Characterising Social Reading Platforms—
A Taxonomy-Based Approach to Structure the Field

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Abstract. Due to digitalisation the way of discussing on books changes. Especially social reading platforms foster a more sociable and collaborative mentality. Manifold platforms exist that differ, for instance by enabling different formats to discuss on books, such as book club, forum or direct text work. As no consolidated overview of social reading platforms exists, this study aims at deriving a taxonomy of social reading platforms to structure the field. Based on (1) an initial literature review and (2) a collection of social reading platforms, we derived (3) the taxonomy that considers essential characteristics. Further, through (4) a cluster analysis, four types of platforms could be identified. Overall, based on the taxonomy researchers and practitioners can be informed within the variety of platforms, to compare, refine and develop further social reading platforms.

Keywords: Digital Transformation, Creative Industries, Digital Humanities, Social Reading Platforms, Taxonomy.

1   Introduction

"The digitalisation is likely to change written culture, and therefore, at the same time society, even more than the development of Gutenberg's book printing."
(translation of Volker Oppmann, CEO of the social reading platform Mojoreads)
Digitalisation refers to changes in various fields and influences human life [1]. Due to digital transformation, the way of communication, collaboration and participation within the entire society is changing [2, 3]. Creative industries (e.g., art, music, film) including book industry, as Volker Oppmann already stated, are highly affected by digital transformation as new information technologies enable changed ways of discussion on cultural and aesthetic practices. A variety of social reading platforms—the wide range will still increase—fosters a more sociable and collaborative mentality, enabling different formats to discuss and share opinions on books in the community. Consequently, digitalisation will lead to changed reading attitudes, habits and practices, resulting in novel realities and discourses [4]. Further, a notable part of German book sales—about 18.8% of sales of the German book trade in 2017 [5]—takes part on the

Internet. According to [5], the estimated sales of Internet book sellers in 2004 accounted for 506 Mio. €, and in 2017 for 1.710 Mio. €, which is an increase of about 3.4 times over 13 years. Especially social reading platforms become more important for sellers and publishers, as they offer new opportunities, to improve the visibility of books for sales and book recommendations [4] and to address trends, influencing future product developments. For instance, LovelyBooks records more than 1.5 Mio. users per month and 70% of the users regularly buy books which they discovered on LovelyBooks [6].

Although social reading platforms are of growing interest, these platforms are very heterogeneous. That is why it is difficult to maintain an overview of their characteristics. Prior studies provided an overview of existing social reading platforms [4, 7] or a first proposal to structure social reading spaces [8, 9], focussing on limited characteristics of social reading. Nevertheless, as there is a need for "a taxonomy to make sense of a range of behaviours all which fit within the current 'social reading' rubric" [8], to the best of our knowledge, no consolidated overview exists. In order to promote this evolving field, we aim to develop a taxonomy that structures the field of social reading. Accordingly, this study aims to answer the following research question:

What kind of characteristics are provided by social reading platforms and how can these characteristics be structured?

To answer this question, we aim to derive a taxonomy of social reading platforms. A taxonomy facilitates the characterisation and analysis of a certain domain and supports ordering the complexity and provides a foundation for IS research, potentially leading to future research directions [10]. Both for research and practice, the taxonomy can be used to derive implications for future social reading platforms. Researchers are, for example, supported to position and redesign their platforms or research results, and to identify gaps that need to be addressed by future endeavour. Practitioners (book sellers, publishers), for instance, can be informed within the wide range of social reading platforms, to compare, refine and develop further platforms. In addition, users (e.g., reviewers, authors) are supported to make an informed decision concerning the selection of a social reading platform as they receive an overview of platforms and their characteristics. For developing the taxonomy, we first outline the background of social reading and social reading platforms (Section 2). Following our research design (Section 3), we gathered initial literature, collected social reading platforms and applied a taxonomy-development approach to classify the platforms based on specified characteristics. Further, we identified types of social reading platforms by carrying out a cluster analysis (Section 4). Afterwards we discuss the limitations, results and implications (Section 5) and conclude with our main findings (Section 6).

2 Background

In this section, we introduce the concepts of social reading, social reading platform and attempts in research to structure social reading platforms.

Social reading platform. Traditionally, reading is associated to be done alone, underlining text passages and writing notes in the margins. However, readers have

always communicated their impressions and evaluations about what they read, restricted to small communities (e.g., traditional book clubs) [4]. Thus, reading itself as it functions as a vehicle of human interaction by transferring thoughts and emotions between people can be defined as a social activity. According to various researchers, digitalisation changes the basic structures of communication before, during and after reading [11] and enables a changed form of socialisation of reading that encourages collaboration and exchange, resulting in a more and more social reading [4, 12, 13]. In addition, social reading can be described as a form of collective reading of digital texts and communication in reader-centred communities in digital networks [11]. An Internet platform or a specific software product is the meeting place for social reading in the above described sense. Taking part in such an application, users can communicate, exchange information and share opinions on books [14]. To do so, for instance, the platforms allow users to write reviews on books or participate in books clubs.

Structuring social reading platforms. Due to the increasing relevance of social reading platforms, some studies already attempt to structure and specify them. Nonetheless, by conducting a literature review[1], we found only a few articles that provide a first structure. Whereas Cordón-García et al. [4] and Boesken [7] provided an overview of existing social reading platforms, Stein [8] provided a taxonomy of social reading in order to make sense of behaviours that fit with the current social reading practices. However, he focuses on technology and considers online discussion used in social reading in a more general way. Moreover, Winget [9] provides an augmented taxonomy of social reading, reflecting background in commonplace books and annotation behaviour. Following, to the best of our knowledge, there is no research providing a consolidated structure of social reading platforms, and there still seems to be a need for a widely accepted overview. Accordingly, in this study we aim to close these gaps by providing a proper basis for further research in the field of social reading.

3   Research Design

In order to develop a taxonomy of social reading platforms, and therefore, to address our research question, we conducted a four-staged research design. As first steps, we carried out (Stage 1) an initial literature review and (Stage 2) collected social reading platforms. Following, based on the findings, we (Stage 3) iteratively built a taxonomy to structure the platforms obtained and performed (Stage 4) a cluster analysis to identify types of social reading platforms (Figure 1).

Stage 1: Initial literature review. As a first step for characterising social reading platforms, we conducted a literature review based on the rigorous procedure of vom Brocke et al. [15]. In March and April 2018, we searched for relevant literature in the scientific domain (that is book chapters, books, conference papers, working papers and journal publications) in both IS and literary studies. Based on our definition of social reading (Section 2), we used the following combinations of keywords in AISeL, Google

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[1] We searched for existing research that structures social reading platforms. We used "Social Reading Platform" AND ("Classification" OR "Taxonomy") as search phrase in AISeL and Google Scholar (accessed on July 2018).

Scholar, BDSL and university library catalogue: *book, literature, social reading, platform, forum, community, book seller, online shop*. After reading title, abstract and keywords, we finally considered seven scientific sources (two books, three book chapters, one journal publication, and one working paper) to define potentially initial dimensions and characteristics of the taxonomy.

	Inputs	Methods/steps	Outputs
Stage 1: Gather initial literature	• Online publications • IS research publications • Literary studies publications	• Perform keyword search • Analyse literature based on the procedure of vom Brocke et al. (2009)	• Research database • Potential dimensions and characteristics
Stage 2: Collect social reading platforms	• Research database • Potential dimensions and characteristics	• Perform broad Internet search for social reading platforms	• Social reading platform database
Stage 3: Develop taxonomy	• Research database and social reading platform database	• Develop taxonomy based on the procedure of Nickerson et al. (2013)	• Taxonomy based on conceptual and empirical findings
Stage 4: Derivation of types of social reading platforms	• Taxonomy based on conceptual and empirical findings	• Perform cluster analysis • Derive implications	• Types of social reading platforms • Implications

Figure 1. Research design

Stage 2: Collection of social reading platforms. Based on the results from the initial literature review and the researchers' expertise in the area of social reading platforms, in May and June 2018, we investigated a number of social readings platforms combined with a broad Internet based search for social reading platforms. To contribute to comparability, we included German platforms as Germany is one of the largest European markets in terms of publishers' turnover [16]. We excluded platforms that do not longer exist—although they are still listed in the Internet—or have less emphasis in the community (measured by small user numbers). As a result, we obtained ten social reading platforms.

Stage 3: Taxonomy development. The development of taxonomies has often been used to structure and analyse fields both in IS [17–19] as well as especially in creative industries [8, 20]. Moreover, taxonomies can be seen as a step towards developing analytic theories [21, 22]. In our study, we build a taxonomy in line with the rigorous procedure of Nickerson et al. [10]. Following, we define *meta-characteristics* as the components of social reading platforms. Moreover, Collaboration Virtualization Theory [23] provides significant factors (e.g., task, technology, team) which influence the success of collaboration technology. In line, as it provides potential factors that might affect the usage of social reading platforms, we adopted the framework and extended the meta-characteristics. Further, we adopted the *objective and subjective ending conditions* proposed by Nickerson et al. [10]. According to Nickerson et al. [10], the taxonomy development process is an iterative one within we may choose between

empirical-to-conceptual and *conceptual-to-empirical approach*. In sum, we run through 13 iterations, whereby after six iterations no more changes occurred (Figure 2).

As a *1st iteration* (*conceptual-to-empirical*), we integrated the taxonomy dimensions and characteristics identified during the literature review (Stage 1). As an initial result, we introduced ten dimensions: *type of communication* [4, 7, 8, 11, 24]*, realisation of subsequent communication* [7, 11, 24, 25], *off-topic communication* [7], *system-based roles* [7, 24], *identity customisation* [7, 11, 24, 26], *provided link to other communities* [4, 7, 11, 24], *registration for the platform* [7], *visibility of content* [7, 11, 25], *financing of the platform* [7, 11] and *reviewer gratification* [11, 24, 26]. Based on these conceptual findings, in the *second, third, fourth, fifth and sixth iteration* (*empirical-to-conceptual*), the social reading platforms that we collected were investigated and classified by two researchers independently to contribute to the robustness.[2] In a subsequent workshop (*iteration 7*) the results were consolidated and structured within the taxonomy, resulting in (i) new dimensions: *type of cultural artefact addressed by subsequent communication*, *assistance for subsequent communication*, *social media intelligence*, *transaction offerings*, *author gratification* as well as (ii) additional characteristics. After the sixth iteration the taxonomy led to the successful classification of all social reading platforms from the database (detailed descriptions see Section 4). In contrast to Nickerson et al. [10], the characteristics of each dimension are not mutually exclusive.

Stage 4: Derivation of types of social reading platforms. Finally, to identify types of social reading platforms we performed a cluster analysis. This type of analysis is a widespread used analytical tool in IS research for grouping objects and investigating correlations in differently-sized samples from small datasets (e.g., 15 items) to larger ones (e.g., 9025 items). Especially, for further analysis of derived taxonomies, a cluster analysis is often used in IS research [27]. In line, we used the selected social reading platforms as items and the set of characteristics on the basis of the taxonomy as clustering variables. Following, we applied the K-means algorithm that is one of the most common methods for such a clustering [28]. Following [18, 29], we applied a two-step approach to identify clusters of social reading platforms from our taxonomy by using python module *scikit-learn* that provides a wide range of machine learning algorithms, both unsupervised and supervised [30].

1. Step (Ward's method). The ward's method is a procedure to build hierarchical clusters of subsets on the basis of their similarity. The method combines two closest subsets into one cluster and repeats this procedure until all subsets are in one cluster [31]. The amount of identical characteristics along the taxonomy determined the similarity between two subsets [18]. To follow the sequence in which the subsets have

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[2] After the initial literature review (1) for each iteration, we considered a new social reading platform that we identified and performed subsequent workshops in order to consolidate results: (2) LovelyBooks (www.lovelybooks.de), (3) BuecherTreff (www.buechertreff.de), (4) Amazon (www.amazon.de), (5) Lectory (www.lectory.io), (6) Mojoreads (www.mojoreads.com), (7) Workshop, (8) WasLiestDu? (www.wasliestdu.de), (9) Buechereule (www.buechereule.de), (10) Literaturforum (www.literaturforum.de), (11) Buecher.de (www.buecher.de), (12) Hugendubel (www.hugendubel.de), (13) Workshop. After the sixth iteration, no more changes occurred.

been united in relation to the distances, we plotted a dendrogram. Regarding the significant jumps in the distance of the joint clusters, we identified three or four clusters as useful numbers. To highlight more different cluster, we chose four.

2. Step (K-means method). Second, we applied K-means method that divides data into clusters, minimising the within-cluster sum of squares [32]. We chose initial cluster centres using 'k-means++' and the algorithm iterated 300 times. Within each iteration, the algorithm run with ten different centroid seeds to get the best results.

Dimensions	Iteration 1 Conceptual-to-empirical		Iteration 2 Empirical-to-conceptual		Iteration 3 Empirical-to-conceptual		Iteration 4 Empirical-to-conceptual		Iteration 5 Empirical-to-conceptual		Iteration 6 Empirical-to-conceptual	Iteration 7 Empirical-to-conceptual	#
Type of cultural artefact			4	book, eBook, audio book, other									4
Type of communication	2	mediated & immediate discuss.											2
Realis. of sub. communication	3	review, comment, book club	3	prim./sec. like statement, forum					1	direct text work			7
Assist. for sub. communication			5	structure, elements, rules, general, export	1	categori-sation							6
Off-topic communication	2	officially provided place, none											2
System-based roles	4	reader, reviewer, author, moderator	1	blogger									5
Identity customisation	2	status information, linkage of users	2	specific profile, activity overview					1	general profile			5
Link to other communities	0		3	social media, sites & blogs, none									3
Registration for the platform	3	conditional, free, none											3
Visibility of content	2	completely public, not public	1	partly public									3
Social media intelligence			2	available, not available									2
Transaction offerings			2	affiliate link, none	1	peer-to-peer transactions	1	direct sales					4
Financing of the platform	5	personalised advertising, usage analysis, campaigns with publishers, user fee, none											5
Reviewer gratification	3	fun & tension, symb. gratific., none	1	material gratification			1	monetary gratificat.					5
Author gratification			2	direct exchange with readers, none							1	monetary gratific.	3

Caption: ▨ New dimension from the current iteration including number of new characteristics and their names.
▮ Number of new characteristics and their names of the dimension from the current iteration.
In sum, we run through 13 iterations. After iteration 6, no changes occurred in the taxonomy.

 # characteristics 59

Figure 2. Development of dimensions and characteristics for the taxonomy

4   Characteristics of Social Reading Platforms

In this section, we present our main contribution, a taxonomy of social reading platforms and the derived types of social reading platforms.

4.1   A Proposed Taxonomy of Social Reading Platforms

The resulting taxonomy contains 15 dimensions, each with two to seven distinct characteristics (Figure 3). Each dimension and their corresponding characteristics are explained in the following. It is important to note that the taxonomy contains the most important dimensions along which the platforms differ. Consequently, components that

are identical for all platforms (e.g., analysis of personal data, increasing publicity of books as gratification) are not listed here. Further, each dimension relate to one or more categories of Collaboration Virtualization Theory *task, community, technology* [23] that we extended with *business* as the taxonomy considers business issues as well.

Dimensions	Characteristics						
Type of cultural artefact addressed by subsequent communication (**TA**, B)	book		eBook		audio book		other
Type of communication (**TA**, C, TE)	mediated discussion on a book (change of medium)				immediate discussion on a book (in the margins)		
Realisation of subsequent communication (**TA**, C, TE)	primary themati-sation Writing a review	secondary themati-sation Comment function	primary themati-sation Like statement	secondary thematic-sation Like statement	book club one type diff. types	discuss-ion forum	direct text work (visual marks)
Assistance for subsequent communication (**TA**, C, TE)	prescribed structure of a review direct instructions general instructions	proposed elements of a review	writing rules & tone	general assistance		categori-sation of reviews	export function
Off-topic commu-nication (**TA**, C, TE)	officially provided place			none			
System-based roles (TA, **C**, TE)	reader		reviewer		author	moderator	blogger
Identity customisation (TA, **C**, TE)	general user profile		specific user profile		status information	activity overview	linkage of users
Provided link to other communities (**C**, TE)	social media			personal sites & blogs		none	
Registration for the platform (**TE**, B)	conditional registration			free registration		none	
Visibility of content (**TE**)	completely public			partly public		not public	
Social media intelligence (**TE**, B)	available				not available		
Transaction offerings (C, TE, **B**)	direct sales		affiliate link		peer-to-peer transactions	none	
Financing of the platform (**B**)	personalised advertising	usage analysis		campaigns with publishers	user fee		none
Reviewer gratification (TA, C, **B**)	monetary gratification	material gratification		symbolic gratification	fun & tension		none
Author gratification (TA, C, **B**)	direct exchange with readers		monetary gratification			none	
Caption:	Categories: TA = task, C = community, TE = technology, B = business			A dimension can be assigned to different categories. However, each dimension can be assigned to a most relevant category that is presented with bold letters.			

Figure 3. Taxonomy of social reading platforms

Type of cultural artefact addressed by subsequent communication. Using social reading platforms to discuss and share opinions within a community, not only *books* but also *eBooks*, *audio books* or *other* cultural artefacts (e.g., public reading by authors, music or films) can be focused.

Type of communication. First, platforms allow people to write and share a review —separated from the book text itself—and to engage in subsequent discussions on specific books (*mediated discussion on a book—change of medium*). Second, providing a dynamic margin on the page of a book, allows a close discussion on books. The composition of multiple comments forms a review (*immediate discussion on a book— in the margins*) [8].

Realisation of subsequent communication. Social interaction related to social reading can be shaped by the theoretical concept of subsequent communication. It

defines communication that is directly attached to the book [7, 11]. People directly write a review on a book (*primary thematisation—writing a review*) or they comment on reviews of other people (*secondary thematisation—comment function*). Further, numerical ratings (e.g., star, heart or thumb ratings) both for the book in general (*primary thematisation—like statement*) or for reviews or comments of other people (*secondary thematisation—like statement*) can be made. In addition, *book clubs* allow the structured discussion on books, offering different types of application (e.g., discussion on a chapter is only possible/open, after everyone read the chapter or at any time, readers are allowed to write comments to each chapter). For instance, authors or publishers can initiate a book club for a selected book. Interested people can participate—sometimes restricted by application procedures or number of participants—after having read the book. Thus, the initiator of the book club can start the discussion on the book, providing a structured selection of themes (e.g., by chapters of a book) that have to be discussed, resulting in multiple reviews and comments. The initiators get customised, structured feedback and the participants can engage in clear discussions, to communicate their feelings and evaluations about what they read. Moreover, people are supported to address additional literary themes, using a *discussion forum* and sometimes *direct text work (visual marks)* on books (e.g., use of text marking, bookmarks) is possible.

Assistance for subsequent communication. While writing a review, some platforms *directly* provide a *prescribed structure of a review* (e.g., reviews' title, short summary, positive and negative issues, resume) and/or *directly propose elements* that might be *discussed* (e.g., writing style, story of the book, figures). In contrast, both for *structure* and *elements general instructions* that are not simultaneously provided while writing a review are possible (e.g., first entry of a discussion forum that explicates how a review can be structured). In addition, *writing rules and tone* (e.g., rules of courtesy as avoiding swear words and personal insults, observance of spelling), *general assistance* for dealing with the platform and its characteristics (e.g., FAQ document, an introductory learning unit after registration) and a *categorisation of reviews* (e.g., verified sale) are provided. Moreover, some platforms allow *exporting* the text of subsequent communication.

Off-topic communication. Further, off-topic communication (i.e., communication without direct relation to literary themes) [7] can be performed on *officially provided places*. For example, some platforms provide an independent discussion forum or support exchange of messages between people (e.g., via chat or pin board).

System-based roles. To receive content on a platform and to participate in discussions on books, several system-based roles are established [7]. People can read content (e.g., reviews, discussions in book clubs) (*reader*) and participate in discussions as *reviewers*, mostly after registration. Further, people can register as *author*, *blogger* or *moderator* with special rights (e.g., generation und control of book clubs).

Identity customisation. People can create a virtual identity, to be noticeable for others in order to get an idea of each other, and to build an important foundation for trust [7]. Their virtual identity can be customised via an user profile (*general user or specific user profile*), several forms of *status information* (e.g., number of received "likes", rank measured by number of reviews and their helpfulness assessed by others),

activity overview (e.g., reading statistics, wish list of books) and *linkage to other users* (e.g., "following" users, finding "friends").

Provided link to other communities. Further, the connection to other communities, offering links to *social media* (e.g., connection with Facebook account, social media button) or *personal sites and blogs* (e.g., link to book blog) can be provided.

Registration for the platform. To take part in discussions and to make use of all functions, a *free registration* can be required. Sometimes, a platform might be a more "closed system", providing access to a selected number of people (e.g., after invitation) (*conditional registration*).

Visibility of content. The general public is able to read, and therefore, to receive the whole content, presented on a platform (*completely public*). However, sometimes the visibility of content might be partly restricted to public (*partly public*) (e.g., author profiles are visible, whereas visibility of reviewer-profiles depends on registration) or only visible for a closed community (*not public*).

Social media intelligence. Aiming to collect, monitor, analyse, summarise and visualise data of the platforms, social media intelligence is integrated (*available*) [33]. For instance, a similarity function provides similar users within the community that are sometimes called "book neighbours". Further, similar authors or books are recommended that support the selection of further books.

Transaction offerings. Platforms directly support purchasing a book (*direct sales*) or guide people by an *affiliate link* to an external online-shop that, in case of purchase decision, financially supports the platform. Besides, *peer-to-peer transactions* allow exchange of cultural artefacts (e.g., "buy, exchange, gift forum").

Financing of the platform. To finance a platform, several activities are addressed by providers. *Personalised advertising* (e.g., newsletter, press advertising) or *usage analysis* to contribute to market and opinion research and to improve services are sample activities. To do so, external services are frequently used (e.g., Google Analytics). Further, *campaigns with publishers* (e.g., book club initiated and controlled by publishers, free copies) or *user fees* are possible financial sources.

Reviewer gratification. Next to more social gratifications of society (e.g., presentation and confirmation of peoples' own reading quality, belonging to a community) [11], some reviewer gratification can be derived from the platforms. People can have *fun and tension*, participating in specific games (e.g., writing competition, riddles), they can gain *symbolic,* (e.g., status enhancement because of users' activities), *monetary* or *material gratification* (e.g., draw of books).

Author gratification. Besides, authors benefit as they *directly interact with readers*, receiving immediate feedback. Also, *monetary gratifications* are possible.

4.2   Types of Social Reading Platforms

Following the cluster analysis method (Section 3), we identified four clusters. Each cluster has a different focal point along the dimensions and characteristics of social reading platforms. As the characteristics within a dimension are collectively exhaustive, the results can be read as percentages. Moreover, the absolute frequency of each characteristic is presented. For example, 100% of the social reading platforms in Cluster

1 support mediated discussion on a book as type of communication. In sum, the majority of platforms (9/10) supports such a mediated discussion (Figure 4). The darker the colour of a cell, and therefore, the higher the percentage of a characteristic within a dimension, the more it is shaping a cluster. Next, we present the clusters, highlighting the most typical characteristics of each cluster and utilising demonstrative examples.

Cluster 1—manifold discussions within a bonded community. The *mediated discussion on books* has been changed by digitalisation. Providing manifold *realisations of subsequent communication*, people interested in literature—especially *reviewers and authors*—can engage in meditated discussions, to communicate their feelings and evaluations about what they read. For instance, book clubs that allow a structured discussion on books, enable authors a *direct exchange with readers*, resulting in immediate feedback. To encourage collaboration and exchange, platforms provide various *assistance for subsequent communication*. Further, discussions on books are directly related to a bonded community. Therefore, users are closely linked, providing *customised identities* and expanding communication by non-literary themes (*off-topic communication*). In line, people benefit from specific games related to having *fun and tension*, from *material* (e.g., draw of books) or *symbolic gratifications* (e.g., on LovelyBooks users get "dog-ears" for their activities on the platform). Further, *affiliate links* and *peer-to-peer transactions* are provided. To reach many people, a lot of content is *visible for public* and only *free registration* in order to participate is required. For financing a platform, *personalised advertising*, *usage analysis* and *campaigns with publishers* are used.

Cluster 2—assessment of books to support purchase decisions. Offering *direct sales* transactions, platforms allow people to write reviews and numerically rate several (e.g., star ratings) *types of cultural artefacts*. Although secondary thematisation is allowed, manifold discussions between people—as they are observed in Cluster 1—are not focused (e.g., no official interaction between readers and authors). In line, less *assistance for subsequent communication* is provided and identity customisation is restricted to the users' own characteristics (*specific user profile*, *status information*, *activity overview*) without special interest in linkage of users (e.g., *no off-topic communication*). Besides, the visibility of content is *completely public* and reviewer can benefit from *symbolic*, *material* or *monetary gratifications* (e.g., users win a book voucher after writing a review on buecher.de). Moreover, *personalised advertising* and *usage analysis* are used to finance the platform.

Cluster 3—immediate discussions on books within a closed community. Providing a dynamic margin on the page of an *eBook*, allows *immediate discussions on books*. Only after invitation of *moderators*, *reviewers* can register (*conditional registration*) and participate. Consequently, the content is *invisible for public*. Engaging in discussions, *book clubs*, private *discussion* groups and *direct text work (visual marks)* can be used. To do so, several *assistance for subsequent communication* is provided (e.g., prescribed structure and proposed elements). Besides, next to *personalised advertising*, *usage analysis* and *campaigns with publishers*, also *user fees* are introduced as financial sources.

Table — Type of cultural artefact / Type of commun. / Realisation of subsequent communication / Link to other communities

Dim	Type of cultural artefact				Type of commun.		Realisation of subsequent communication							Link to other communities		
Characteristics	book	eBook	audio book	other	mediated discussion	immediate discussion	prim. them. writing a review	second. them. comment fct.	prim. them. like statement	second. them. like statement	book club	discussion forum	direct text work (visual marks)	social media	personal sites & blogs	none
#*	9	7	7	5	9	2	9	9	7	9	7	8	2	9	3	1
Cluster 1	35%	18%	29%	18%	100%	0%	19%	19%	13%	16%	16%	19%	0%	75%	25%	0%
Cluster 2	25%	25%	25%	25%	100%	0%	29%	14%	29%	29%	0%	0%	0%	50%	0%	50%
Cluster 3	0%	100%	0%	0%	0%	100%	0%	20%	0%	20%	20%	20%	20%	100%	0%	0%
Cluster 4	50%	50%	0%	0%	50%	50%	14%	14%	14%	14%	14%	14%	14%	50%	50%	0%

Table — Assistance for subsequent communication / Off-topic commun. / System-based roles / Registration for platform

Dim	Assistance for subsequent communication						Off-topic commun.		System-based roles					Registration for platform		
Characteristics	prescribed struc. of a review	proposed elem. of a review	writing rules & tone	general assistance	categorisation of reviews	export function	officially provided place	none	reader	reviewer	author	moderator	blogger	conditional registration	free registration	none
#*	7	7	8	9	2	2	5	5	9	10	6	3	2	1	9	0
Cluster 1	23%	23%	19%	23%	8%	4%	67%	33%	30%	30%	25%	10%	5%	0%	100%	0%
Cluster 2	0%	0%	33%	67%	0%	0%	0%	100%	50%	50%	0%	0%	0%	0%	100%	0%
Cluster 3	25%	25%	25%	0%	0%	25%	0%	100%	0%	50%	0%	50%	0%	100%	0%	0%
Cluster 4	0%	0%	50%	50%	0%	0%	100%	0%	25%	25%	25%	0%	25%	0%	100%	0%

Table — Identity customisation / Visibility of the content / Social media intel. / Transaction offerings

Dim	Identity customisation					Visibility of the content			Social media intel.		Transaction offerings			
Characteristics	general user profile	specific user profile	status information	activity overview	linkage of users	completely public	partly public	not public	available	not available	direct sales	affiliate link	peer-to-peer transactions	none
#*	3	7	7	10	7	4	5	4	9	5	5	5	4	0
Cluster 1	4%	24%	24%	24%	24%	33%	67%	0%	100%	0%	10%	50%	40%	0%
Cluster 2	0%	25%	25%	50%	0%	100%	0%	0%	100%	0%	100%	0%	0%	0%
Cluster 3	50%	0%	0%	50%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%
Cluster 4	33%	0%	0%	33%	33%	0%	100%	0%	100%	0%	100%	0%	0%	0%

Table — Financing of the platform / Reviewer gratification / Author gratification

Dim	Financing of the platform					Reviewer gratification					Author gratification		
Characteristics	personalised advertising	usage analysis	campaigns with publishers	user fee	none	monetary gratification	material gratification	symbolic gratification	fun & tension	none	direct exchange with readers	monetary gratification	none
#*	9	9	5	1	0	3	6	7	7	1	7	1	3
Cluster 1	38%	38%	25%	0%	0%	6%	29%	35%	29%	0%	83%	0%	17%
Cluster 2	50%	50%	0%	0%	0%	33%	33%	33%	0%	0%	0%	0%	100%
Cluster 3	25%	25%	25%	25%	0%	0%	0%	0%	0%	100%	100%	0%	0%
Cluster 4	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	50%	50%	0%

* absolute frequeny of each characteristic

Caption: the darker the colour of a cell, the higher the percentage within a dimension

Cluster 1: LovelyBooks, BuecherTreff, Amazon, WasLiestDu?, Buechereule, Literaturforum,
Cluster 2: Buecher.de, Hugendubel, *Cluster 3*: Lectory, *Cluster 4*: Mojoreads

Figure 4. Results of the cluster analysis

Cluster 4—hybrid discussions on books, related to sales and monetary gratification. Both *mediated* and *immediate discussion on books and eBooks* can be performed by several roles (*reader*, *reviewer*, *author*, *blogger*). In consequence, multiple *realisations of subsequent communication* are available. To offer a diverse view on literary themes, and therefore, to contribute to various discussions, *personal*

literary sites and *blogs* are linked. In addition, people can *directly buy* books. If the purchase decision has been influenced by a certain users' comment, she or he will receive *monetary gratification* (Mojoreads).

5 Limitations, Discussion and Future Directions

Before discussing selected issues and possible research directions, we acknowledge the limitations of this study. First, our investigation is limited to the selected German social reading platforms and the general validity of our sample cannot be guaranteed, although the developed taxonomy fulfils the ending conditions. However, as Germany is one of the largest European markets in terms of publishers' turnover [16], it provides a useful starting point for our research. Further, we would argue that our results provide a useful characterisation of platforms and the derived types already indicate major differences, underlining the heterogeneity between social reading platforms. Second, the identification of dimensions and characteristics is based on our own decisions and interpretations. To contribute to the robustness and the reliability, two researchers independently analysed the platforms and subsequently consolidated their results. Third, the number of types of social reading platforms is affected by the interpretation of the dendrogram. Although we followed established approaches (Ward's method, K-Means method), another number of clusters might have influence on the results.

Despite the mentioned limitations, we believe this study to be an important first step in investigating how the digitalisation changes the literary culture. For reasons of space limitations, we discuss selected issues and present possible research directions below.

Derive implications for design features of social reading platforms. Analysing social reading platforms, various characteristics and four types have been identified. Considering further platforms, not only non-German social reading platforms but also platforms of a wider field (e.g., related to scientific literature), may support verifying or extending our results. In addition, the taxonomy provides a foundation for other representations (e.g., derivation of a data model) that might function as a detailed basis for comparison of platforms and further developments (e.g., derivation of new characteristics that could not be found in the investigated platforms). Besides, based on our findings researchers are provided to derive design features for social reading platforms, contributing to the design of review systems [34] in general as well. For instance, various realisations of *assistance for subsequent communication* exist. Sometimes a guideline for writing reviews (structural hints, proposed elements) is separately provided on a platform, whereas also direct instructions while writing a review are provided. Hence, it would be interesting to analyse the influence of such different forms of assistance on reviews. Doing so, the content and structure of reviews should be analysed and compared to the proposed guidelines, leading to enhanced and novel proposals for assistance that might support the manifold, detailed discussion on books. In line, as online reviews influence purchase decisions [35, 36], and economic outcomes, also publishers, authors and book sellers can benefit.

Engage in social reading intelligence. Regarding the selected social reading platforms, almost all of them provided *social media intelligence* (9/10) to derive

actionable information from social reading activities. For instance, similarity functions provide similar users within the community that are sometimes called "book neighbours". Further, the majority of platforms performs *usage analysis* (9/10) in case of market and opinion research and improvement of services. As the digitalisation will lead to novel reading realities and discourses [4], adopted or new tools and algorithms are required to analyse the changed form of socialisation of reading. "Social reading intelligence" presents great potential with important practical relevance. For instance, content that emerges within multiple realisations of subsequent communication could be analysed. Making use of this knowledge, for example, the impact of book clubs on sales—similar to effect of reviews on sales [37]—might be investigated.

6   Conclusion

In order to develop a taxonomy of social reading platforms, we carried out an initial literature review, collected social reading platforms, analysed the findings and built a taxonomy that *structures* various *characteristics that are provided by social reading platforms*. Performing a cluster analysis, we discovered four types of platforms: (I) manifold discussions within a bonded community, (II) assessment of books to support purchase decisions, (III) immediate discussions on books within a closed community, (IV) hybrid discussions on books, related to sales and monetary gratification. Based on the findings, we discussed selected issues and possible future research endeavours.

Overall, our findings contribute to the ongoing research in digital transformation in creative industries. Based on the taxonomy, both research and practice are supported to derive implications for future social reading platforms. Researchers are, for example, supported to position and redesign their platforms or research results, and to identify gaps that need to be addressed by future endeavour. Practitioners (book sellers, publishers), for instance, can be informed within the wide range of social reading platforms, to compare, refine and develop further platforms. In addition, users (e.g., readers, reviewers, authors) are supported to make an informed decision concerning the selection of a social reading platform as they receive an overview of platforms.

7   Acknowledgements

References

1. Kutzner, K., Schoormann, T., Knackstedt, R.: Digital Transformation in Information Systems Research: A Taxonomy-based Approach to Structure the Field. In: Proceedings of the 26th European Conference on Information Systems, Portsmouth (2018)

2. O'Reilly, T.: What is the Web 2.0?, http://www.oreilly.com/pub/a//web2/archive/whatis-web-20.html (2005)
3. Wilms, K.L., Meske, C., Stieglitz, S., Decker, H., Fröhlich, L., Jendrosch, N., Schaulies, S., Vogl, R., Rudolph, D.: Digital Transformation in Higher Education–New Cohorts, New Requirements? In: Proceedings of the 23d Americas Conference on Information Systems, Boston (2017)
4. Cordón-García, J.-A., Alonso-Arévalo, J., Gómez-Díaz, R., Linder, D.: Social Reading Platforms, applications, clouds and tags. Chandos Publishing, Oxford (2013)
5. Börsenverein des Deutschen Buchhandels: Statista-Dossier zum Buchmarkt, https://de.statista.com/themen/1069/buchmarkt/ (2017)
6. LovelyBooks: LovelyBooks Mediadaten 2018, https://s3-eu-west-1.amazonaws.com/media.lovelybooks.de/LovelyBooks_2018.pdf (2018)
7. Boesken, G.: Literarisches Handeln im Internet Schreib- und Leseräume auf Literaturplattformen. UVK, Konstanz (2010)
8. Stein, B.: A Taxonomy of Social Reading: a proposal, http://www.futureofthebook.org/social-reading/matrix/ (2010)
9. Winget, M.: A Mediation on Social Reading and Its Implications for Preservation. Dig Tech Cult. 42(1), 1–14 (2013)
10. Nickerson, R.C., Varshney, U., Muntermann, J.: A method for taxonomy development and its application in information systems. Eur. J. Inf. Syst. 22(3), 336–359 (2013)
11. Kuhn, A.: Lesen in digitalen Netzwerken. In: Rautenberg, U., Schneider U. (eds.) Lesen Ein interdisziplinäres Handbuch. pp. 427–444. De Gruyter, Berlin, Boston (2015)
12. Cavallo, G., Chartier, R.: A History of Reading in the West. University of Massachusetts Press (2003)
13. Manguel, A.: A History of Reading. Penguin Books (1996)
14. Pouliot, C.: Lectura social y medios digitales: la revolución de los receptores en la Era 2.0. Congreso Amigos 2011: El usuario, la información y la biblioteca de los Ángeles, Mexico (2011)
15. vom Brocke, J., Simons, A., Niehaves, B., Reimer, K., Plattfaut, R., Cleven, A.: Reconstructing the giant: on the importance of rigour in documenting literature search process. In: Proceedings of the 17th European Conference on Information Systems, Verona (2009)
16. Federation of European Publishers: European book publishing statistics, https://fep-fee.eu/European-Book-Publishing-922 (2017)
17. Haas, P., Blohm, I., Leimeister, J.M.: An empirical taxonomy of crowdfunding intermediaries. In: Proceedings of the 35th International Conference on Information Systems, Auckland (2014)
18. Remane, G., Nickerson, R., Hanelt, A., Tesch, J.F., Kolbe, L.M.: A taxonomy of carsharing business models. In: Proceedings of the 37th International Conference on Information Systems, Dublin (2016)
19. Szopinski, D., Schoormann, T., John, T., Knackstedt, R., Kundisch, D.: How software can support innovating business models: A taxonomy of functions of business model development tools. In: Proceedings of the 23d Americas Conference on Information Systems, Boston (2017)
20. Katsma, C., Spil, T.: A taxonomy of digital music services. In: Proceedings of the 16th Americas Conference on Information Systems, Lima (2010)
21. Gregor, S.: The Nature of Theory in Information Systems. MIS Q. 30(3), 611–642 (2006)
22. Williams, K., Chatterjee, S., Rossi, M.: Design of emerging digital services: a taxonomy. Eur. J. Inf. Syst. 17(5), 505–517 (2008)

23. Fan, S., Sia, C.L., Zhao, J.L.: Towards Collaboration Virtualization Theory. In: Proceedings of the 16th Pacific Asia Conference on Information Systems, Ho Chi Minh City (2012)

24. Lukoschek, K.: Ich liebe den Austausch mit euch! Austausch über und anhand von Literatur in Social Reading-Communities und auf Bücherblogs. In: Bartl, A., Behmer, M. (eds.) Die Rezension Aktuelle Tendenzen der Literaturkritik. pp. 225–252. Königshausen & Neumann, Würzburg (2017)

25. Ernst, T.: User Generated Content und der Leser-Autor als Prosumer. Potenziale und Probleme der Literaturkritik in Sozialen Medien. In: Kaulen, H., Gansel, C. (eds.) Literaturkritik heute Tendenzen - Traditionen - Vermittlung. V&R unipress, Göttingen (2011)

26. Trilcke, P.: Ideen zu einer Literatursoziologie des Internets. Mit einer Blogotop-Analyse. Textpraxis. 7(2), (2013)

27. Balijepally, V.G., Mangalaraj, G., Iyengar, K.: Are We Wielding this Hammer Correctly? A Reflective Review of the Application of Cluster Analysis in Information Systems Research. J. Assoc. Inf. Syst. 12(5), 375–413 (2011)

28. Elkan, C.: Using the Triangle Inequality to Accelerate k-Means. In: Proceedings of the 20th International Conference on Machine Learning, Washington D.C. (2003)

29. Punj, G., Steward, D.W.: Cluster analysis in marketing research: Review and suggestions for application. J. Mark. Res. 134–148 (1983)

30. Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., Blondel, M., Prettenhofer, P., Weiss, R., Dubourg, V., Vanderplas, J., Passos, A., Cournapeau, D., Brucher, M., Perrot, M., Duchesnay, E.: Scikit-learn: Machine Learning in Python. J. Mach. Learn. Res. 12, 2825–2830 (2011)

31. Ward, J.H.J.: Hierarchical Grouping to Optimize an Objective Function. J. Am. Stat. Assoc. 58(301), 236–244 (1963)

32. Hartigan, J.A., Wong, M.A.: Algorithm AS 136: A K-Means Clustering Algorithm. J. R. Stat. Soc. Ser. C Appl. Stat. 28(1), 101–108 (1979)

33. Zeng, D., Chen, H., Lusch, R., Li, S.: Social Media Analytics and Intelligence. IEEE Intell. Syst. 25(6), 13–16 (2010)

34. Guo, H., Jiang, Y.: Optimal Design of Consumer Review Systems. In: Proceedings of the 33d International Conference on Information Systems, Orlando (2012)

35. Babic Rosario, A., Sotgiu, F., de Valck, Bijmolt, T.H.A.: The Effect of Electronic Word of Mouth on Sales: A Meta-Analytic Review of Platform, Product, and Metric Factors. J. Mark. Res. 53(3), 297–318 (2016)

36. Cheung, C.M.K., Thadani, D.R.: The Impact of Electronic Word-of-Mouth Communication: A Literature Analysis and Integrative Model. Decis. Support Syst. 54(1), 461–470 (2012)

37. Chevalier, J.A., Mayzlin, D.: The Effect of Word of Mouth on Sales: Online Book Reviews. J. Mark. Res. 43(3), 345–354 (2006)