Thanks for Your Help! – The Value of Q&A Websites for Refugee Integration

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Abstract

The huge number of people fleeing their home countries poses a challenge to refugees and host societies. Q&A websites are highly promising in supporting refugee integration, one long-term solution to displacement. In our study, we aim to identify how refugee Q&A websites are used and, as a result, what value they provide to their users with respect to refugee integration. Based on data of the successful Q&A website 'Wefugees', we apply a mixed-methods approach consisting of descriptive statistics, social network analysis, and content analysis. Our results indicate that Q&A websites serve for the provision of information on a broad range of integrational topics and, surprisingly, constitute a one-way support service instead of leading to community building. We are the first to examine Q&A websites in this context and expand literature studying the role of digital services for refugee integration. Our results further provide design implications for refugee Q&A websites.

1. Introduction

Conflicts in many areas of the world have led to rising numbers of refugees. In 2019, the United Nations High Commissioner for Refugees recorded over 20 million refugees [1]. Integration, meaning the legal, economic, social, and cultural inclusion in host societies, is one prominent long-term solution for refugees as it protects refugees and enables them to live in a safe place [2]. Host societies are in charge of developing solutions to facilitate the integration process [3]. For this, digital services can provide promising support. They offer advantages such as comfort, availability all around the clock, and accessibility from every place [4-5]. Indeed, Information and Communication Technology (ICT) supports refugees along their way of fleeing and resettling [6-7]. It has been shown to positively affect different aspects of refugee integration such as social connectedness [8], access to higher education [9], and economic as well as

cultural participation [10]. Particularly, digital services aiming at the provision and exchange of information play an important role for refugees and host societies as "social inclusion for refugees is often conceptualised as an information problem" [8, p. 407]. Due to the complexity of refugee integration, refugees are confronted with ever new questions. While some of them might account for individual circumstances, others might be relevant for a greater number of refugees. The longer refugees stay in the host country, the more they become experts for answering such questions. Question and Answer (Q&A) websites seem to perfectly account for this and provide features which make them well suitable for the application in the context of refugee integration. As a result, they seem to be highly valuable to support refugee integration. Consequently, there is a need for researchers to analyse their actual value. However, to the best of our knowledge, Q&A websites have not been studied in this context so far. In our study, we aim to identify how Q&A websites targeted at refugees are used and, as a result, what value they provide to their users in terms of refugee integration.

One example of a Q&A website in the refugee context is 'Wefugees'. While many digital refugee services have been put out of service [11], 'Wefugees' has even recorded rising numbers of registrations as well as rising activity. Due to its success, the service could serve as a model for other digital services in this context. Furthermore, prior research has also suggested to analyse 'Wefugees' (e.g., [12]).

Based on data from 'Wefugees', we apply a data-driven, mixed-methods approach to examine users' behaviour and interactions as well as contents discussed on this Q&A website for refugees. The well-established integration framework by Ager and Strang [13] serves as a base for our systematic research. Our contribution to research and practice is threefold: First, we are the first to analyse Q&A websites in the refugee context. This extends prior research studying the role of digital services for refugee integration by insights on the value of a highly promising type of digital refugee services. More precisely, we provide a thorough, systematic, and multi-faceted analysis on the value of Q&A websites for refugee integration. Second, we demonstrate the

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applicability of the integration framework by Ager and Strang [13] on text data of Q&A websites, confirm the components of the framework as key issues of integration from a refugee perspective, and propose stimulating adaptations of the framework's structure. Finally, our results allow for managerial and policy implications on the design of Q&A websites in the refugee context. This paper is structured as follows: In Section 2, we introduce the theoretical foundation of our study and review related literature. In Section 3, we describe the subject, data, and methodological approach, before we present the results of our analyses in Section 4. In Section 5, we discuss implications and limitations of our work and provide directions for further research. Finally, we conclude with a brief summary in Section 6.

2. Theoretical background

In this chapter, we first introduce the theoretical foundation of our study, the well-established integration framework by Ager and Strang [13]. Second, we give an overview on the role of ICT in the context of refugee integration and deduce why, from a theoretical point of view, Q&A websites seem to be especially beneficial in this context. Finally, we present the research goal and the contribution of our study.

2.1. Refugee integration

Answering the high rate of international migration, the United Nations agreed to engage in the integration of refugees which they consider to "reduce the risks of marginalization and radicalisation" [14, p. 8]. Research today mostly agrees on integration being a multi-faceted and reciprocal process [15] with the goal of becoming an equal part of the host society [2]. The well-established framework by Ager and Strang [13] decomposes the term into ten interrelated 'Core

Domains of Integration' which are grouped into four overall themes. The framework considers views by several groups of stakeholders, links theoretical concepts and practical implementation [16], and can serve as a common normative definition of the term refugee integration for practitioners, politicians, academics, and refugees [13]. Its comprehensiveness, the fact that it decomposes the issue of integration into convenient pieces, and its wide acceptance in research and practice make the framework a profound base for this study. It further allows us to extend the relatively small amount of systematic research on the role of ICT in the refugee context (cf. [17]).

Table 1 gives an overview on the components of the framework by Ager and Strang [13]. The four overall themes follow a hierarchical structure. The understanding of nationhood and the associated rights and duties constitute the 'Foundation' of the framework. On the next level, 'Facilitators' summarise domains where actions could hamper or facilitate integration. 'Social Connections' outline the different types of social relationships. Finally, 'Markers and Means' summarise key outcomes and drivers of successful integration.

2.2. Demand and supply of digital refugee services

ICT is considered highly promising in supporting refugee integration [8, 18] which is reflected both in the usage of digital services among refugees and in the supply of digital services for refugees. One reason for this is the prevalence of the necessary devices. According to Vernon et al. [19], 100% of refugees living in urban areas are covered by mobile Internet and 68% of refugee households own an Internet-capable phone whereby access to smartphones is at close to 100% in developed countries [20-21]. Digital services accompany refugees along the whole process they potentially go through.

Table 1. Overview on the integration framework by Ager and Strang [13]

	Domain	Characterisation
Markers and Means	Employment	Employment according to one's skills
	Housing	Living under appropriate housing conditions
	Education	Good educational skills and qualifications as well as access to education
	Health	Good physical and psychological health as well as access to health services
Social Connections	Social Links	Links to the government and the public services of the host country
	Social Bridges	Connections to the people of the host community
	Social Bonds	Connections to people of the same ethnicity
Facilitators	Language and Cultural Knowledge	Mutual knowledge of refugees' and host people's culture; language skills on behalf of refugees, removal of language barriers through the host society
	Safety and Stability	Feeling of physical and emotional safety and stability
Foundation	Rights and Citizenship	Understanding of citizenship and the associated rights and duties

Before and during the journey, social media are, for example, used for acquiring information for migration decisions [6], whereas after arriving in the host country, social media can serve for integration purposes [7]. The most prevalent use of digital services is communication via Facebook or WhatsApp, followed by entertainment purposes and information seeking [19].

From a supply perspective, the number of digital services for refugees increased tremendously in response to the refugee influx to Europe since 2015 [11]. This phenomenon is also reflected in literature. Many studies focus on the derivation and introduction of new digital service designs or digital projects for refugees such as 'Empathy up' [22] or 'Integreat' [23]. In reaction to this large supply of services, other studies give overviews on existing digital services and identify gaps in the service landscape (e.g., [18]) or carve out refugees' challenges and barriers with respect to digital support services or success factors of such services (e.g., [15, 24, 25]). Indeed, figuring out what makes services successful is crucial to the development and improvement of services. The fact that the vast amount of services generated in 2015 and 2016 differ greatly in terms of their success [11] provides researchers with the opportunity to examine services which have proved successful in practice. In our study, we seize this opportunity and assess one of those outstanding services with respect to its value for users.

2.3. The value of ICT and digital information services for refugee integration

There are many studies which show the potential of ICT to positively affect integration of refugees. Studies revealed for example that providing refugees with ICT, such as mobile phones or smartphones and a corresponding data plan, leads to positive effects on social connectedness (e.g., [8, 26]), access to higher education [9], and economic as well as cultural participation [10]. Siddiquee and Kagan [26], for instance, show that participation in a Community Internet Project can help female refugees to build and maintain social links and help them to become integrated. One crucial aspect of integration for which ICT is regarded particularly promising is the provision and exchange of information [8, 24]. People arriving in a new country require information touching on the different domains of integration (cf. [13]), such as health issues, culture or contact to the host community (cf. [24] for an overview). Digital services are often used to satisfy this need with information seeking being the third most frequent purpose of digital service usage by refugees [19]. Services enabling the provision and exchange of information for refugees are, for example, social networks such as Facebook (cf. [7]), information

platforms such as 'Integreat' (cf. [23]), or Q&A websites like 'Wefugees' (cf. [27]). Compared to these other information services, Q&A websites are both interactive and well-structured. Further, they provide promising features for the application in the context of refugee integration.

2.4. Q&A websites for refugee integration

Q&A websites consist of question and answer posts by users which are public and usually grouped into categories [28]. There are several kinds of Q&A websites. In 'ask an expert services' answers are provided by specific experts, while in 'community Q&A sites' community members mutually help each other [29]. 'Community Q&A sites' further allow their users to engage in discussions, use tags, vote on posts [29], and provide a variety of special features, such as gamification elements to increase user engagement and experience [30]. This way, they account for the fact that refugees themselves become experts of refugee integration and thus qualify to help one another. However, all types of Q&A websites share some features which are valuable in the context of refugee integration. First, they provide answers by humans via a digital medium [31-32]. This goes along with advantages of Internet-mediated communication, such as accessibility independent of time and place [4], more time to answer questions [5], and the possibility to stay anonymous, which can make it easier for users to exchange sensitive contents [4]. For refugees who have fled their country anonymity might be especially beneficial. Further, public accessibility of questions and answers is also beneficial for refugees who only passively use those sites as some questions might be relevant to larger parts of the refugee community. Moreover, the interactivity of Q&A websites allows users to comment on answers in case of understanding problems in the foreign language. Finally, Q&A websites allow users to post their questions in natural language, i.e. in full sentences instead of using key search terms only, and to receive personalised answers [31], which is a sensible feature considering the large variety of refugees' backgrounds and circumstances as well as the complexity of issues they deal with. Additionally, literature also expects Q&A websites to potentially connect refugees with one another [12]. It can thus be stated that, from a theoretical point of view, Q&A websites constitute a promising means for refugee integration and are worth being studied in more detail. However, to the best of our knowledge, there is a lack of such studies.

In our study, we fill this gap. It is our goal to identify how refugee Q&A websites are used and, consequently, what value they actually provide to their

users with respect to refugee integration. To this end, we perform a data-driven, mixed-methods analysis on usage behaviour, user interactions, and user-generated contents on the successful Q&A website 'Wefugees'. Our contribution to theory and practice is threefold. First, we extend literature studying the role of digital services for refugee integration by insights on the value of a highly promising and thus relevant digital service for refugee integration: Q&A websites. Second, we demonstrate the applicability of the integration framework by Ager and Strang [13] to Q&A website data, confirm the validity of its components, and suggest adaptations to its structure. Third, the results of this study offer managerial and policy implications with respect to the design of Q&A websites in the refugee context.

3. Methodology

In the following, we present the subject, data, and methodology of our data-driven case study.

3.1. Case setting

'Wefugees' (www.wefugees.de), an award-winning Q&A website for refugee topics [33-34], is denoted the largest Q&A website for refugees in the world [33] and serves us as a large and sound (data) base for our study. It was founded in 2015 to provide help for refugees, volunteers, and experts [27]. The website is a mixture between an 'ask an expert service' and a 'community Q&A site' (cf. [29]). All content is publicly visible. Signed-in users can ask and answer questions, post comments to questions and answers as well as use special features of the website, such as voting or marking the best answer to one's own question. The website differentiates between registered users, moderators, (super-)administrators, and experts. Experts belong to partner institutions such as Kiron and are equipped with expertise from topics such as employment or education [27]. Moderators and (super-)administrators of the website manage and moderate the website and post answers. In the following, we summarise those users and experts under the term 'special users'. Even though mainly addressing refugees in Germany, the website is designed in English and users can ask in English, German, Arabic, and Farsi. 'Wefugees' further uses gamification features with user profiles tracking people's activity, points, and ranking.

3.2. Dataset

We collected publicly accessible data from the 'Wefugees' website on January 29th, 2019 and created databases with information on questions, answers, and users. The final dataset consists of 1,962 questions between August 24th, 2015 and January 28th, 2019. Most questions (87%) were asked in English, followed by questions in German (11.9%), Arabic (0.8%), and Farsi (0.3%). The dataset further includes 1,270 users who have interacted with the platform in an observable way, i.e. posted a question, answer or comment or voted on an answer. Among these, there are four (super-) administrators, two moderators, and 13 experts, all of which possess special rights such as being able to edit posts. These four special user groups amount to 1.5% of the interacting user base with the rest being generic registered users.

3.3. Data analysis

In order to provide a thorough and multi-faceted picture of how users make use of 'Wefugees', and thus of what value the site actually provides to its users with respect to refugee integration, we apply a mixed-methods approach similar to Jeng et al. [35]. More precisely, we first conduct descriptive and social network analyses on the question, answer, and user datasets of 'Wefugees' to examine how refugee Q&A websites are used and how their users interact. Then, we apply descriptive and content analyses on the question dataset to study which of the domains of integration are addressed by users of the website. Lastly, we analyse how those results changed over time to work out the robustness and future potential of refugee Q&A websites.

As a base for our social network analyses, we modelled the website in the following way: Each user is represented by a node with a directed edge from user A to user B if A answers one of B's questions. Edges are weighted according to the number of answers. To characterise the questioning and answering behaviour of users, we use social network measures based on the node in- and out-degree, i.e. the number of in- and outgoing edges of a node (cf. [36]). In our model, the out-degree of a node represents the number of answers the according user gave, whereas the in-degree represents the number of answers the user provoked through his or her questions. Further, we use two social network measures to identify the interconnectivity among all users: First, the network density is defined as the portion of node combinations which are actually linked (cf. [36]). Second, the average clustering coefficient measures the average interconnectivity of the neighbours of a node [37].

In order to identify systematically for which aspects of integration users take the opportunity to ask questions on 'Wefugees', we conducted a content analysis on the base of the integration framework by Ager and Strang

[13]. More precisely, we used a deductive content analysis with the well-established integration framework by Ager and Strang [13] as classification scheme [38]. This further allows for comparisons to related literature. As the categories are not mutually exclusive [13], each question could be assigned to multiple categories. Labelling was conducted by two researchers independently from each other. As a first step, the precise application was discussed in an iterative cycle of (I) classification of around 400 messages independently by both raters, (II) comparison of the results, and (III) adaption of the implementation of the framework. In the final cycle, the raters reached an interrater reliability of $\kappa_0 = 0.72$ on 346 rated questions according to Kraemer [39], showing "substantial agreement" [40, p.165]. For deviating ratings, the raters reached consent through discussion. During this cycle, the original framework was adapted in that the domain 'Language & Cultural Knowledge' was split into 'Language' and 'Cultural Knowledge' as the two aspects showed a small overlap in questions. Further, considering the two aspects separately allowed us to provide more differentiated insights. Moreover, for the purpose of this analysis, one additional class ('Other') was introduced for questions not referring to any domain of integration.

4. Results

In the following, we present the results of our mixed-methods approach on user behaviour and interactions on the website, topics of integration discussed, and developments of these aspects over time.

4.1. User behaviour and interactions

Basic descriptive statistics on the studied Q&A website show that it provides reliable support to the users. The answer rate at 'Wefugees' exceeds 90% whereby questions receive on average 1.3 answers. Half of the questions are answered within 19 hours and 82% of all given answers are submitted in the first week. Further, only few users make use of special features embedded into the gamification concept of the site. 23.86% of the users give upvotes, merely 2.76% give downvotes, and 9.69% choose a best answer on at least one of their questions.

Figure 1 shows a representation of users' interaction as a social network as described in Section 3.3. For reasons of clarity in visualisation, loops (i.e. answers to one's own questions), users without any connection (i.e. people posting unanswered questions or no questions and answers at all), and users not linked to the main component have been excluded from the

illustration. Node sizes relate to the corresponding out-degree, i.e. the number of answers a user gives.

Concerning the answering behaviour of users on the Q&A website, our results are twofold. First, Figure 1 illustrates that the out-degree network is scale-free with the out-degree distribution following a power law (cf. [41]). This means that most users give few or no answers, whereas few users provide a large amount of answers. Four hubs indicate the most outstanding users in this respect: Two moderators, one administrator, and one registered user are responsible for 49.14% of all answers. Consequently, almost half of the answers (46.16%) are given by 'special users' (i.e. moderators, administrators or experts). Second, the graph illustrates that registered users can be divided into two groups according to their level of contribution: power users and regular registered users. We define power users as registered users who contribute more than 15 answers as those 14 users are responsible for half of the total number of answers posted by registered users. Power users give on average 50.93 answers ($SD = 73.42$), whereas regular registered users, representing 97.4% of all users, give less than one answer on average ($mean = 0.54$, $SD = 1.51$).
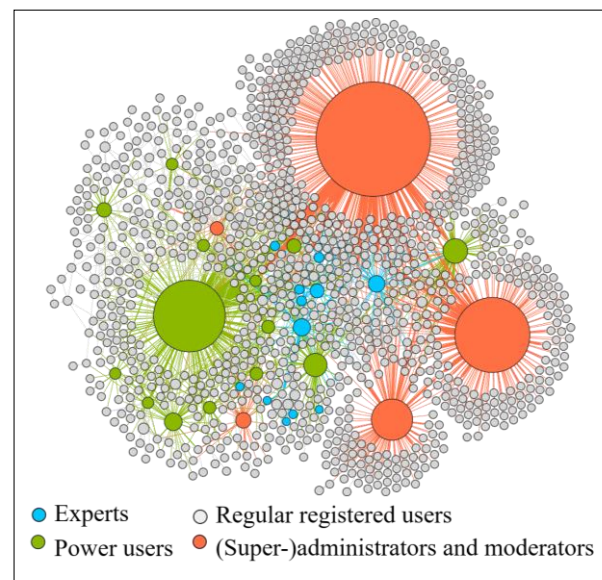

Figure 1. Social network of contributors, created in Gephi [42]. Node sizes relative to out-degrees

Concerning the asking behaviour of users, our results show that regular registered users play a predominant role. Both the number of questions asked per user and the users' in-degrees follow a power-law distribution, even though less pronounced than for the answers. Five of the six most central users according to the in-degree centrality are regular registered users.

84.16% (59.42%) of regular registered users post at least (exactly) one question (*mean* = 1.52, *SD* = 2.38) and together, they are responsible for 95.77% of all questions. While few power users are also actively asking questions, on average they post more than twenty times as many answers as questions.

Regarding the network as a whole, we find that the interconnectivity among users is very low. Only 0.1% of all possible user pairs in the network communicate with one another through questions and answers (*network density:* 0.001) and for an arbitrary user U in the network, question-answer-based interactions among the people with whom U communicates are very rare (*average clustering coefficient:* 0.06). This result might be attributable to two further observations: First, most registered users post questions but no answers (71.38%), whereas few registered users both ask and answer questions (12.47%) or only answer questions (11.99%). Second, regular registered users contribute only within a short time span after their registration on the website. Half of their questions are posted on the day of registration and 80% of their questions and answers are made within 2.5 months.

4.2. Contents of the website

Content analysis of the questions shows that they fit well into the applied scheme (cf. Section 3.3) and thus into the integration framework by Ager and Strang [13]: 94.32% of the questions are classified into at least one class different from 'Other'. Figure 2 shows the distribution of the questions over all classes. Since questions could be assigned to more than one class (if not to 'Other'), proportions do not add up to 1.
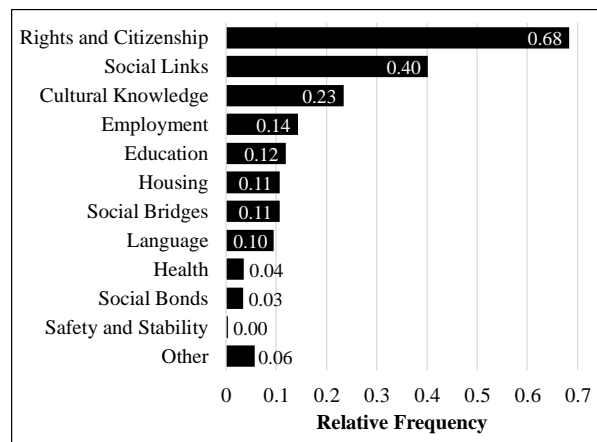

Figure 2. Relative frequency of classes among questions asked on 'Wefugees'

More than two thirds of all questions have some bearing about the foundation of the integration framework, i.e. citizenship, legal rights or legal duties.

Sometimes even legal misbehaviour and potential consequences are addressed. 40% of the questions issue social links, i.e. some relation to the state of the host country, such as governing authorities. Among others, questioners use the website to make sure they are treated correctly by institutions. Almost every fourth question relates to knowledge of the culture in the host country or to some local practical information, one of the facilitators of integration [13]. Of all 'Markers and Means', 'Health' is by far the least frequently addressed domain. 'Safety & Stability' is the only main class which is almost non-existent in the data with less than ten questions relating to it. In general, a deeper look into the question texts shows that many questions address similar problems with different, individual circumstances.

Among the questions addressing at least one core domain of the framework, more than 75% refer to more than one class. Among the latter ones, the most frequent combinations contain either the foundation of integration, 'Rights & Citizenship' (66.57%), the facilitating integration class 'Cultural Knowledge' (22.81%) or, comparably rarely, both of them (5.56%). While most classes show a big variety in co-occurrences, 'Social Links' almost always occurs jointly with 'Rights & Citizenship'.

4.3. Development of behaviour, interaction, and contents

Regarding the development of user interactions on 'Wefugees' over time, we detected changes starting roughly in the middle of the observation period. In March 2017, i.e. one and a half years after the implementation of 'Wefugees', administrators and moderators became more and more active in answering questions and quickly replaced power users as main answerers.
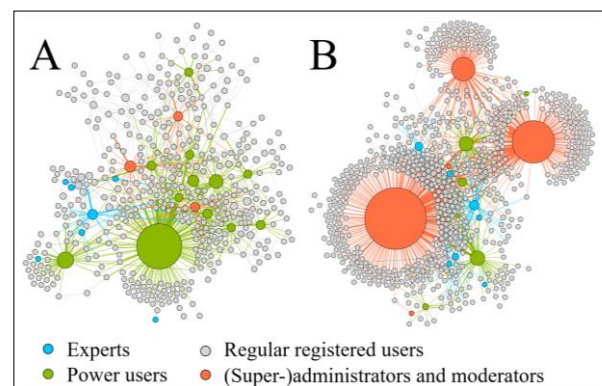

Figure 3. Out-degree networks on data before (A) and after (B) March 2017, created in Gephi [42]

Figure 3 illustrates this change by dividing the out-degree network (cf. Figure 1) into one network based on data before March 2017 (Graph A) and one based on data afterwards (Graph B). The power user hub dominates Graph A. The moderately active answerers in this network represent power users and special users. Graph B shows the complete opposite: it is dominated by three special user hubs. Merely two power users are still recognizable as medium sized nodes. The experts play a minor role in both graphs and would be indistinguishable from regular registered users if they were not highlighted by colour.

Another major change at that time concerns the content of the questions. As Figure 4 illustrates, the categories 'Cultural Knowledge', 'Language', and 'Housing' were gradually replaced by questions related to citizenship and law. As the majority of questions were asked in the second half of the observation period, the latter focus also dominates the overall perspective (cf. Section 4.2). Apart from being among the few digital services for refugees which still exist today [11], 'Wefugees' has shown rising activity in the last year of observation after a period of lower activity in 2016 and 2017. This concerns median monthly values for registrations (risen from 20 in 2016/17 to 51 since July 2018), questions (risen from 29 to 109), and answers (risen from 44.5 to 111). All in all, we observe user-driven changes of the usage of the website which do not harm the attractiveness of the website.
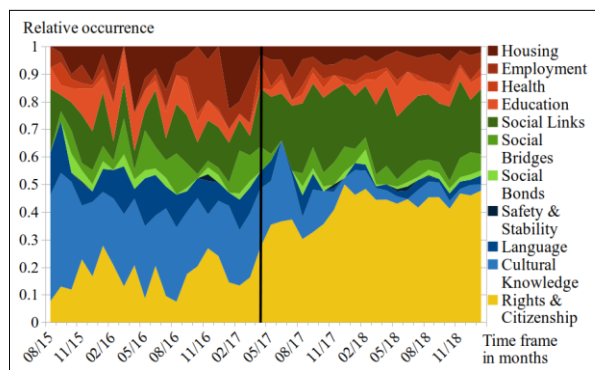

Figure 4. Class distribution of questions over time. The black line marks March 2017

5. Discussion, limitations, and future research

5.1. Discussion and implications for theory and practice

In our study, we analysed data from the Q&A website 'Wefugees' by means of a mixed-methods approach to study the usage of this service which now allows us to derive its value for refugee integration. Our findings contribute to literature studying the role of digital services for refugee integration as well as to literature modelling refugee integration. Our results further allow for practical implications on the design and service landscape of digital refugee services.

First, our study provides strong evidence that Q&A websites for refugee integration primarily serve as a one-way support channel where help-seekers can reliably get answers to their questions. Few users, namely administrators, moderators, and power users, are very involved in answering questions. In contrast, most of the users register on the site to ask a few questions and then cease to participate actively. Thus, there is commonly no long-term engagement with the site and very sparse interaction with other users. This observation is consistent with the fact that only a small portion of registered users engage in asking as well as answering questions and another small portion exclusively answer questions. The vast majority confine themselves to asking questions. Compared to 'community Q&A sites' in other contexts, such as Stack Overflow [43] or Yahoo! Answers [44], this distribution is very unbalanced. As a result, the interconnectivity of the interaction network is low which is highlighted by the small average clustering coefficient and the low network density. Therefore, we conclude that the Q&A website in this study, which has originally been designed as a mixture of an 'ask an expert service' and a 'community Q&A site' (cf. [29]), is mainly used as an 'ask an expert service'. This contrasts with the expectation by Finsterwalder [12] of community building on such sites.

Second, our findings indicate that Q&A websites for refugees serve for the acquisition of information on almost every domain of the well-established integration framework by Ager and Strang [13]. This makes them highly valuable for refugee integration and confirms our theoretical expectations. Furthermore, we find that the studied Q&A website is strongly used as a contact point to ask questions on legal issues. This way, it complements prevalent social media services such as social networks and messaging services which are primarily used to form and keep social connections and to learn the local culture and language [7]. The

predominance of legal questions further underlines the high need of support on legal issues. This suggests that Q&A websites, which feature a high level of security through anonymity [4] as well as a high degree of customisability [31], claim an important position in the current service landscape for refugees in Germany. These insights might therefore also be used as a starting point for challenging existing services.

Third, our study highlights that Q&A websites allow for user-driven changes of their value. Q&A websites provide a high degree of freedom in how they can be used which allow them to adapt to changes in user requirements. Indeed, the user behaviour and the discussed topics on the studied website changed over time. The reason for this might lie in the developments in Germany at this time where the number of asylum applications reached a peak in 2016. As a result, many asylum applications were processed in 2017. At the same time, the number of pending court cases on asylum decisions strongly increased and stayed on a high level in 2018. [45] Presumably, this increased refugees' need for information on legal issues. Despite the changes in the focus of the contents discussed on the studied Q&A website, both the number of registrations and activity still increased. This adaptability makes Q&A websites highly valuable for the dynamic context of refugee integration [13]. At the same time, user behaviour on Q&A websites could also be used as an indicator of user needs and potential gaps in the information service landscape.

We therefore conclude that refugee Q&A websites are valuable in terms of refugee integration. Their key value lies in the reliable provision of individual information on integrational topics without further obligations to involve in networking activities and in the adaptability of the value of the website according to refugees' needs.

Fourth, the Ager and Strang [13] integration framework proved well suitable as classification scheme. Our results confirm that the domains of integration depicted in the framework capture topics of main concern for refugees. This is demonstrated by the fact that almost all questions could be linked to domains of the integration framework and, conversely, almost all domains of integration were addressed in questions. However, for applications where the focus lies on the refugees' perspective, we suggest two adaptations to the framework's structure. We propose to split the original domain 'Language and Cultural Knowledge' into two separate domains as our results suggest that refugees clearly distinguish between them. Furthermore, in contrast to 'Language', 'Cultural Knowledge' played in general a fundamental role on the studied website since many questions attributed to more than one domain had some bearing about 'Cultural Knowledge'. Thus,

'Cultural Knowledge' seems to play a similar role like 'Rights & Citizenship'. Therefore, as a second adaptation, it could be regarded as another basic domain in the framework.

Finally, the following design and managerial implications can be drawn. First, we suggest Q&A websites' hosts to continuously and systematically analyse the content posted on their websites and to optimise them according to their key value. In the case of 'Wefugees', the design should generally account for the fact that users very frequently ask questions on legal issues. We therefore recommend fostering the inclusion and participation of experts and develop the features of the site accordingly. An innovative approach might be, for example, to automatically inform people having already answered questions on new, similar questions. This would create synergies and thus lower answer barriers. Yet, simultaneously, hosts should be aware that content focus can change over time, as shown in our analysis. Second, we conclude from our findings that Q&A websites can be regarded as complementary services to information platforms which extend the scope of the provided information to complex topics and unique circumstances. As a next step, refugee Q&A websites could be integrated into information platforms this way realizing claims for a higher consolidation of services in this context (e.g., [46]).

5.2. Limitations and future research

While our research provides stimulating insights, several limitations can serve as promising starting points for future research. First, despite the strengths of the studied Q&A website for analysing purposes, our results might not be fully generalisable as we studied only one refugee Q&A website. Future research might aggregate data from sites in different geographical and political settings to gain more general insights. Second, even though the data base of this study allowed us to reveal a strong power of refugee Q&A websites, it is restricted to information created by registered users available on the website. To expand our findings, future research might collect further data such as data on non-registered users or survey data on users' integration outcomes. Third, some results of our study raise questions that could be addressed in future research. Future studies might identify possible reasons for the little role experts from cooperation partners play which conflicts with calls for consolidation of refugee support projects (e.g., [46]). Furthermore, future analyses could assess causal dependencies between the changes in user interactions and contents that occurred in 2017.

6. Conclusion

The large refugee influx in the recent years has placed a large responsibility on host societies [1]. Digital services are a very promising answer to this challenge. Research has shown a high potential of ICT to positively affect refugee integration (e.g., [9]). Particularly Q&A websites seem to be a highly promising service in the context of refugee integration. They account for the complexity of refugee integration and the wide range of individual circumstances in providing individual answers and further allow refugees to pass their experiences and knowledge on to other refugees. They are further expected to enhance community building (cf. [12]). Despite this high potential for supporting refugee integration, Q&A websites targeted at refugees have not been studied yet. It was our aim to fill this gap.

Based on data from the successful refugee Q&A website 'Wefugees', we used a data-driven mixed-methods approach consisting of descriptive statistics, social network analysis, and content analysis. This allowed us to derive insights on the value of refugee Q&A websites for refugee integration.

Against expectations in literature (e.g., [12]), our results suggest that refugee Q&A websites mainly provide a one-way support channel to users instead of fostering community building. In our studied Q&A website, a small number of users who answer many questions is faced with a large amount of help-seeking people asking questions. This rather suits the character of 'ask an expert services' instead of 'community Q&A sites' (cf. [29]). Furthermore, our results demonstrate that refugee Q&A websites can provide information on a broad range of integrational topics which makes them highly valuable as information plays a vital role for refugee integration [8]. The studied website is strongly used as a contact point to ask questions on legal issues. Finally, our analyses on the development of the studied website show that refugee Q&A websites allow for user-driven changes in usage and consequently also in the benefits they provide to users. All in all, our study provides strong evidence of the high and sustainable value of Q&A websites in terms of refugee integration with their key value referring to the provision of information. Based on our findings, we recommend adapting the design of Q&A websites to their main usage and thus also key value and echo the calls for further consolidation of refugee projects (e.g., [46]). Finally, we confirm the validity of the components of the integration framework by Ager and Strang [13] and suggest stimulating adaptations to its structure.

Summing up, we believe that our study is a first but important step in terms of studying the use and value of Q&A websites for refugee integration. We hope that our results will encourage further research on this relevant and fascinating topic.

7. References

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