toolkit, the mechanism due to the bootstrapped CBR-based probes (Sarker, 2022), prompts follow-ups and cues for discussions, results in having the continuity as not only is the individual’s record kept, but also the case-based psychological AI enables addressing the individual, not a generic text of statements being conveyed (Hildebrand, 2022; Sarker, 2022).

Furthermore, feeling AI-based prescriptive and fuzzy logic machine learning computation enables understanding the scenario better to feed in more appropriate information and language thereby calming the individual and addressing their specific needs which is futuristic and prescriptive based on their needs (Huang et al., 2019; Huang and Rust, 2021). Furthermore, since it is bootstrapped on the other end the retail employee/consumer does know the individual and the retail employee/consumer on this end does not know the individual leading to full privacy (Kellogg et al., 2022). In addition, the AI-technology face-to-face interaction is also more easily dealt with than just basic information, as it enables crunching

and personalising scenarios and prompts prior to the meeting enabling social psychological orientation for retail care managers in an aftermath of a crisis (Power, 2017; Rai, 2021).

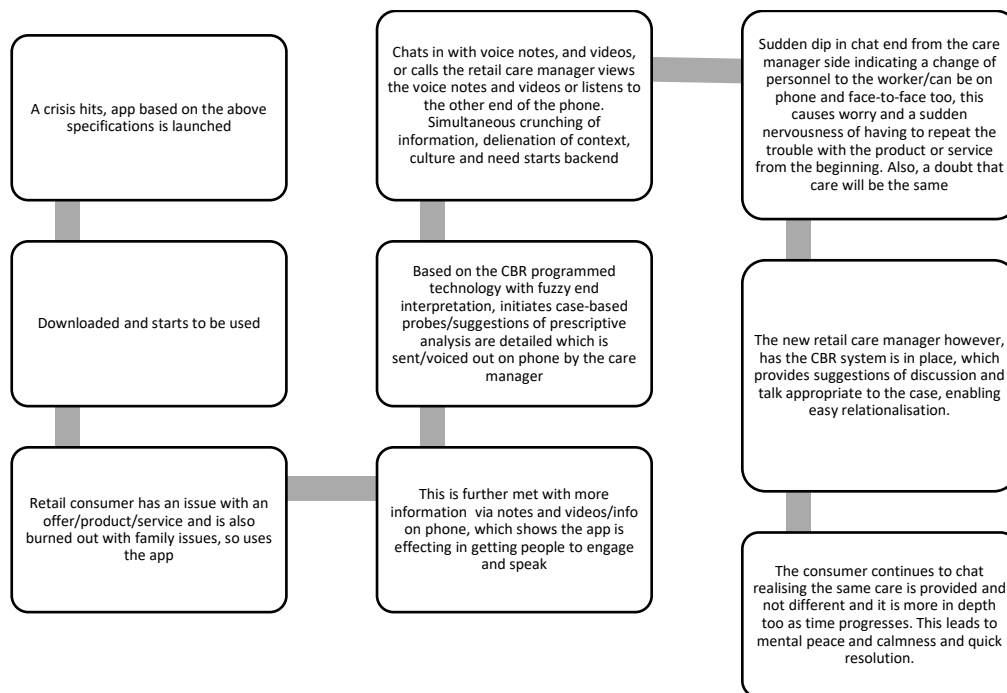
Lastly, it is also imperative to note that cultural vagaries also have an effect on a difference in attitude, mental states, and feelings in relation to stress undertaken within individuals (Maynard et al., 2022). Therefore, specifically utilising the Case Based Reasoning (CBR)-based fuzzy-logic system of feeling-AI fosters into effect mapping behavioural understanding to the culture of the individual, without need for disclosure (Corrales et al., 2020; Sarker, 2022). Thereafter the content, cues and social psychological content provided for discussion and resolution within the app becomes culturally sound too, making for a smooth scenario of care management (Thompson et al., 2020).

Figure 5: Full Care Management Process with the Toolkit for a Retail Employee.



Source: The current authors.

Figure 6: Full Care Management Process with the Toolkit for a Retail Consumer.



Source: The current authors.

## 6. Conclusion

This paper has exemplified the dire need for retail care management to include mental volatilities in a time of crisis. Moreover, the new facet to be considered has not had an appropriate method of delivery. Therefore, via the case analysis, we found the need to develop a care management mechanism that addresses the inefficiencies in the current ones employed thus far – mental volatility and appropriate technology and people orientation. For this, we conceptualise and propose a technology-people-driven toolkit that addresses the need. Furthermore, to understand how the toolkit may be employed we took two scenarios to delineate the working. Therefore, considering the aims of this paper, suffice to say they have been achieved. The implications of our paper are outlined below. Retail care management however needs much more academic research in the future which involves AI-human integration for efficient care.

## **7. Implications**

### *7.1. Theoretical implications*

First, we address how care management is widespread in sectors like healthcare and how that understanding elucidates the current retail care management needs where a dearth of research is observed. In this regard, we review literature from healthcare (i.e., Andolhe et al., 2015; Lee et al; 2018; O'Malley et al., 2018; Poncet et al., 2006) to detail its correspondence to the retail sector for both employees and consumers. Second, we provide a detailed case-study analysis of three retail companies in the UK (M&S, Tesco, Aldi) that exemplifies what is wrong with current adjustments to care management strategies during and after a pandemic. In this regard, we further understand the major technological shortcoming of utilising primitive systems of NLP in relation to the mental volatility in an uncertain environment (Matsunaga, 2021). Third, we detail the new facet of mental volatility and sub-facet of content and personnel consistency and customisation to be considered within retail care management as a prerequisite sought by employees and consumers. Fourth, we utilise current emotional AI like CBR and Fuzzy-End Logic (Corrales et al., 2020; Sarker, 2022) utilised in other sectors to detail how AI and people can be integrated from a care management toolkit perspective. In this we detail the steps, mechanism, interface overview and how the shortcomings are addressed successfully. This is done via a toolkit conceptualisation and scenario-based examples of the toolkit's implementation. The primary contribution of this paper is to provide a comprehensive toolkit for employees and customers, offering at the same time insights into the wider discussion on care management and adding to the literature on care management with a focus in retailing. We believe that our toolkit can guide future research and practice in retailing in regard to understanding the relative importance of care management that has been ignored in a retail academic context.



## *7.2. Managerial Implications*

First, the understanding that mental volatility is a facet which needs to be understood and valued is brought to the forefront. Specifically, how it is an important facet which needs effective resolution. Second, understanding the need to customise retail care management content has started being considered by managers who seem to pay closer attention to it nowadays. This, therefore, provides an indication to managers that standardisation of content is not sought and not appropriate. Third, the understanding that the method of delivery of NLP is outdated as it's thinking AI and having to utilise CBR and fuzzy end logic as a feeling-AI powered system equips managers to understand the depth being sought in care at a time of crisis. Within this, managers are aided with an understanding of how it can be implemented and what it provides for them, retail employees and consumers (Corrales et al., 2020; Linders, 2018; Sarker, 2022). Fourth, having a conceptually developed system backed by literature indicating efficacy (Ceryes et al., 2021), enables retail care managers to implement the mechanism with immediate effect to contend with the situation at hand. Fifth, via the elucidation of the developed system in two scenarios, we provide an understanding of how the system empowers care managers and employees and consumers equally to master retail care management in any scenario – online and offline.

## **8. Future Research Agenda**

This paper provides appropriate literature to back the delineation of shortcomings and needs within care management. Further, as a result of utilising appropriate literature for the mechanism's conceptualisation, we do believe its implementation will indicate the efficacy. Though for that to be known, a data-driven paper is needed that takes few companies and implements the novel mechanism to understand its impact. Future research could take this

mechanism and find more factors affecting the mechanism and how it can be implemented in various scenarios. As feeling-AI can also be mapped to cultural varieties, different mechanisms can be developed following a similar protocol detailed in this paper except for the cultural varieties and tested out. Lastly, more AI-enabled-human integrated retail care management toolkits have to be developed as the times we live in need it more than ever.

## References

- Ahmed, K., Iqbal, W., Ammar, E. 2022. Artificial Intelligence in Education: A Panoramic Review. <https://doi.org/10.35542/osf.io/zvu2> (accessed 23 May 2022)
- Alam, J., Khan, I., Tanweer, S., Siddiqui, F. 2022. Role of Ai, IoT, IoD in avoiding and minimizing risks of future pandemics. [https://www.researchgate.net/profile/Mehtab-Alam-publication/359471058\\_Role\\_of\\_AI\\_IOT\\_IOD\\_in\\_avoiding\\_and\\_minimizing\\_risks\\_of\\_future\\_pandemics/links/623df7f07931cc7ccff6b5d6/Role-of-AI-IOT-IOD-in-avoiding-and-minimizing-risks-of-future-pandemics.pdf](https://www.researchgate.net/profile/Mehtab-Alam-publication/359471058_Role_of_AI_IOT_IOD_in_avoiding_and_minimizing_risks_of_future_pandemics/links/623df7f07931cc7ccff6b5d6/Role-of-AI-IOT-IOD-in-avoiding-and-minimizing-risks-of-future-pandemics.pdf) (accessed 23 May 2022)
- Aldi Press Centre. News for COVID-19. <https://www.aldipresscentre.co.uk/business-news/aldi-confirms-face-maks-to-be-mandatory-in-all-uk-stores/> (accessed 22 February 2022)
- Aldi. Safety and COVID-19. <https://www.aldi.co.uk/covid19> (accessed 22 February 2022)
- Ahmadi, I., Habel, J., Jia, M., Lee, N. Wei, S., 2021. Consumer stockpiling across cultures during the COVID-19 pandemic. *J. Internat. Market.* 30(2), 28-37.
- Andolhe, R., Barbosa, RL., Oliveira, EM. 2015. Stress, coping and burnout among intensive care unit nursing staff: associated factors. *Rev. Esc. Enferm. USP.* 49, 58-64
- Barbieri, T., Basso, G., Scicchitano, S. 2022. Italian employees at risk during the covid-19 epidemic. *Ital. Econ. J.* 8, 175–195. <https://doi.org/10.1007/s40797-021-00164-1>

- Barrett, M., Branson, L., Carter, S. 2019. Using artificial intelligence to enhance educational opportunities and student services in higher education. *inquiry*. <https://commons.vccs.edu/inquiry/vol22/iss1/11> (accessed 21 May 2022)
- Baska, M. 2019. Employees still scared to open up about mental health, says survey. <https://www.peoplemanagement.co.uk/article/1744931/employees-scared-open-up-about-mental-health> (accessed 22 May 2022)
- Bedford, E., 2022. Most popular supermarket chains in the UK Q2 2022. <https://www.statista.com/statistics/1135764/most-popular-supermarkets-in-the-uk/>(accessed 21 November 2022)
- Bentall RP, Lloyd A, Bennett K, McKay R. 2021. Pandemic buying: Testing a psychological model of over-purchasing and panic buying using data from the United Kingdom and the Republic of Ireland during the early phase of the COVID-19 pandemic. *PLoS ONE*. 16(1), e0246339.
- Ceryes, C., Robinson, J., Biehl, E, Wirtz, A.L, Barnett, D.J, Neff, R., 2021. Frequency of workplace controls and associations with safety perceptions among a national sample of us food retail employees during the covid-19 pandemic. *J. Occup. Environ. Med.* 63(7), 557-564.
- Chen, H., Sun, W., Zhuang, J., 2017. Caregiver burden and its associated factors among family caregivers of persons with dementia in Shanghai, China: a cross-sectional study. *BMJ Open*, 12, e057817
- Cheng, Y., Jiang, H., 2020. AI-Powered mental health chatbots: Examining users' motivations, active communicative action and engagement after mass-shooting disasters. *J. Continge. Cris. Manag.* 28, 339– 354.

- Chia-Ling, L., Li-Fan, L., Shuh-Sin, C., Hsiu-Chun, L., 2015. A study investigating the role and function of care managers and the satisfaction of primary caregivers with care management services. *J. Nursing Health. Res.* 11(3), 198-205.
- Corrales D.C., Ledezma, A., Corrales, J.C., 2020. A case-based reasoning system for recommendation of data cleaning algorithms in classification and regression tasks. *Appl. Soft. Comput.* 90, 106180
- Equiniti. 2021. Engaging M&S employees during the covid-19 pandemic. <https://equiniti.com/uk/news-and-views/eq-views/engaging-ms-employees-during-the-covid-19-pandemic/> (accessed 22 February 2022)
- Fitzpatrick, K., Harris, C. Drawve, G., 2020. Assessing US food insecurity in the United States during COVID-19 pandemic. Fayetteville, AR: Community and family institute. Department of Sociology and Criminology, University of Arkansas, Fayetteville, AR
- Gardner, R. L., Cooper, E., Haskell, J., Harris, D. A., Poplau, S., Kroth, P. J., Linzer, M., 2019. Physician stress and burnout: the impact of health information technology. *J. Amer. Med. Inform. Assoc.* 26(2), 106-114.
- Greenwood, K. Anas, J., 2021. It's a New Era for Mental Health at Work. <https://hbr.org/2021/10/its-a-new-era-for-mental-health-at-work> (accessed 23 May 2022)
- Guardian., 2021. Anxious, overwhelmed, abused: what it's really like working in retail during the pandemic. <https://www.theguardian.com/commentisfree/2021/dec/15/anxious-overwhelmed-abused-what-its-really-like-working-in-retail-during-the-pandemic> (accessed 22 May 2022)
- Guillot, C. 2020. As retail reopens, a focus on employee mental health: Addressing the challenges of employee well-being in the time of COVID-19.

- <https://nrf.com/blog/retail-reopens-focus-employee-mental-health> (accessed 23 May 2022)
- Hamilton, R., 2021. Scarcity and coronavirus. *J. Publ. Pol. Market.* 40(1), 99-100
- Huang, M., Rust, R. 2021. A strategic framework for artificial intelligence in marketing. *J. Acad. Market. Sci.* 49, 30-50.
- Huang, M.H., Rust, R.T., Maksimovic, V. 2019. The feeling economy: Managing in the next generation of artificial intelligence (AI). *Cal. Manag. Rev.* 61(4), 43–65.
- High, A., Crowley, J.L., 2018. Gaps among desired, sought, and received support: Deficits and surpluses in support when coping with taboo marital stressors. *Comm. Res.* 45(3), 319–338.
- Hildebrand, C., Bergner, A., 2019. AI-driven sales automation: Using chatbots to boost sales. *NIM Market. Intel. Rev.* 11, 36-41.
- Hyde, P., Harris, C., Boaden, R., Cortvriend, P., 2009. Human relations management, expectations and healthcare: A qualitative study. *Hum. Relat.* 62(5), 701–725.
- Inditex. 2019. Occupational, health and safety policy. <https://www.inditex.com/documents/10279/241538/Occupational+Health+and+Safety+Policy.pdf/28389756-c269-579b-ecb5-19a3855ff09c> (accessed 14 May 2022)
- Islam, T., Pitafi, A.H., Arya, V., Wang, Y., Akhtar, N., Mubarik, S., Xiaobei, L., 2021. Panic buying in the COVID-19 pandemic: a multi-country examination. *J. Retail. Cons. Serv.* 59, 102357.
- Johannisson, J., Hiete, M., 2021. Environmental service-learning approach in higher education – A descriptive case study on student-led life cycle assessments of university cafeteria meals. *Intern. J. Sust. Hig. Edu.* 22(7), 1728-1752.
- Kauffman, H., 2000. Electronic commerce in the food retail industry: a case study comparison of virtual grocers' and virtual meal retailers' strategies and business processes. Doctor

of Philosophy (PhD) thesis, University of Kent.

<https://kar.kent.ac.uk/86203/1/DX215753.pdf> (25 May 2022)

Kivinen, P. 2022. Sustainable Supplier Evaluation and Selection in Do-It-Yourself Retail Industry.

[https://128.214.223.245/bitstream/handle/10024/163707/Progradu\\_Kivinen\\_Aleksi.pdf?sequence=3&isAllowed=y](https://128.214.223.245/bitstream/handle/10024/163707/Progradu_Kivinen_Aleksi.pdf?sequence=3&isAllowed=y) (accessed 25 May 2022)

Kirkpatrick, I., Sturdy, A.J., Alvarado, N.R., Blanco-Oliver, A., Veronesi, G., 2019. The impact of management consultants on public service efficiency. *Pol. Politics.* 47(1), 77-95.

Kohli, S., Timelin, B., Fabius, V., Veranen, S., 2021. How covid-19 is changing consumer behaviour – now and forever. <https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/how%20covid%2019%20is%20changing%20consumer%20behavior%20now%20and%20forever/how-covid-19-is-changing-consumer-behavior-now-and-forever.pdf> (accessed 19 February 2022)

Laato, S., Islam, A., Farooq, A., Dhir, A., 2020. Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *J. Retail. Cons. Serv.* 57, 102224

Lee, C.L., Liu, L.F., Chen, S.S., Lin, H.C., 2014. Relationship of the effectiveness of care management services and burdens of primary family caregivers. *J. Nurs.* 61(1), 64-73.

Linders, B. 2018. Building Human Interfaces with Artificial Intelligence. <https://www.infoq.com/news/2018/11/human-interfaces-ai/> (accessed 23 May 2022)

Loyd, L. 2014. It is a scandal! Comparing the causes and consequences of nursing home media scandals in five countries. *Inter. J. Socio. Soci. Pol.* 34(1/2), 2-18.

- Mariani, M.M., Perez-Vega, R., Wirtz, J. 2022. AI in marketing, consumer research and psychology: A systematic literature review and research agenda. *Psyc. Market.* 39, 755– 776.
- Mayer, B., Helm, S., Barnett, M., Arora, M., 2022. The impact of workplace safety and customer misbehavior on supermarket workers' stress and psychological distress during the COVID-19 pandemic. *Intern. J. Workpl. Health Manag.* 15(3), 339-358.
- Mayer, B., Barnett, M., Arora, M. Helm, S., 2021. Grocery employees suffer the mental health effects of customer hostility and lack of safety in their workplace. <https://theconversation.com/grocery-employees-suffer-the-mental-health-effects-of-customer-hostility-and-lack-of-safety-in-their-workplace-171664> (accessed 22 May 2022)
- Maynard, T., Baldassarre, L., De Montjoye, Y., McFall, L. (2022). AI: Coming of age? *Ann. Actu. Sci.* 16(1), 1-5.
- Matsunaga, M. 2022. Uncertainty management, transformational leadership, and job performance in an AI-powered organizational context. *Comm. Monog.* 89(1), 118-139.
- Matsunaga, M., 2011. Underlying circuits of social support for bullied victims: An appraisal based perspective on supportive communication and post bullying adjustment. *Hum. Comm. Res.* 37(2), 174–206
- Mayer, B., Helm, S., Barnett, M., Arora, M., 2022. The impact of workplace safety and customer misbehavior on supermarket workers' stress and psychological distress during the COVID-19 pandemic. *Intern. J. Workpl. Health Manag.* 15(3), 339-358.
- McKinsey. 2022. The tech transformation imperative in retail. <https://www.mckinsey.com/industries/retail/our-insights/the-tech-transformation-imperative-in-retail> (accessed 23 May 2022)

- McLaren, R. M., High, A. C., 2019. The effect of under-and over-benefited support gaps on hurt feelings, esteem, and relationships. *Comm. Res.* 46(6), 785–810.
- Mikalef, P., Conboy, K., Lundström, J. Popovič, A., 2022. Thinking responsibly about responsible AI and ‘the dark side’ of AI. *Euro. J. Info. Sys.* 31(3), 257-268.
- Milliken, F. J., 1987. Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Acad. Manag. Rev.* 12(1), 133–143.
- Mintel., 2021. Executive Summary. Supermarkets UK, 2021. Mintel
- M&S., 2021. We’re all in this together. <https://corporate.marksandspencer.com/all-in-this-together> (accessed 22 February 2022)
- Nazir, S., 2021. Has covid-19 affected the future of grocery sector forever?. <https://www.retailgazette.co.uk/blog/2021/09/has-covid-19-affected-the-future-of-the-grocery-sector-forever/> (accessed 19 February 2022)
- Northington, W.M., Gillison, S. T., Beatty, S. E., Vivek, S. 2021. I don't want to be a rule enforcer during the COVID-19 pandemic: Frontline employees' plight. *J. Retail. Cons. Serv.* 63, 102723.
- Nguyen, O. T., Jenkins, N. J., Khanna, N., Shah, S., Gartland, A. J., Turner, K., Merlo, L. J., 2021. A systematic review of contributing factors of and solutions to electronic health record–related impacts on physician well-being. *J. Amer. Med. Info. Assoc.* 28(5), 974-984.
- O'Malley, A., Peikes, D., Wilson, C., Gaddes, R., Peebles, V., 2017. Patients' perspectives of care management: A qualitative study. *Amer. J. Man. Care.* 23, 684-689.
- Oteh, N., Hooper, T., Standish, J., Whittall, N., Tully, R., Prepula, P., 2021. Reimagining the retail workforce: Adapting to new ways of working. [https://www.accenture.com/\\_acnmedia/PDF-149/Accenture-Reimagine-the-Retail-Workforce.pdf#zoom=40](https://www.accenture.com/_acnmedia/PDF-149/Accenture-Reimagine-the-Retail-Workforce.pdf#zoom=40) (accessed 19 February 2022)



- Paige, J., 2021. Retailers need to focus on employee mental health: Experts weigh in. <https://www.retail-insight-network.com/analysis/retailers-need-to-focus-on-employee-mental-health-experts-weigh-in/> (accessed 13 May 2022)
- Pantano, E., Pedeliento, G., Christodoulides, G. 2022. A strategic framework for technological innovations in support of the customer experience: A focus on luxury retailers., J. Retail. Cons. Serv. 66, 102959
- Pantano, E., Pizzi, G., Scarpi, D., Dennis, C., 2020. Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. J. Bus. Res. 116, 209-213
- Phillips, J. E., 1996. Reviewing the literature on care management, in: Phillips J., Penhale, B. (Eds.), Reviewing Care Management for Older People. Jessica Kingsley Publishers, Ltd, London, pp. 1-13.
- Poncet, M.C., Toullic, P., Papazian, L., Kentish-Barnes, N., Timsit, J.F., Pochard, F., Chevret, S., Schlemmer, B., Azoulay, E., 2006. Burnout syndrome in critical care nursing staff. Am. J. Respir. Crit. Care Med. 175(7), 698-704.
- Power, B. 2017. How Harley-Davidson used artificial intelligence to increase New York sales leads by 2,930%. <https://hbr.org/2017/05/howharley-davidson-used-predictive-analytics-to-increase-new-yorksales-leads-by-2930> (accessed 25 May 2022)
- Pramanik, D., Nayyar, A., Pareek, G. 2019. Chapter 7 - WBAN: Driving e-healthcare Beyond Telemedicine to Remote Health Monitoring: Architecture and Protocols, In Hemanth D. Jude, Valentina Emilia Balas, Telemedicine Technologies, Academic Press, <https://doi.org/10.1016/B978-0-12-816948-3.00007-6>
- Rodríguez-López, A. M., Rubio-Valdehita, S., Díaz-Ramiro, E. M., 2021. Influence of the COVID-19 pandemic on mental workload and burnout of fashion retailing employees in Spain. Intern. J. Envir. Res. Publ. Health. 18(3), 983. <https://doi.org/10.3390/ijerph18030983>

- Shahbaz, M., Bilal, M., Moiz, A., Zubair, S. Iqbal, H.M., 2020. Food safety and COVID-19: precautionary measures to limit the spread of coronavirus at food service and retail sector. *J. Pure. Appl. Microbio.* 14, 749-756.
- Radford, K., Shacklock, K., Bradley, G., 2015. Personal care employees in Australian aged care: retention and turnover intentions. *J. Nur. Manag.* 23, 557– 566.
- Rai, A. 2020. Explainable AI: from black box to glass box. *J. Acad. Mark. Sci.* 48(1), 137–141.
- Roggeveen, A.L., Sethuraman R., 2020. How the COVID-19 pandemic may change the world of retailing. *J. Retail.* 96(2), 169-171.
- Sarker, I.H., 2022. AI-based modeling: techniques, applications and research issues towards automation, intelligent and smart systems. *SN Comput. Sci.* 3, 158, <https://doi.org/10.1007/s42979-022-01043-x>
- Shanafelt, T., 2020. Understanding and addressing sources of anxiety among health care professionals during the covid-19 pandemic. *JAMA.* 323(21), 2133–2134.
- Standish, J., 2020. Covid-19: New habits are here to stay for retail consumers. <https://www.accenture.com/gb-en/insights/retail/coronavirus-consumer-habits> (accessed 19 February 2022).
- Stratten, J., 2021. What impact has covid-19 had on London retail. <https://www.insider-trends.com/what-impact-has-the-covid-19-pandemic-had-on-london-retail/> (accessed 19 February 2022).
- Sreejesh, S., Sarkar, J. G., Sarkar, A., 2021. Digital healthcare retail: role of presence in creating patients' experience. *Internat. J. Retail Distrib. Manag.* 50(1), 36-54.
- Tesco., 2021. PLC Covid 19. <https://www.tescopl.com/covid-19/> (accessed 22 February 2022).

- Thompson, C., Pulido, M., Caban, S. 2022. Why is it difficult for social network members to support people living with mental illnesses? Linking mental illness uncertainty to support provision, *Health Com.* 37(2), 202-213.
- Tremblay, M., Hevner, A., Berndt, D., 2012. Design of an information volatility measure for health care decision making. *Dec. Support Syst.* 52(2), 331-341.
- Vader, R., Martin, P., Qian, J., 2021. The realities of retailing in covid-19. <https://home.kpmg/xx/en/home/insights/2020/03/realities-of-retailing-in-covid-19-world.html> (accessed 19 February 2022)
- Verhoef, P. C., Noordhoff, C. S., Sloot, L. 2022. Reflections and predictions on effects of COVID-19 pandemic on retailing. *J. Ser. Manag.* (ahead-of-print).
- Villegas-Galaviz, E. 2022. *Ethics of Care as Moral Grounding for AI*. Auerbach Publications, Berlin.
- Wang, Q., Jing, S., Goel, A., 2022. Co-designing AI agents to support social connectedness among online learners: functionalities, social characteristics, and ethical challenges. *DIS '22* (1-15), June 13–17, 2022, Virtual Event, Australia.
- Wang, P.S., Simon, G.E., Avorn, J., Azocar, F., Ludman, E.J., McCulloch, J., Petukhova, M. Z., Kessler, R. C., 2007. Telephone screening, outreach, and care management for depressed employees and impact on clinical and work productivity outcomes: a randomized controlled trial. *JAMA*, 298(12), 1401–1411.
- Wright, G. 2021. How can retailers prioritise mental health post-Covid?. <https://www.retailgazette.co.uk/blog/2021/05/retailers-prioritise-mental-health-post-pandemic/> (accessed 21 May 2022)
- Yin, R., 2014. *Case Study Research Design and Methods*, fifth ed. Sage, Thousand Oaks, CA.

- Ying, F., O'Clery, N., 2021. Modelling COVID-19 transmission in supermarkets using an agent-based model. *PL ONE*. 16(4), e0249821. <https://doi.org/10.1371/journal.pone.0249821>
- You, L., Xiaoming, J., Yaping, D., Qin A., Li, B., 2021. A study on the competence characteristics of psychological hotline counselors during the outbreak of covid-19. *Front. Psych.* 12, 566460.
- Zeike, S., Bradbury, K., Lindert, L., Pfaff, H., 2019. Digital leadership skills and associations with psychological well-being. *Intl. J. Env. Res. Publ. Health*. 16(14), 2628–2639.