Journal of Business Research 146 (2022) 134–145

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Digitalization driven retail business model innovation: Evaluation of past and avenues for future research trends

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ARTICLE INFO

Keywords:
Retail business model
Innovation
Bibliometric analysis
Network analysis
Literature review

ABSTRACT

Increased digitalization enabled innovation and practical examples from the retail industry have captured the attention of marketing scholars, with rapid development in the academic field. The pace of change has significantly accelerated during the Covid-19 crisis. In seeking to (1) investigate the unique characteristics of digitalization enabled retail business model innovation, (2) understand how does digitalization influences changes to the retail business model innovation dimensions, and (3) identify the areas for future research related to retail business model innovation, this study systematically reviews the literature. Employing four databases, a sample of 170 articles were chosen. Based on bibliometric and network analysis and visualization, the major researchers, articles, and topics were rigorously identified. Finally, the results revealed the unaddressed issues in this research area. The study ends with theoretical and managerial implications.

1. Introduction

Digitalization and advancement in related technologies is driving significant innovation in the retail industry. The pace of change has significantly accelerated during the Covid-19 crisis. For instance, during the pandemic, the shopping volumes globally increased from February 2020 through April 2021, and the retail sector gained 35% in market capitalization (Bradley, Kohli, Kuijpers, & Rüdiger, 2021). Thus, we see a surge of innovation in retail business models to address escalating customer expectations (Sorescu, Frambach, Singh, Rangaswamy, & Bridges, 2011), technology adoption, supply chain integration, logistics challenges, and digital marketing (Gavrila & de Lucas Ancillo, 2021). Those retailers who were prepared and had already adopted advanced digital business models before the pandemic have dramatically widened the gap between leaders and laggards by increasing their market value (Bradley et al., 2021). Thus, the effects and gains from digitalization in the retail business model is visible for three reasons. First, retailers sell products that are usually produced by third party suppliers, which means that having a streamlined supply chain management flow and system is critical to their competitiveness. Second, retailers are the final stage in the supply chain and are engaged closely with final consumers (Lange & Velamuri, 2014), which means enhanced customer interaction through digitalization can lead to higher sales and performance. Third, one of the largest industries in many economies is the retail industry given its large number of employees and value creation, among other parameters (Tambo, 2014). This intermediating position in the supply chain makes digitalization-driven innovation in the retail business model of significant importance (Lange & Velamuri, 2014). Consequently, advancing understanding of how digitalization enables business model innovation is practically and theoretically relevant.

We define digitalization as the "use of digital technologies to innovate a business model and provide new revenue streams and value-producing opportunities in industrial ecosystems" (Parida, Sjödin, & Reim, 2019 p. 6). Thus, the focus lies in understanding the application

Abbreviations: RBM, Retail Business Model.

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https://doi.org/10.1016/j.jbusres.2022.03.072
Received 28 May 2021; Received in revised form 23 March 2022; Accepted 26 March 2022
Available online 31 March 2022

and utilization of digitalization rather than introduction of novel technologies. In the empirical context of retail industry, it is obvious that digitalization influences all the dimensions of business models – value creation, value delivery, and value capture – in numerous ways. For example, value-creation use of AI on content created in social media has been empowering retailers to gain more accurate knowledge on customer behavior and consequently make better marketing decisions in quick time (Capatina et al., 2020). Similarly, chatbots and robot-generated responses have ensured a fast and reasonably accurate response to customer questions as part of a new value delivery routine (Hoyer, Kroschke, Schmitt, Kraume, & Shankar, 2020). Another value delivery example includes the use of virtual reality (VR) to enhance the customer experience (Battisti & Brem, 2020). Finally, in value-capturing activities, we are witnessing increased experimentation related to cryptocurrency, blockchain (Choi, Guo, & Luo, 2020), and big data analytics (Aversa, Hernandez, & Doherty, 2021) that will have a lasting impact on the revenue models of the retail industry in short-and-long term.

Increased digitalization-enabled business model innovation in the retail industry has captured the attention of marketing and innovation management scholars, leading to rapid development in the academic field (Jocevski, 2020). However, these studies are fragmented and confined to specific aspects of digitalization-driven retail business model innovation (e.g., Bollweg, Lackes, Siepermann, & Weber, 2020; Jin & Shin, 2020). The extant literature fails to present an understanding of these changes and to adopt a holistic view of the digitalization's enabling role in retail business model innovation. The future of retailing is not entirely clear for both researchers and managers at this point (Paul & Rosenbaum, 2020). Advanced technologies, such as AI, big data, and IoT, have set forth opportunities and challenges that are not easily achievable by firms because they require not only small enhancements in the processes but also major improvements in business model dimensions. There is no clear roadmap for transforming business models that can fully exploit the available and emerging technologies. Thus, there is a pressing need for a research perspective that will make sense of the current literature and provide a deeper understanding on which topics and areas are growing and, more importantly, which areas need further research in relation to digitalization-enabled retail business model innovation (Paul & Rosenbaum, 2020).

In light of the aforementioned possibilities and opportunities, this study seeks to answer the following questions:

RQ1: What are the unique characteristics of digitization-enabled retail business model innovation?

RQ2: How does digitalization influence changes to the retail business model innovation dimensions?

RQ3: What are the relevant areas for future research related to retail business model innovation?

The remainder of the study is organized as follows. Section 2 describes the method used for a systematic literature review. Section 3 discusses the state-of-the-art in innovation in the retail business model and pinpoints the leading researchers in this area; highlights the topics in the existing literature on innovation in RBM; and identifies the journals that house studies from the final portfolio on innovation in RBM. In addition to the descriptive statistics, network analysis on co-authorship and co-occurrence are visualized. Thereafter, this section presents themes that are identified in the literature. Section 4 identifies the research gap in the existing literature on innovation in RBM. Finally, Section 5 presents the conclusions, the theoretical and managerial implications, and the limitations of our study.

2. Methods

In the method section, the search protocol for the systematic literature review is presented. Then, the bibliometric analysis is described. Several complementary bibliometric analyses were used in order to identify the most influential articles, authors, and journals, and also major innovations in retail business models. Based on this mapping, we identify the themes of innovation in RBM and also ascertain the research gap.

2.1. Search protocol

To retrieve and select articles for the systematic literature review, the authors employed an "organized, transparent, and replicable process" (Littell, Corcoran, & Pillai, 2008). The 6-step strategy for retrieving the articles in this study consists of: (1) initial investigation of determining keywords and databases; (2) database searches (Web of Science, Scopus, Science Direct, and EBSCO); (3) removing duplicates; (4) filtering based on title and keywords; (5) filtering based on abstracts; and (6) filtering based on a full reading of articles (cf. Salvador, Barros, da Luz, Piekarski, & de Francisco, 2020). Fig. 1 illustrates all the steps for retrieving and selecting the articles, followed by a description.

Step (1) determined the databases and keywords in this study. A panel of four experts was formed to reduce the researcher bias. We employed Boolean operators and wild cards to encompass all possible combinations and variations of the keywords "business model", "retail", and "innovation". Boolean operator "AND" combined the terms and wild card "*" retrieved possible variations of keywords used. For instance, "retail*" returned documents containing retailer and retailing (cf. Salvador et al., 2020). Screening through the initial searches resulted in many documents, confirming that keywords have a general strategic view that embed more specific terms. For instance, artificial intelligence in retailing is part of innovation in the retail business model. To reduce research bias, no further specific keywords were included in the search (cf. Salvador et al., 2020). The chosen strategy has an inadequacy that excludes relevant studies with a very specific focus. In the other words, if a potential article has not used any of our chosen general terms, it will be excluded even if is relevant. This is a limitation of this study that needs to be addressed by future studies.

The combination of keywords was searched in four databases, namely Web of Science, Scopus, EBSCO, and Science Direct. The databases were very carefully selected based on their reliability in indexing highly ranked journals. This method was used, as opposed to the selection of specific journals to avoid potential biases, to exclude relevant and influential articles in the final list of articles (cf. Caputo, Pizzi, Pellegrini, & Dabić, 2021). The idea of employing all four databases was to include as many relevant academic articles in the study. The downside was the overlaps and having the same articles from different databases. This was managed by the EndNote program in Step (3).

Step (2) conducts a search of general terms in each database along with additional filtering. On February 1, 2021, the search with general keywords (i.e., "retail*", "business model*" and "innovate*" or "innovation" was conducted in all four databases. Table 1 illustrates the specific queries used in each database. Additional filtering was conducted to focus only on English language and academic peer-reviewed journal articles. These were set to secure the quality of articles (cf. Catuogno, Saggese, & Sarto, 2016).

The original search in Scopus resulted in more than 9000 documents. Therefore, the findings were limited only to the subject area of business with the exact keyword of "innovation" and publication year after 2012. This process narrowed down the number of articles to 866. From this number, only articles with the exact keywords of "innovation", "Business Model", "Business Models", "Business Modeling", "Business", or "Business Model Innovation" were included in the study. This resulted in 125 articles.

In conclusion, 105 articles were retrieved from Web of Science, 125 from Scopus, 50 from EBSCO, and 1076 from Science Direct. All 1356 references were managed in EndNote 20 and Microsoft Excel spreadsheets.

Step (3) removed all the duplicates from the total number of articles leading to 1197 remaining articles.

Step (4) excluded all articles that were not relevant, based on reading

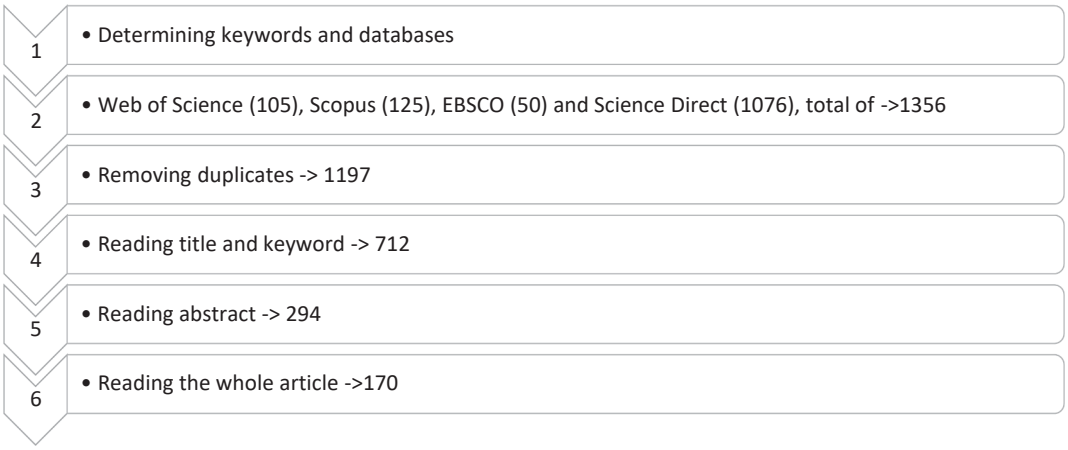

Fig. 1. Stages in the systematic literature review. Commences from top to down.

Table 1
Queries and steps used for the search in the databases.

Database	Query	Refined by
Web of science	All Fields: ((“business* model*”) AND (“retail*”) AND (Innovation))- > 183	Articles->110 and English -> 105
EBSCO	All Fields: ((“business* model*”) AND (“retail*”) AND (Innovat*))-> 90	English -> 88 and Academic journals-> 50
Science Direct	All ((“business model” OR “Business Modeling”) AND (“retail” OR Retailing) AND (Innovation or Innovative))- > 3, 784	English, Research Articles -> 2, 619 2011–2021->1,076
Scopus	ALL (“business*model*”) AND (“retail*”) AND (innovat*) -> 9,645 AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2012) AND (LIMIT-TO (LANGUAGE , “English”)) AND (LIMIT-TO (SRCTYPE , “j”)) AND (LIMIT-TO (SUBJAREA , “BUSI”)) AND (LIMIT-TO (PUBSTAGE , “final”)) AND (LIMIT-TO (DOCTYPE , “ar”)) AND (LIMIT-TO (EXACTKEYWORD , “Innovation”)) -> 866	Only articles + keywords (innovation, Business Model + Business Models + Business Modeling + Business + Business Model Innovation) -> 125

Note: Data was retrieved on 1 February 2021.

the title and keywords, leading to 712 articles. Typical topics that were removed from the study were articles on tourism, B2B, airport, and urban.

Step (5) excluded all irrelevant articles (e.g., studies on B2B, manufacturing, and airport) based on reading their abstracts. In consequence, the number of articles was reduced to 294.

Step (6) excluded irrelevant articles based on reading the entire article. This resulted in a final sample of 170 articles that were used in the remaining elements of the study and specifically in the bibliometric analyses.

2.2. Bibliometric analysis

Bibliometric analysis is the suitable method for analyzing a large volume of bibliographic materials (cf. Caputo et al., 2021; Salvador et al., 2020; Donthu, Kumar, & Pattnaik, 2020). In this study, we focus on descriptive analysis and network analysis to provide a bibliometric overview of the final sample. Based on the findings of the bibliometric analysis, we map the current literature in order to identify the research gap.

For descriptive analysis, we looked not only at the number of publications in each journal and each year but also the number of citations per journal, per year. This gives a clearer view of the chronicle publications in the journals. We employed Microsoft Power IB to visualize these descriptive statistics (cf. Salvador et al., 2020). For network analysis, we adopted the software program VOSViewer to visualize co-authorship and co-occurrence of keywords. Co-authorship and co-occurrence of keywords are two major concepts in the bibliometric literature. The first elucidates the connectivity of authors and their collaboration (Koseoglu, 2016), while the second reveals the knowledge structure of the literature (Cheng, Huang, Yu, & Wu, 2018). The items are represented by a tag, and the size represents the importance of each element. The distance between the tags indicates the approximate relatedness of the items. The color range depicts the year of publication. Yellow represents the most recent publications (i.e., 2021 and 2020), and the darker the color becomes, the older the article it represents. Lastly, we focus on the innovation in RBM to provide a comprehensive map of the field under investigation.

3. Results

To fulfill the aim of the paper, the results of the bibliometric analysis, visualizations, and identified themes are presented in the following sections, – namely, descriptive analysis, network analysis, digitization enabled retail busines model innovation characteristics, digitalization driven retail business model innovation for each dimension, and areas for future research related to digitalization enabled retail business model innovation.

3.1. Descriptive analysis

3.1.1. Main journals housing studies from the final portfolio on innovation in RBM

Based on the final sample of 170 articles, infographics in terms of the number of publications per journal per year (see Fig. 2) and the number of citations per journal per year (see Fig. 3) were built using Microsoft Power BI. Fig. 2 clearly shows that “Journal of Retailing and Consumer Services”, with about 30 publications, is the leading journal in this topic while Fig. 3 shows that “Journal of Retailing” has the highest number of citations.

All information on the 170 articles was saved in an SPSS file. In addition to the name of the author(s), the year of publication, the title of the article, the title of the publication, and the citation of each article from Google Scholar (retrieved on 23 February 2021) were included. Thus, Fig. 3 illustrates the number of citations for each journal based on the summation of the number of citations of articles in the portfolio.

The top five journals publishing in this field are the Journal of Retailing and Consumer Services, the Journal of Business Research, the

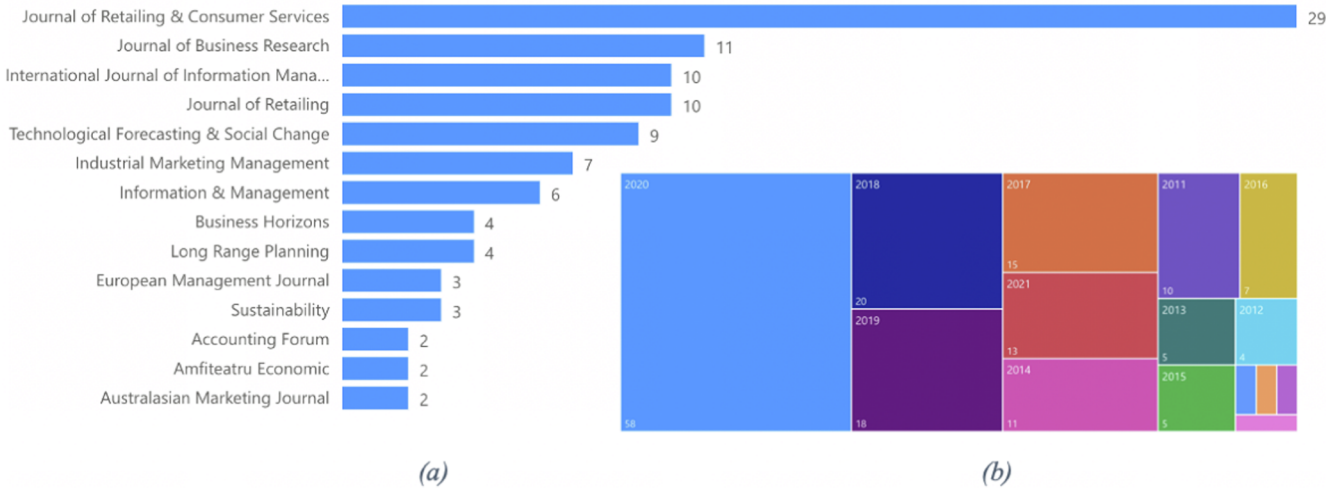

Fig. 2. Number of publications (a) per journal and (b) per year (adapted from Salvador et al., 2020).

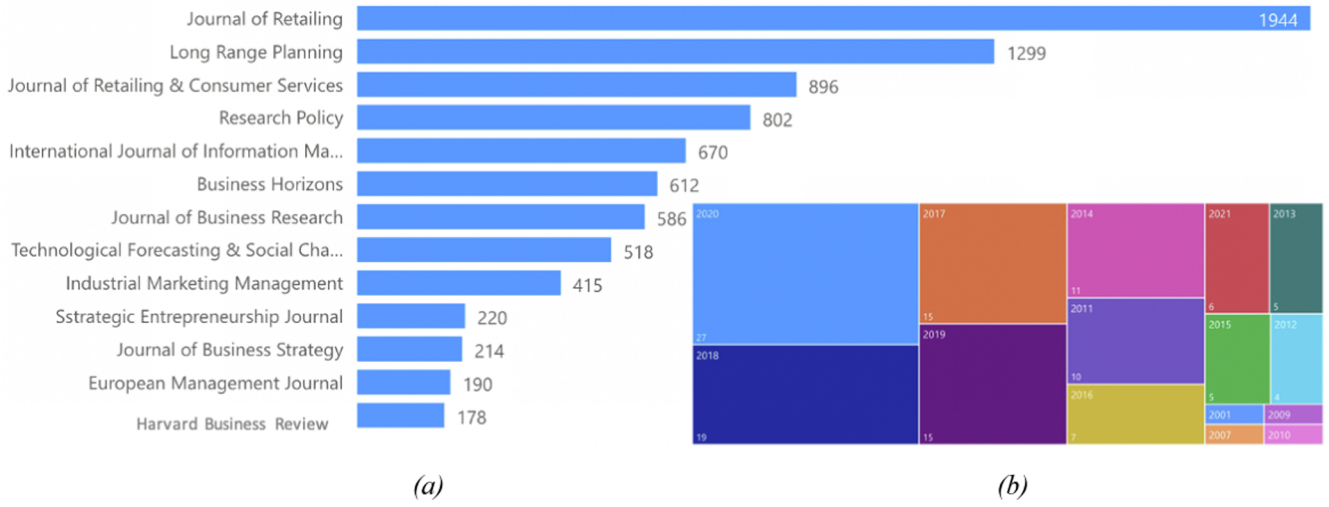

Fig. 3. Number of citations (a) per journal and (b) per year. Number of citations per article was retrieved on the 23 February 2021.

International Journal of Information Management, the Journal of Retailing, and Technology Forecasting and Social Change. The majority of the publications in the field were in the year 2020, which shows the growth of academic interest in this specific topic in recent years.

3.1.2. *Spotting the leading research on innovation in RBM*

The top ten articles with the highest number of citations are presented in Table 2. These articles were published between 2010 and 2015, with 1206 citations as the highest number and 211 citations as the lowest in this top ten list.

At the top of the list, the study of Sosna, Trevinyo-Rodríguez, and Velamuri (2010) investigated the antecedents of business model innovation. Based on a successful retailer in Spain, in two stages of exploration and exploitation, the study found trial-and-error learning and knowledge-transfer mechanisms between organizations and individuals as important drivers of business model innovation. The case showed high levels of growth not only in the home market but also in foreign markets.

The study of Sorescu et al. (2011) is another influential article in this area that focuses on antecedents and consequences of innovation in RBM by investigating retail activities, retail governance, and retailing format.

Of the articles in the top ten, three were published in the Journal of Retailing, confirming its significant role in this area.

3.2. *Network analysis*

3.2.1. *Analysis of the authors, co-authorship*

We used the Zotero program to produce RIS from EndNote so that VOSviewer software could have all 170 articles in the portfolio.

The following settings were applied in the VOSviewer software (version 1.6.16) to create visual maps in Fig. 4, based on the final profile of 170 articles: (a) map based on: bibliographic data; (b) read data from reference manager files: RIS; (c) type of analysis: co-authorship; (d) unit of analysis: authors; I Counting method: full counting; (f) minimum number of documents of an author: 2, 3, and 4 (each is presented in a separate circle in Fig. 6); (g) number of authors selected: total number of authors; (h) show: all items; (i) among the 956 authors, based on the thresholds 2, 3, and 4, the number of authors selected are 512, 35, and 17.

There are three circles in Fig. 4. Each represents the co-authorship based on thresholds of 2, 3, and 4 articles per author, which gave the minimum number of publications of 1, 2, and 3 per author. It should be noted that the VOSviewer program calculates the total strength of the co-authorship links with other authors and selects the authors with the greatest total link strength.

The results revealed that Grewal (Dhruv Grewal) from Babson College (Massachusetts, USA) is one of the main researchers working on

Table 2
Top articles in the sample with the highest number of citations.

Authors	Publication Year	Source Title	Total Citations*
Sosna, Trevinyo-Rodríguez, and Velamuri	2010	Long Range Planning	1206
Sorescu, Frambach, Singh, Rangaswamy, and Bridges	2011	Journal of Retailing	713
Shankar and Yadav	2011	Journal of Retailing	548
Bohnsack, Pinkse, and Kolk	2014	Research Policy	519
Nylén and Holmström	2015	Business Horizons	422
Pookulangara and Koesler	2011	Journal of Retailing and Consumer Services	386
Ritala, Golnam, and Wegmann	2014	Industrial Marketing Management	342
Reinartz, Dellaert, Krafft, Kumar, and Varadarajan	2011	Journal of Retailing	227
Kim and Min	2015	Strategic Entrepreneurship Journal	220
Matzler, Bailom, von den Eichen, and Kohler	2013	Journal of Business Strategy	211

Note: * The number of citations of each article was retrieved from Google Scholar on 23 February 2021.

innovation in RBM. He is a professor of Marketing and the Toyota Chair in Commerce and Electronic Business. Based on Google Scholar on March 31, 2021, he has 65,166 citations with h-index 85 and i10-index 184. He has contributed to this study's final portfolio in the Journal of Retailing and the Journal of Interactive Marketing (see Grewal et al., 2011; Grewal, Kroschke, Mende, Roggeveen, & Scott, 2020; Grewal, Roggeveen, & Nordfält, 2017). His research focuses on innovations in retail pricing and promotion in addition to human enhancement technologies in retailing. In his network, we find Kroschke (Mirja Kroschke) from Marketing Center Muenster, University of Muenster, Münster, Germany. She is the co-author in the study by Grewal et al. (2020). She has also focused on new technologies that transform the customer experience (see Hoyer et al., 2020). The third author in this network is Roggeveen (Anne I. Aggeveen) from Florida State University, Tallahassee, FL, USA, who is a co-author of the studies by Grewal et al. (2020) and Grewal et al. (2017).

Fig. 4 illustrates the collaboration network among the authors who work on themes related to innovation in RBM. The majority work in small, closed groups, especially recently. Thus, further collaboration is required to disseminate, apply, and develop the knowledge. The next section presents the main terms identified in the final portfolio of articles.

3.2.2. *Analysis of the keywords, co-occurrence*

Innovation in RBM is a very well-developed research area. The study of Chung-Shing (2001) is the oldest article in our final portfolio. In order to identify the investigated terms in this topic, Fig. 5 visualizes the main

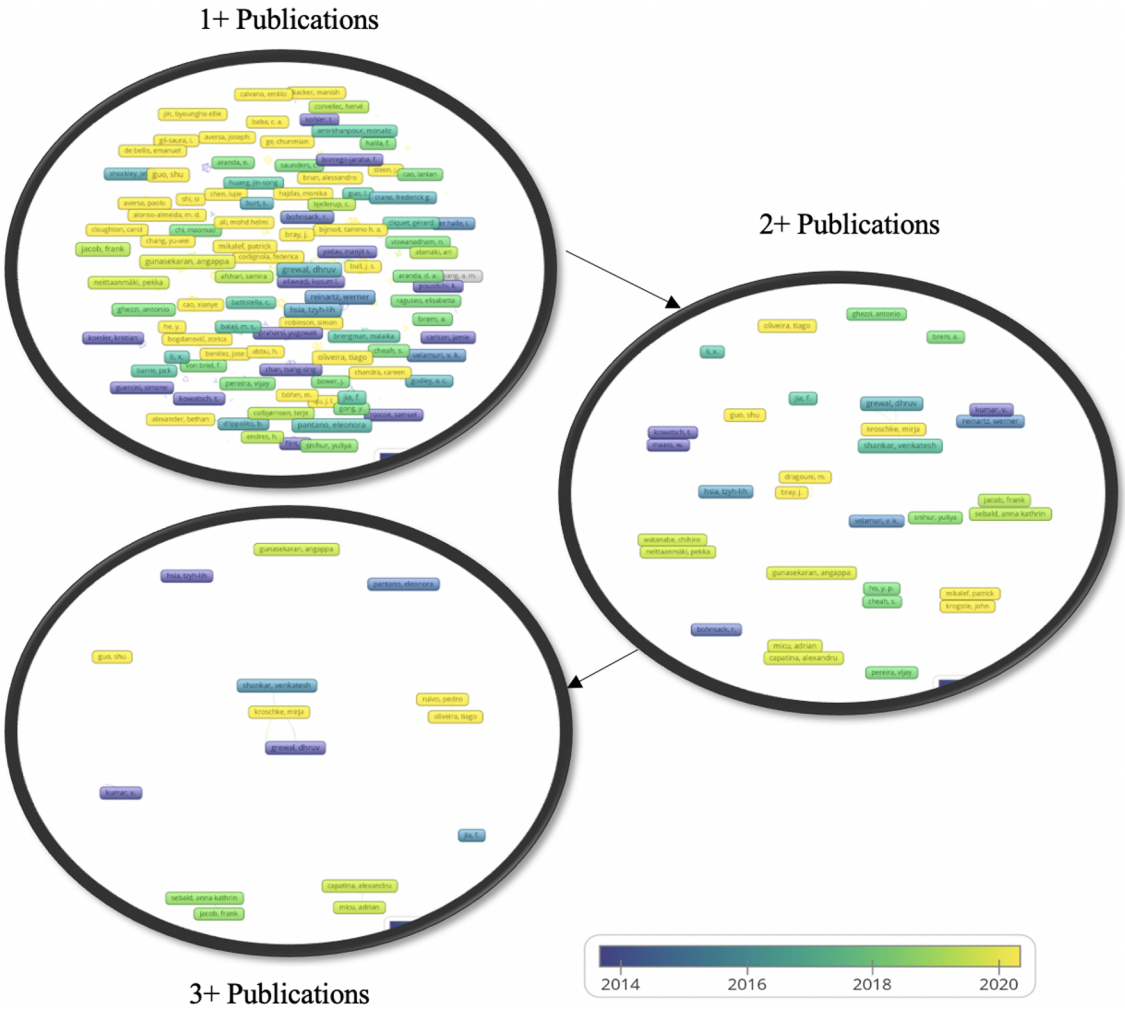

Fig. 4. Co-authorship map.

terms in the 170 articles in the final portfolio. The links between the terms are indicated by connecting lines in Fig. 5.

The following settings were applied in the VOSviewer software (version 1.6.16) to create visual maps in Fig. 5, based on the final profile of 170 articles: (a) map based on: bibliographic data; (b) read data from reference manager files: RIS; (c) type of analysis: co-occurrence; (d) Unit of analysis: keyword; (e) counting method: full counting; (f) minimum number of occurrences of a term: 5 and 10 (each is presented in a separate circle in Fig. 7); (g) number of terms selected: total number of items; (h) show: all items. (i) among the 1149 terms, based on the thresholds 5 and 10, the number of terms selected are 93 and 27, which are depicted in two circles in Fig. 5.

In addition to the obvious keywords of retailing, innovation, and business model, the keyword analysis includes various terms that are essential to consider. The more recently used keywords in the publications in the final portfolio, shown in yellow in Fig. 5, are focused more on technology advances and sustainability. Such keywords are AI (artificial intelligence), big data analytics, digitalization, sharing economy, and customer experience. The earlier publications had a greater focus on topics such as strategy, competition, and value creation. Internet and e-commerce could be found in both recent and earlier publications.

3.3. Digitalization-enabled retail business model innovation characteristics

3.3.1. Diverse digital technologies adoption.

The current view on digitalization often includes examples of various technologies that retail industry is adopting, such as IoT (Internet of things), virtual reality (VR), robots (usually empowered by AI) (Hoyer et al., 2020), and augmented reality (Nikhashemi, Knight, Nusair, & Liat, 2021). Research recommends human enhancement technology (HET), which at this stage is rather a human–robot continuum than a pure robot range for retailers (Grewal et al., 2020). Much research is needed to understand the unique applications of digital technologies and also to disentangle demands on organizational transformation so that these technologies can be effectively utilized.

Despite the positive impacts of digitalization, such as cost reduction and effectiveness, not all retailers are able to benefit from the technology advancements. For instance, some Swedish retailers letting down omnichannel by the store (Karmakar, 2021). As much as retailers struggle to provide consistent customer experiences across multiple channels (Karmakar, 2021), the actual business models are not fully prepared to deliver (Gavrila & de Lucas Ancillo, 2021). Other risks and pitfalls that retailers need to consider when adopting advanced technology are privacy issues, security issues, lack of competent employees, lack of technical infrastructure, uncertainty over the exact costs involved, and uncertainty about the return on investments and potential benefits (Raguseo, 2018).

3.3.2. Data driven insights.

In both managerial and academic communities, the business model has reached a consensus in supporting strategic decision making as a management prop (Osterwalder, Pigneur, & Tucci, 2005). Digitalization has provided data in high volume, velocity, variety, and veracity (Cheah & Wang, 2017), which enables data-driven strategies for business model innovation. For example, analyzing consumer purchase behavior and predicting future sales, traditional retailers had to rely on sales data alone. Then, new tools, such as customer relationship management (CRM), were introduced to track customer loyalty. The Internet of things (IoT) revolutionized the availability and type of data by providing retailers in real time with accurate data about the actual usage of products and services (Cheah & Wang, 2017; Hoyer et al., 2020). With such data in hand, retailers are able to transform their relationships with customers, which in turn will transform their operational management and revenue streams (Kamble, Gunasekaran, Parekh, & Joshi, 2019).

The transformational and strategic benefits of adopting digital technologies, such as big data, can enable a quicker response to change, provide better offerings, establish useful links with other organizations, create a competitive advantage, expand capabilities, develop new business opportunities, and decrease operating and communication costs (Raguseo, 2018). One example is TrusTrace, a company that provides retailers with detailed information on sustainability from the beginning of the supply chain for each product in order to make the firm's sustainability efforts transparent for final consumers (TrusTrace, 2021). They employ an AI engine for data validation and the blockchain network to decentralize and secure product information (TrusTrace, 2021). Studies recognize that large digital players, such as Apple, Google, Facebook, eBay, and Amazon, have compiled huge amounts of personalized data from end consumers. This can pose a threat to the innovations of existing retailers because of large players' pervasive customer ownership, data-driven marketing abilities, and aggregated personalized customer knowledge (Pousttchi & Hufenbach, 2014). Retailers are faced with a serious strategic threat because their core business has a direct relationship with end customers. Thus, increasingly, we are witnessing that small and larger retail companies are transforming their operations with real-time data and using these data-driven insights for strategic decision making.

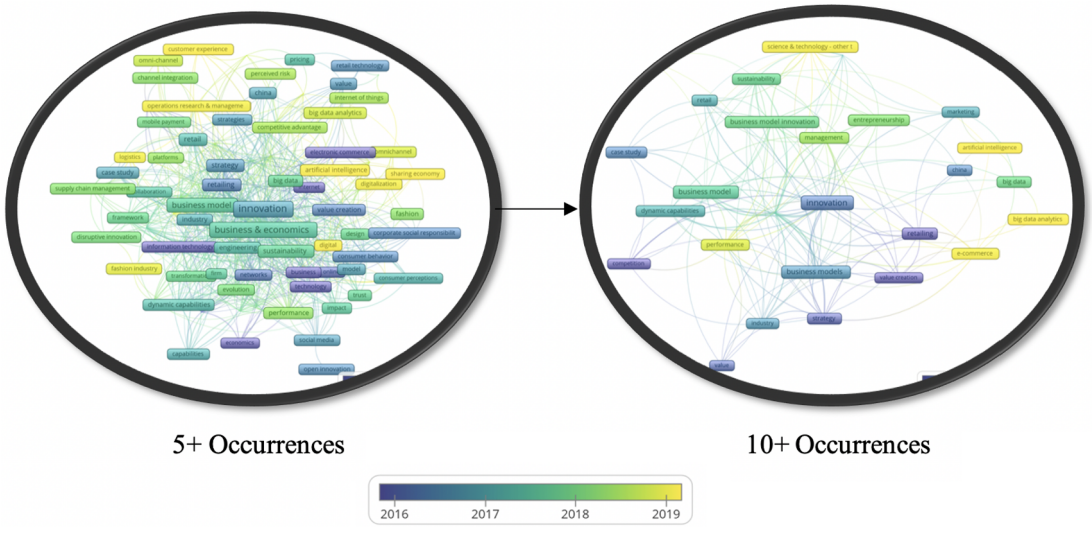

Fig. 5. Co-occurrence map of keywords.

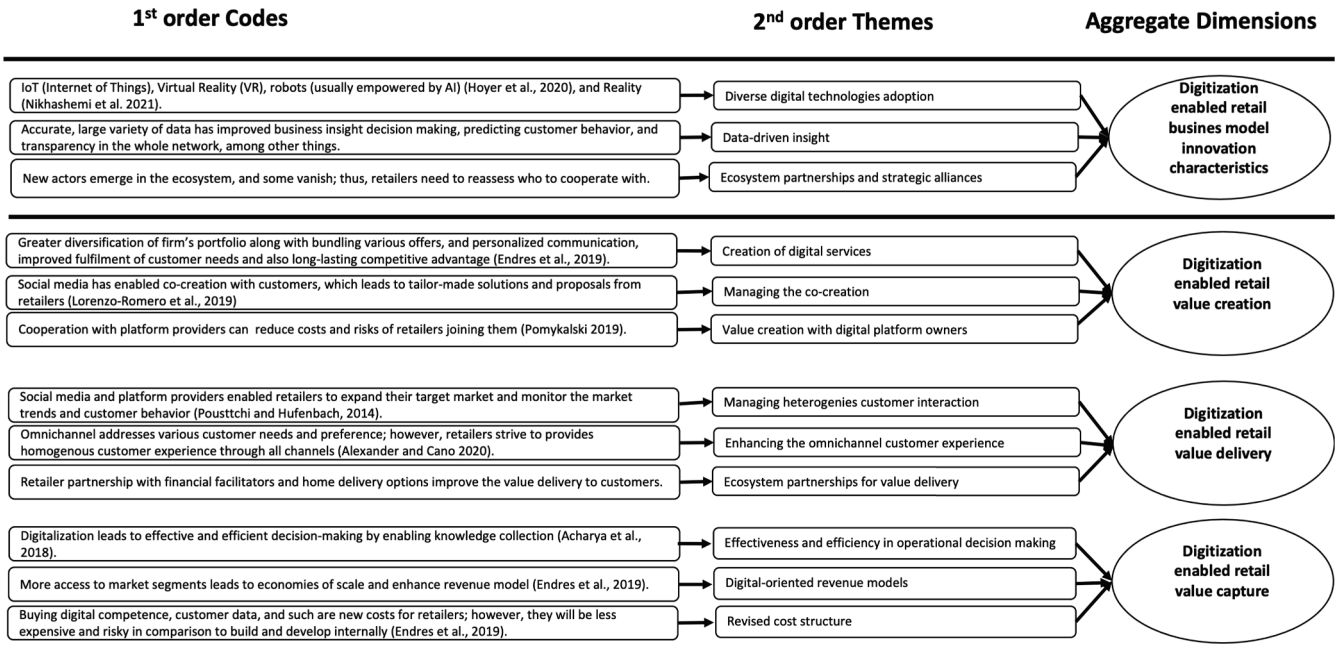

Fig. 6. Themes of digitalization enabled retail business model innovation, along with concepts and description.

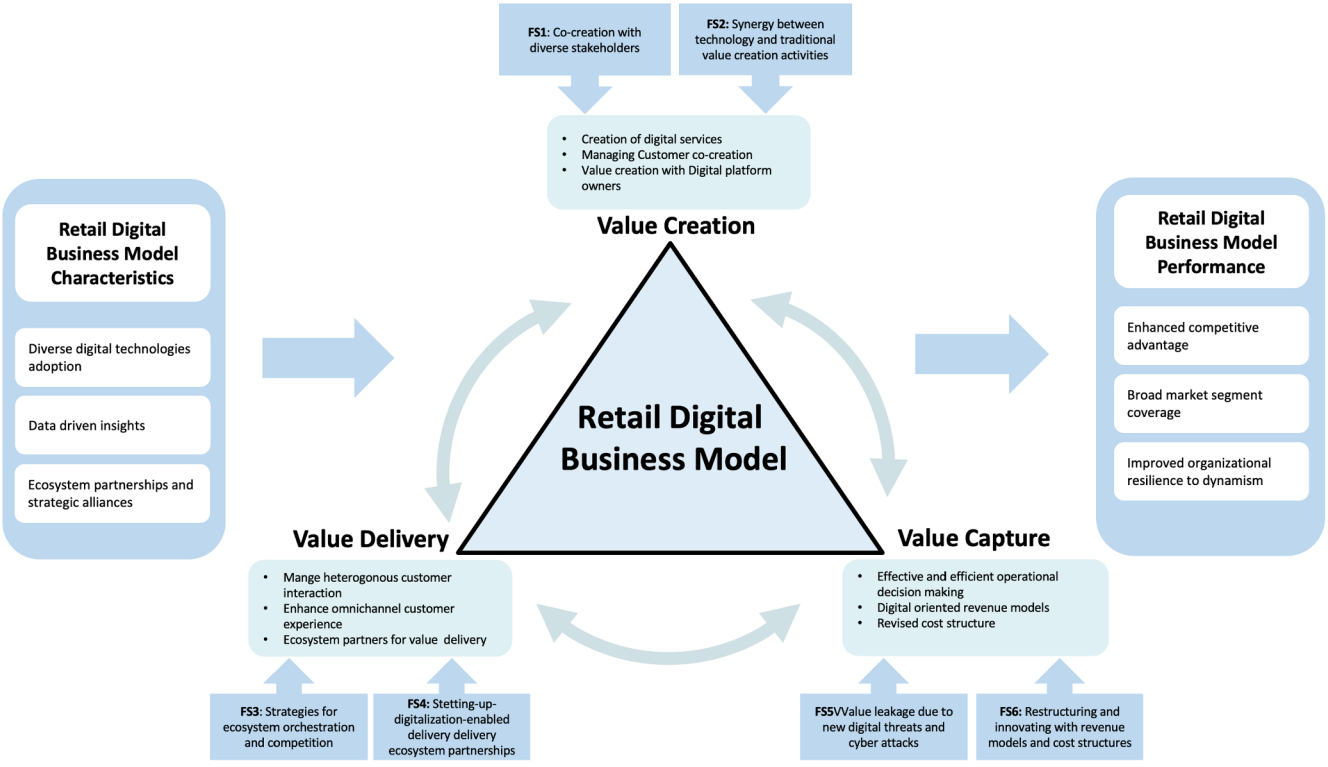

Fig. 7. Areas for future research related to digitalized enabled retail business model innovation.

3.3.3. Ecosystem partnerships and strategic alliances.

The study of Hänninen et al. (2018) shed light on the complexity of retailers' ecosystems with their high levels of digitalization (Hänninen, Smedlund, & Mitronen, 2018). Not only does the nature of the partners in these ecosystems look different from traditional retailers, but the type of partnership has changed as well (Hänninen et al., 2018). Traditional retailers sell their own inventory whilst modern retailers orchestrate their ecosystems of suppliers and customers (Hänninen et al., 2018). In these ecosystems, competitors collaborate to create value (Hänninen et al., 2018). For instance, Paddy Power and Betfair combined their product lines. Now, they are able to offer more unusual bets in addition to bets on niche sports (Endres, Stoiber, & Wenzl, 2019). This collaboration enhances competitive advantage, value creation for customers, experience exchange between firms, knowledge exchange and hence market position, and broad market segment coverage (Endres et al., 2019).

In particular, the need to evolve the ecosystem of retail companies in response to digitalization has become increasingly evident given the rise

of large digital and platform actors, such as Google, Facebook, and eBay. Increasingly, many retail companies view platform actors as the first reference point for customers. They can function as a filter between customers and retailers (Pousttchi & Hufenbach, 2014). Thus, retailers need to reassess their partnerships and decide who to cooperate with as new actors emerge and others vanish from the ecosystem.

3.4. Digitalization-driven retail business model innovation

Business model innovation (BMI) involves reinventing elements in some or all dimensions of the business model – namely, value creation, value delivery, and value capture (Keiningham et al. (2020). The ultimate aim of BMI is to secure a firm's growth and long-term viability (Keiningham et al., 2020).

3.4.1. Digitalization-driven retail value creation

Value creation is about understanding the value proposition and meeting the unique needs of customers (Parida et al., 2019). It also provides a conceptualization of the offering in terms of products, services, or a combination of both (Burström, Parida, Lahti, & Wincent, 2021). Below, we provide key themes from the retail industry on how digitalization has influenced value creation activities.

Creation of digital services

In order to address digitally savvy consumers, greater diversification of a firm's portfolio along with bundling various offers and providing personalized communication have made it possible to better fulfill customer needs and create a long-lasting competitive advantage (Endres et al., 2019). One example is Coop (a European grocery retail chain) that introduced a robot to their leading stores to help customers find receipts and the whereabouts of store products – or simply to answer other frequently asked questions.

During Covid-19, some retailers (such as Åhlens, a Swedish retailer) offered their own delivery services – instead of the regular postal service – and other third parties to motivate consumers with a quicker and free service. Thus, retailers have recognized that, in addition to having a competitive portfolio of products and traditional services, digital services are needed to complement existing offerings so that customer value is enhanced.

Managing the customer co-creation

Through digitalization, retail companies have found new avenues to co-create value with customers. Companies are replying on social media and other digital interaction modes to develop tailor-made responses, solutions, and proposals for their globally distributed, heterogeneous customer segments (Lorenzo-Romero, Cordente-Rodriguez, & Alarcon-del-Amo, 2019). Edvardsson and Enquist (2011) illustrate how value co-creation with customers and the prioritizing of ethical values in the business model can lead to service excellence and innovation. Knowledge co-creation in the retailing industry and the use of big data have enhanced effective and efficient decision making (Acharya, Singh, Pereira, & Singh, 2018).

Value creation with digital platform owners

Of the top ten most valuable companies in the world, seven derive their value from digital platforms (Pomykalski, 2019). There is a significant positive relationship between market capitalization and the revenue of companies with digital platform business models (Pomykalski, 2019). Just as football managers analyze the number of "assists" a player makes (by giving a good pass to another player who scores), marketing managers need to know which channels (or tools) actually "assist" the website goal conversions (Chaffey & Smith, 2017). Platform owners have positioned themselves as central actors in the retail industry. These firms have connections to and frequent interaction with large numbers of customers with service or product providers. Retail companies can co-innovate with platform owners. For instance, Rapunzel of Sweden has reduced its costs and risks by using Amazon's platform to reach out to customers worldwide. They provide hair extensions with real, natural hair (Rapunzel of Sweden, 2022).

The downside for retailers joining such platforms is that they will not have that direct connection with customers because these platforms own the customer data. This would also, in the long term, make them lock-in platform owners. In consequence, traditional retailers struggle with the complex decision to design cooperation with a platform that does not deprive them of their business autonomy. For instance, smartphone producers lost most of their profits to platform providers (McAfee & Brynjolfsson, 2017) because they lost sight of the negative financial effect of heavily relying on product-based sales.

3.4.2. Digitalization-driven retail value delivery

Value delivery includes processes and activities that are needed to deliver the final offering (Burström et al., 2021). This often includes developing new capabilities and resources as well as forming strategic partnerships with ecosystem partners to ensure profitable offering delivery (Parida et al., 2019). Based on an analysis of the literature, we highlight key themes on how the retail industry uses digitalization for value delivery activities.

Managing heterogenies customer interaction

To delivery high value to diverse customers, retailers require a detailed segmentation strategy, but this places high demands on managing the process of customer relationships (Palmatier & Sridhar, 2017). Through digitalization, customer interactions can be more effectively managed because senior managers in retail companies can better understand these customer-specific differences in order to meet their new expectations (Sebald & Jacob, 2020). Digitalization has empowered retailers to reach more customer segments by collaborating with partners (Endres et al., 2019) as well as connecting to well-stablished platforms, such as Amazon and Facebook, and expand their target segments (Pousttchi & Hufenbach, 2014).

Demographics and household statistics are not sufficient for segmentation. The technological readiness of customers has been identified as one of the key characteristics (Hallikainen, Alamäki, & Laukkanen, 2019). Moreover, with ever changing customer preferences, digitalization has empowered retailers to monitor market trends and customer behaviors closely so that they can predict them more accurately (Capatina et al., 2020; Oberoi, Patel, & Haon, 2017).

Enhancing the omnichannel customer experience

New advanced technologies have not only improved the online customer experience but also their experience in physical stores (Alexander & Cano, 2020; Battisti & Brem, 2020; Grewal et al., 2020; Hoyer et al., 2020; Roy, Balaji, Sadeque, Nguyen, & Melewar, 2017; Shi, Wang, Chen, & Zhang, 2020). One example is the study of Grewal, Noble, Roggeveen, and Nordfalt (2020), which focused on the future of in-store technology. Jocevski (2020) has identified five areas of possibility for innovation in order to bring the digital and physical shops closer together – namely collaborations, in-store technology, data analytics, the role of sales associates, and leveraging a mobile channel.

Such omnichannel strategies enabled by digitalization have provided customers with various points to order, collect, or return products and information. The literature emphasizes the significance of coordination of physical and digital channels (Sun, Yang, Shen, & Wang, 2020). The challenge for retailers is to homogenize the customer experience throughout all different channels.

Ecosystem partnerships for value delivery

Innovation in retail ecosystems is usually overlooked, since product innovation has received almost all the attention in both academia and in practice (Tambo, 2014). However, the new partnerships in retail ecosystems have become more important since retailers sometimes offer the same products or very similar ones as their competitors. Consequently, they need to differentiate, based on value delivery activities and functionalities. For example, partnering with financial facilitators, such as Klarna, provides an added advantage in value delivery since customers are able to receive the products and pay within 30 days. Another important value delivery partnering arrangement involves logistic parties who can provide diverse delivery options. A prime example is

Budbee who delivers products to the door rather than via the post office or a pickup point. During the Covid pandemic, retailers depended upon the logistic actors' ability to make home deliveries to customers in a timely and cost-efficient manner.

3.4.3. Digitalization-driven retail value capture

Value capture deals with the cost structure and revenue model (Teece, 2010). This dimension of business models is particularly important to ensure that efforts and resources invested in creation and delivery is converted into profitable business outcomes (Parida et al., 2019). Appropriate risk assessment in relation to the application of digital technologies is also a relevant consideration in the retail industry context as companies introduce new business models.

Effectiveness and efficiency in operational decision making

Digitalization has enabled parallel data computing, data transparency, permanent recording data authenticity, and data security (Choi et al., 2020). Thus, it leads to effective and efficient decision making by enabling knowledge collection (Acharya et al., 2018) and reducing costs through optimized processes (Willems, Smolders, Brengman, Luyten, & Schöning, 2017). A clear corporate data strategy is necessary to leverage the adoption and development of decision support systems (Aversa et al., 2021). Research has shown that most inventoried technologies provide cost reduction (Willems et al., 2017).

Digital-oriented revenue models

Collaboration with other actors in the ecosystem provide retailers with greater access to market segments and increased production, which leads to economies of scale and improves the revenue model (Endres et al., 2019). Digital strategies can result in the development of new revenue streams for retail companies. For example, Apple allowed all external app developers to develop apps for the App Store as opposed to limiting it to app developers from Apple itself (McAfee & Brynjolfsson, 2017). When the price of popular apps such as Angry Birds goes to zero, quantity demands increases. Even when the price of iPhone goes up, the demand for it increases slightly (McAfee & Brynjolfsson, 2017). Other examples include customer and other digital data as a source of new revenue streams. Thus, digitization can lead to the development of revise and sometimes even new revenue streams for retail companies.

Revised cost structure

Collaborating with those companies that have their own customer ownership can optimize retailers' marketing costs, among others (Endres et al., 2019). For instance, Rapunzel of Sweden sells its products worldwide through Amazon's platform. The company does not need to deal with legal processes for each country and decreases its market entry costs dramatically. Even though buying digital competence and data from others are costly, it might be less expensive for smaller retailers to produce them inhouse.

Fig. 6 depicts all the themes explained in this section. The first-order concepts and descriptions of each theme are presented in Fig. 6.

4. Areas for future research related to digitalization-enabled retail business model innovation

Based on literature review analysis and the assessment of the emerging themes in the digitalization-enabled retail business model innovation, we have identified six specific areas that have been overlooked, underdeveloped, and deserve the attention of researchers. We have organized these research tracks in relation to value creation, value delivery and value capture dimensions of digitalization-enabled retail business model.

First, advanced technology has facilitated co-creation with various retail stakeholders. Greater focus has been afforded to value co-creation with customers (Lorenzo-Romero et al., 2019). However, research in co-creation with other established and emerging stakeholders is in its nascent stage. Traditionally, retailers had direct relationships with end customers. Yet, collaboration with digital platform owners, such as Amazon, puts a restriction to direct relationships with those end customers. In addition, categorizing different ecosystem actor types and designing appropriate co-creation frameworks based on actor types needs further investigation. Therefore, we encourage future studies to examine co-creation with diverse stakeholders for the purpose of high value creation.

Second, digital technologies are embraced in more elements of value creation. However, research recommends human enhancement technology (HET) instead of a pure robot range for retailers (Grewal et al., 2020). Even if a "retail apocalypse" has been experienced by some traditional brick-and-mortar retailing (Paul & Rosenbaum, 2020), it does not mean that future retail must exclude physical stores completely (Jocevski, 2020). The empirical study of Sun et al. (2020) emphasizes on congruity between online and offline channels. Hence, academic research needs to investigate how to maximize synergy between emerging technologies and traditional value creation activities.

Third, the retail business models have been revolutionized so that most retailers no longer manage the entire supply chain themselves (Hänninen, Smedlund, & Mitronen, 2018). This has resulted in the introduction of new roles for actors in emerging business ecosystems. In future, retailers will not be competing individually but as part of a wider ecosystem. Thus, the role of forming strategic partners is more important than ever. Despite some empirical studies, such as Chi, Wang, Lu, and George (2018), there are no clear strategies to forming these ecosystem partners. Moreover, it is possible that retailer firms' future ecosystem includes partners that are their competitors. This would imply an adaption of coopetition strategy (Bengtsson, Kock, Lundgren-Henriksson, & Näsholm, 2016) but how to develop and implement such a complex strategic orientation is not clear. In consequence, there is a clear need for research to evaluate the strategic partnerships and networks in innovative digital ecosystems (Tambo, 2014).

Fourth, the entirety of the retailer's ecosystem competes with other ecosystems. The focus on products is shifting to a one-package delivery solution where customers have more convenient options for payment, product pickup points, engagement activities, bonuses, and loyalty services, among other features. For instance, Rituals (a retailer, rituals.com) has developed a culture and lifestyle by sharing healthy food receipts, offering tips for yoga exercises, and arranging events– all in addition to membership programs through their channels. Källa (https://kalla.com/) is another company with similar services (e.g., healthy food receipts) centered on their core products. H&M (one of the leading retailers in the world, hm.com) provides its members with access to nine different special offers from not only H&M's services – such as hiring a dress from H&M or 15% off in H&M's secondhand shop – but also from other firms such as Beauty Bar by Dashl (dashl.se). Delivering such higher value by providing customers with several convenient options at each stage of the shopping process (from searching to actual purchase) and even during the use of products, is possible because digitalization and advanced technologies have these qualities built in. Despite the increasing trends in practice, research has not paid sufficient attention to digitalized-enabled retailing value delivery. Thus, future studies need to focus on setting-up digitalization enabled delivery ecosystem partnerships.

Fifth, there are limited studies on securing the digitalization-enabled retail business model innovation. Many studies have focused on technologies to improve operations and customer experience, while there is a dearth in the extant literature on improving security for these digital business models. In 2021, Coop (a European grocery retail chain) experienced a cyber-attack. Customers were not able to pay. Consequently, Coop was forced to close its stores for several days. The retailer Bauhaus experienced a comparable situation. We are witnessing a growing trend of hackers attacking systems, which can lead to value leakage rather than capture through digitalization. Besides technological security, retailers need (a) clear strategies to prevent cyber attacks and (b) strategies following such attacks to keep vital processes running and to expedite recovery. Research studies should investigate the possible strategies (for both prevention and recovery) that need to be

integrated into retail business models. These decisions impact the selection of strategic partners and internal competencies for an innovative retail business model.

Finally, digitalization has opened new revenue models and changed cost structures. For instance, new costs need to be considered such as investment in digitalization capability development, payments to platform owners, payment to logistic companies, etc. At the same time, retail firms need to consider new revenue models, that maybe related to advisements, or sale of their data, etc. Thus, the profit formula for digitalization enabled retail business model is much different than what has been the norm for traditional retail firms. There are many risks and costs involved, which need to be identified and fully clarified by both scholars and executives. Thus, further research on value capture in digitalized-enabled retail business model innovation is required.

Based on the suggested areas for future research as well as integrating the themes of research that were identified based on literature review, we develop a holistic framework for digitalization enabled retail business models (See Fig. 7). The framework places high emphasis on revising all dimensions of business models as retail firms undertaken this significant transformation. If successful, we find evidence for numerous performance gains. First, enhanced competitive advantage is possible as digitalization enabled retail business model transformation has empowered retailers to create value within their ecosystem by collaborating with different actors such as their competitors. The empirical study of Endres et al. (2019) illustrates how the exchange of experience and knowledge leads to the enhanced competitive advantage of both firms. Second, broader market segment coverage is realized as a result of coopetition, and access to each other's market segments firms can create value together with other actors in their ecosystem for a wider range of market segments (Endres et al., 2019). Finally, we find evidence for improved organizational resilience to dynamism and changing market conditions. Digital technologies embedded in business models empower retailers with agility to respond to dynamics and volatile market situations (Raguseo, 2018).

5. Discussion, theoretical and managerial implications

This study adds to the body of literature by rigorously identifying the main researchers and the most impactful studies in this area, in addition to assessing the emerging themes in the digitalization-enabled retail business model innovation. We discuss the theoretical contributions as follows.

First, the results of this study shed light on characteristics of digitalization enabled retail business model innovation which are as follows: (1) widespread range of digital technologies for retail business model, (2) digital technologies have enhanced quantity and quality of information required for decision-making processes, and (3) digital technologies have re-framed the ecosystem partnerships and strategic alliances.

Second, this study revised all the dimensions of retail business model that have been enabled by digitalization. In value creation we have (a) creation of digital services (b) managing customer co-creation, and (c) value creation with digital platform owners. In value delivery we have (a) managing heterogonous customer interaction, (b) enhancing omnichannel customer experience, and (c) selecting ecosystem partners for value delivery. Finally in value capture we have (a) effective and efficient operational decision making, (b) digital oriented revenue models, and (c) revised cost structure.

Third, the study provides a holistic framework of characteristics of retail digital business model innovation, the revised dimensions of BM, performance of retail digital business model, and directions for future research (Fig. 7).

The results of this study have several managerial implications. First, executives need to focus on developing digitalization capabilities – that is to say, formalized routines for using technology as a way to drive efficiency and innovation, which are critical elements in future competitiveness. Second, managers need to develop ecosystem collaboration strategies. Forming strategic alliances with diverse actors, especially on the value delivery side (such as banking company, service partners, and logistic companies) is critical for a retail company that wants to ensure successful implementation of retail digital business model innovation. Finally, executives and practitioners have to align business model elements across their retail business model. All dimensions of the business model related to value creation, delivery, and capture need to be made to work together, taking a holistic approach. Otherwise, there is the risk that companies will work too much with one dimension to the neglect of others, leading to a flawed BMI. So, we need dedicated staff and resources to implement retail BMI.

Despite adapting different bibliometric analyses, some limitations remain as has been the case with previous bibliometric studies (e.g., Caputo et al., 2021). One possible limitation may lie in the chosen keywords used to search for articles. This strategy may have excluded relevant articles that have not used the exact keywords. The other limitation could be the focus on business studies in the Scopus database. This may have excluded younger fields of inquiry that have not yet decided on a specific research stream. Finally, the approach of this study was to take a somewhat panoramic view of the field on different dimensions of retail business model with a focus only on peer-reviewed journal articles. Future studies may wish to focus in greater depth on different theories and methodologies employed in this research area.

CRediT authorship contribution statement

Rana Mostaghel: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Pejvak Oghazi:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Resources, Project administration, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Vinit Parida:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Vahid Sohrabpour:** Writing – original draft, Writing – review & editing, Methodology.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgment

The authors appreciate the editor's and anonymous reviewers' constructive comments and suggestions. The authors are also grateful for the financial support provided by Vinnova (Project no: 2019-03017) and The Research Council of Norway (Project no: 322623) that have allowed us to undertake this important study.

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