

Everyday information literacy in rural areas

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Abstract

Introduction. Information literate behaviour can be understood as an approach to handle the increasingly digitalised information environment. Rural areas and particularly the local authorities face specific challenges realising the digital transformation of decentralized countries.

Research aim. This research investigates individual information needs and behaviour patterns of residents in a rural district in Germany. The aim is to deliver insights concerning the question as to how information provision (supplier perspective) and information literacy (citizen perspective) can be fostered for rural inhabitants. This holistic perspective allows for context-specific recommendations at the end of the three-year project.

Methods. Data were collected through a user study, expert interviews with information providers as well as an analysis of the websites maintained by the local authorities.

Results. The study shows that for residents evaluating information and information sources are the main issues. The analysis of the municipality's websites indicates difficulties providing target group specific information. The expert interviews reveal a low level of digital maturity on behalf of the local governmental information provision, mainly caused by a lack of resources.

Conclusion. Besides finding approaches to foster individual information literacy in the future, the information quality model developed for the analysis may already be used as a reference to improve the information provision of local governments.

Keywords: everyday information behaviour, information literacy, rural areas

Introduction

Facing a fast-moving information environment, from disinformation to fake news, the access and consumption of valid information seems as crucial as ever. Therefore, individual competencies are inevitable. These include information literacy as a set of competencies needed for one's own autonomous information behaviour. The ongoing digitalisation allows for new approaches to foster information literacy in rural areas as well as to accelerate local transformation.

Addressing the desideratum of studies on societal information behaviour in rural areas, the research presented is part of a three-year research project (04/2020-03/2023), funded by the German Federal Ministry of Food and Agriculture. The project's aim is a holistic view of information behaviour and the information literacy in topic areas that are essential for everyday life. Examples for areas of interest are health, local amenities, adult education, communication with peers, commerce and leisure activities. The project investigates information behaviour and information provision by local governments in the 17 rural municipalities of the Hildesheim district, Lower Saxony, Germany. It will deliver recommendations for the groups involved. First for municipalities on how to improve their information supply. Second for local adult education providers on how to foster information literacy and third for the citizens themselves on how to improve their own capabilities towards becoming more information-literate. In the following, we will present the initial studies within the project.

Related work

Information literacy can be defined as '*a set of competencies that empowers citizens to access, retrieve, understand, evaluate and use, create, as well as share information [...] in a critical, ethical and effective way*' (UNESCO, 2013, p.29). Being intertwined with other literacies as media or digital literacy, information literacy addresses the critical use of information itself rather than the (digital) medium (Griesbaum, et al., 2021). Generally, there are only a few scientific research approaches focussing on general, societal information literacy so far (Linares-Soler, 2019). Prior research on corresponding skills of the German population by the Initiative D21 e.V. (n=1.825) shows the majority of participants being able to search and find information online (87%) and considering more than one information source (74%). The ability to distinguish between serious and dubious news is less common (61%) (Initiative D21 e. V., 2021, 11). Meßmer, et al. (2021) (n=4.194) conclude that distinguishing between disinformation, advertisement and beliefs can sometimes be difficult (Meßmer, et al., 2021). Despite being labelled as an advertisement, only 23% identified advertisement on a newspaper website as such, while 56% thought the article had an informational purpose (ibid.). People tend to have limited attention spans when judging information. While using search engines, users mostly focus on a few, prominently placed results (Schultheiß and Lewandowski, 2021). So how can critical information literacy skills be conveyed? The Initiative D21 e.V. (2021) study advocates to develop deeper knowledge. While basic skills in dealing with digital applications and devices are widespread, there is a lack of understanding their underlying mechanisms and functionalities (Initiative D21 e. V., 2021). With regards to the special characteristics of rural areas, the Initiative D21 e.V. reports that the ongoing digitalisation contributes to a decline of the urban-rural divide (Initiative D21 e. V., 2020). Nevertheless, there still is a continuous mismatch between what citizens expect and desire in terms of digitalised local amenities and the current state of digital interaction (Kuhlmann and Heuberger, 2021).

Research aims

The research aim of the presented studies is twofold, following these research questions:

- Research question 1: Which information needs and information behaviour patterns do citizens in rural areas show?
- Research question 2: How do local governments in rural areas provide everyday life information for their citizens?

By mapping and relating the different perspectives of providers and users, this research contributes to the idea of a demand driven information supply. The information supply should correspond to users' information needs. Ideally an optimal information provision on part of the local governments in rural areas should be realised. Understanding the citizen's information needs, behaviour patterns and hearing their wishes on digitalised local services can help to develop concrete measures needed in realising the digital transformation.

Methods and analysis

To answer the research questions, three studies were carried out:

1. A citizen survey (n=495), which was conducted online, paper-based and by phone. The aim of the survey was to collect data regarding the information behaviour, the information needs as well as the information literacy of the rural citizens. The data were analysed statistically using centroid cluster analysis to identify different degrees of subjective and objective information literacy, as well as technology acceptance. Non-parametric mean comparison of independent samples, combined with correlation analysis and measurement of effect size were used to determine group differences.
2. Expert interviews with local information providers were conducted to gather information on the current approaches, underlying strategies as well as potentials and challenges related to the digital transformation. The data (n=13) were analysed following the qualitative content analysis method by Mayring and Fenzel (2014).
3. Lastly, a scheme following different information quality models (Marwede, 2020) was developed to evaluate the municipal websites (n=19). Five quality criteria were conceptualised: technique, interaction, user-friendliness, content and networking. The results were edited and distributed as reports to the local governments.

The data from the first study were used to answer research question 1: information needs and information behaviour patterns of citizens living in rural areas. The data from the investigations 2 and 3 were used to answer research question 2: dynamics of everyday life information supply by local governments in rural areas.

Results

The results of the user study indicate a technology-savvy and information literate sample. Nevertheless, the evaluation of information and their sources seemed to be the main problem, regardless of residential area (rural: n=3188; urban control group (City of Hildesheim): n=177) or age group (15-29; 30-59; 60+ years). Table 1 shows the user's perception of their own information behaviour. Comparing the categorised steps of the information process, they felt least confident in evaluating information (M=3.860, SD=0.7768). Consequently, the participants asked for official labelling of reliable content, e.g. in the form a credibility scale or a logo.

Table 1: Self-reported Information Literacy

process steps of information search	total sample (n=495)			rural sample (n=318)	
	Cronbach Alpha	M*	SD	M*	SD
need articulation	0.777	4.241	0.5771	4.265	0.5856
source selection	0.781	4.099	0.6859	4.114	0.6914
information evaluation	0.771	3.848	0.7568	3.860	0.7768
personal reflection	0.759	4.048	0.6417	4.024	0.6638

*. scale1-5: 1 (does not apply), 5 (does fully apply)

To map self-reported and objective information literacy, exemplary skills were tested, following information literacy assessment approaches of related research (references in table 2). Table 2 reveals the lowest level of objective competency in the criteria of information and source evaluation, confirming the participants perceptions.

Table 2: Objective Information Literacy

<i>test criteria*</i>	<i>item**</i>	information literate response (%)	
		<i>rural sample</i> (<i>n=318</i>)	<i>urban sample</i> (<i>n=177</i>)
strategic search	source selection	94.7	81.4
informational appreciation	copyright infringement	87.7	84.2
data security	password structure	83.3	87.0
information-, source evaluation	website reliability	65.4	59.3

*. based on the framework for information literacy (ACRL, 2016)
 **. cf. Boh Podgornik, et al., 2016; Chu, 2012; Eriksson-Backa, et al., 2012; Häußler, 2017; Head and Eisenberg, 2011; Hirvonen, 2015; Juznic, et al., 2006; Kent State University Libraries, 2019; Kurbanoglu, et al., 2006; Leichner, 2015; Marcella and Baxter, 1999; Niemelä, et al., 2012; Schüller-Zwierlein, 2017; UNESCO, 2013

The statistical comparison of the rural and urban sample, using the Mann-Whitney-U test, concluded no significant differences regarding the subjective information literacy ($p=0,583$ ($p>0,05$), significance level of 5% (2-sided)). In contrast, objective literacy measures a statistical difference, with a very low effect size ($z=2.080$ $p=0.038$, significance level of 5% (2-sided), $r=0.09$). This suggests just a small effect of the geographical living situation on the objective information literacy, but none on the subjective counterpart.

Additionally, the result showed that participants do not transfer offline search behavioural patterns to their online search, as presented in figure 1. When searching offline, they choose their information sources (based on Head and Eisenberg, 2011; Marcella & Baxter, 1999) according to the areas of information needs. During offline search, participants turn to experts, when their needs have potentially harmful consequences (e.g. health), but choose to contact friends and family for information based on experiences (e.g. leisure activities). In contrast, while searching for information online, participants use search engines as the main source in every of the 9 given topics as shown in figure one (based on Agosto and Hughes-Hassell, 2006b; Beer et al., 1998; Head and Eisenberg, 2009; Islam & Ahmed, 2012; Martzoukou and Sayyad Abdi, 2017; White, 2016). Whether they use search engines as a primary source or simply as a step to another potentially more reliable resource, will be investigated in the second study.

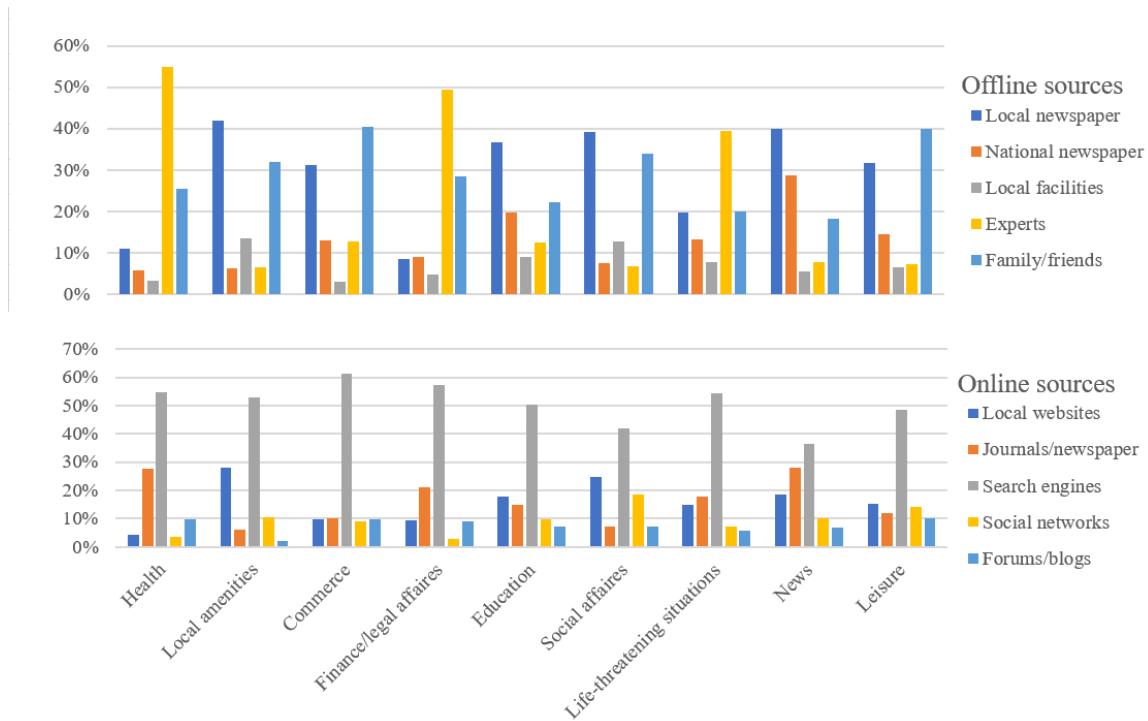


Figure 1: Comparison offline and online information sources (n=318)

The analysis of the information dissemination by local municipalities shows an irregular distribution of responsibility. Every municipality involved seems to have their own approaches on how to provide information for their inhabitants. Some diverging factors are the communication channels used (e.g. websites, local magazines, Instagram), the person in charge (e.g. one central public relations figure, department representative, anyone available), the frequency (e.g. permanent sharing of communal life, focus on official announcements) as well as the intention (e.g. information delivery, quality assurance, civic participation). These different approaches can be explained by the absence of overarching, systematic guidelines as well as limited capacities (mostly time and money). While many local actors are aware of the relevance and potential benefits of mapping the local information supply to the users' needs, only a few are motivated and capable of finding new ways of information supply.

The analysis of the municipality websites showed notable qualitative differences, reaching 35 points at the highest and 15 points at the lowest (scale: 1-44). The differences arose mostly in the technical, content and social networking quality criteria. The results show hardly any recognizable patterns as to why certain communication channels are used and others are not. The decision on which channels to use seem to be arbitrary. A possible solution would be the increasing use of social media platforms.

If the results from studies 1 to 3 are consolidated, there seems to be a gap between the information provided by local governments and the information needs and information consumption of citizens. Approaches in finding a solution to map the supply to the demand will also be part of the second study phase.

Recommendations

The research has shown that information providers and users face unique challenges and require individual approaches for improvement. To advance the local information supply, it is inevitable to foster information literacy on an individual level. The annual report on the digital society in Germany (Initiative D21 e. V., 2021) identifies comprehension skills as the most urgent competencies to support, since there is a lack of understanding of the underlying mechanisms of digital applications and services (Initiative D21 e. V., 2021). It is important to find appropriate means of educating the citizens. This could be achieved through the inclusion of information literacy training in existing curricula of (adult) education or the provision of low-threshold schemes (for example open

educational resources) that teach users how to critically engage with information and their sources to support individual information discernment. For the improvement of local information supply, it is necessary to rethink target group specific information distribution by using the potentials of digitalisation for enhanced information distribution and multi-directional communication, e.g. the use of social media. Considering the “*online access act*” (German: Online-Zugangsgesetz (OZG)), which obliges the German (local) governments to offer their administrative services in digital form by the end of 2022, municipalities need to realise the urge for digital transformation.

Conclusion

While the information behaviour patterns of rural citizens do not differ as much from their urban counterparts as expected, the study has shown that infrastructural differences make rural areas highly relevant for future research. The results have also shown how information paths for offline and online search differ. The latter is characterised by a strong use of search engines whereas the information sources in the first vary. The insecurity of the users with regard to information and source evaluation emphasises the need to promote general information literacy to enable an autonomous and informationally secured lifelong learning process.

The next step in the research project is to conduct interviews and focus groups to gain deeper insights on users’ needs and expectations with regard to information literacy education. When we think about the possible damage of disinformation, the areas that have a high potential of harmful consequences, need to be focused in future work.

Endnotes

Access to information on the research project, including methods and results is provided on the project website: <https://www.uni-hildesheim.de/fb3/institute/iwist/forschung/forschungsprojekte/aktuelle-forschungsprojekte/daseinsbezogene-informationskompetenz-in-laendlichen-raeumen-dilra/>

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