# "Shared Online, Made People Envious, Felt Good":
## Motivations to Share Non-Media Types of Content Online

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## ABSTRACT

An online survey of 200 participants was conducted on the experiences of sharing material and immaterial artifacts, focusing on interaction with non-media content types. The survey included six categories of sharing: music preferences, travel plans, sports activities, apartments and vehicles, virtual items in online games, and dietary preferences. The study identified factors that motivate participation in content-mediated interaction: discovery, curating self, connectedness, collaboration, enjoyment, and instrumental motivations, as a set of six motivating factors driving contemporary sharing practices. The authors consolidated findings from earlier work on motivations to share personal content, validating the set of motivating factors with the six selected non-media types of content. The results suggest that both extrinsic and intrinsic motivations affect content sharing practices. Furthermore, motivating factors were mapped to the reported positive and negative experiences, in order to understand their relation and to discuss their capacity to guide user experience design.

## KEYWORDS

Apartment Sharing, Car Sharing, Content Sharing, Content-Mediated Interaction, Food Preferences, Music Preferences, Physical Exercises, Travel Plans, User Experience, Virtual Possessions

## INTRODUCTION

User-generated content dominates contemporary online services. Today, users can produce and share a large variety of digital content online, often in the form of status updates on social networks, pictures, audiovisual content, and text messages. Understanding user motivations to share this information has long been the focus of research on human–computer interaction (HCI) and computer-supported collaborative work (CSCW). Understanding the underlying user motivations to share and consume

content is essential for both service designers and researchers in the fields of HCI and CSCW. It guides decisions on the features that content-sharing services should incorporate.

The range of novel online services and connected devices has dramatically expanded the content and objects to share. Shared content and objects range from new types of digital content, such as music preferences and workout data, to sharing, renting, and loaning physical things, including household items, cars, or even apartments. Sharing economy services enable users to share their possessions and resources. In the sharing economy, the digital artifact that enables the sharing can be an advertisement for the resource (e.g., on a network hospitality platform) and is an act of communication, while an actual sharing activity often happens through physical interaction and is an act of distribution (John, 2013). Whereas a plethora of research has focused on the motivations of sharing on online social networking platforms, such as Facebook—especially on sharing photos—the sharing economy and other non-media sharing services have been studied less. This work extensively investigates and compares motivations to share different non-media types of content. With this work, the focus shifts towards understanding the recurrent motivating factors with various types of content.

Non-media types of content share similarities with traditional media content, such as photos, video, and audio. Non-media content can be derived or aggregated from standard content types, for example, travel data, which is often a collection of pictures and other metadata. Another example of non-media content is exercise data, which may include privacy-sensitive information. Moreover, the sharing enabled by sharing economy services is a fundamentally different phenomenon. These new phenomena require an extension of existing knowledge of the motivations and reasons that drive the sharing of personal physical possessions and resources. The design of this study involves unveiling the differences and similarities that motivate the sharing of non-media types of content. Furthermore, this work approaches the different types of content as diverse categories of items to share, whereas most earlier work has considered digital content as one entity (John, 2012; John, 2013).

The study focuses on six non-media types of content: (1) music preferences and playlists, (2) travel plans and trip details, (3) details of physical exercise and sports activity, (4) personal physical possessions such as apartments and vehicles ("sharing economy"), (5) virtual possessions in video games and virtual social worlds and (6) personal culinary and dietary preferences. Despite the wide variety of *objects* to share within the six typologies we selected, they all construct social relations (John, 2012) and provoke social intensification (Kennedy, 2016), which is manifested in communicative and distributed acts of sharing (John, 2013).

This paper focuses on two specific research questions:

1. What *motivating factors* are present within non-media types of content?
2. How do the *motivating factors* map to the *positive and negative experiences* reported by users of a content-sharing service?

Previous work on user-generated content has traditionally focused solely on content sharing, whereas in this work, we term all the identified activities around digital content sharing as content-mediated interaction (CMI) (Ojala, 2017). We define CMI as human-to-human interaction that is mediated by digital content. In addition to sharing, this study extends our knowledge of the "motivation to share content" and, more broadly, on participation in content-mediated interaction. The paper compares the findings from the current analysis to previous work on motivations to share. In particular, the study furthers our understanding of user experiences with novel content-sharing services. It also expands our theoretical understanding of content-mediated interaction by validating the content-mediated interaction model presented by Ojala (2017).

## RELATED WORK

Research on user experience and HCI in online services has traditionally focused on the single-user viewpoint, whereas the experience usually emerges from interactions between many users. The field of CSCW focuses on the collaboration between users. Especially in content-sharing services, social context is strongly present. Battarbee (2003) has studied the social dimension of user experience. He defines a *co-experience* as an experience that users have together or an experience created through the use of interactive technology. Buccini and Padovani (2007) describe *social experiences* as those that "happen among individuals and are intermediated by products." According to Väänänen-Vainio-Mattila et al. (2010), a social user experience is defined as a "user experience that primarily occurs as a result of social activity enabled by distinct service functionality."

Regarding the notion of sharing, the term means many things. Scholars from various scientific disciplines have used *sharing* ubiquitously to refer to the notions of gift exchange, reciprocity, and even discourse of disclosure in social media (Kennedy, 2016). John (2013) distinguishes two logics behind the term "sharing"—*distributive* and *communicative*. Sharing as an act of *distribution* means dividing a piece of something to give to someone. In distributive sharing, the shared item is a limited resource, such as an apartment rented to another person while not otherwise in use (Finck et al., 2016). Sharing can also be an act of *communication* in the sense of sharing our feelings and emotions. In *communicative* sharing, the shared item is not a limited resource. For example, sharing photos online is an example of the communicative sharing of an experience. Another example of *distributive* sharing is sharing a ride or a virtual possession. In these cases of sharing, a digital counterpart of the distributed item usually exists, such as an advertisement for a shared apartment. This digital counterpart can be seen to function in the *communicative* logic of sharing. This study's selection of content-sharing types includes both the distributive and communicative logics of sharing (see Fig. 1). This study uses a similar division of sharing logic as studies by Fedosov et al. (2016, 2017).

### Studies of Non-Media Types of Content

Much research attention has been given to sharing content, such as videos, photos, and textual information, through social networking sites (SNS). Olson et al. (2005) conducted a cross-domain sharing study on users' willingness to share different types of personal information and content. Voida et al. (2005) studied how users share their listening preferences using iTunes. Their work identified a phenomenon of creating an impression of the user based on their shared listening history. Aizenbud-Reshef et al. (2010) studied the sharing of travel information by interviewing employees regarding their willingness to share their past and future travel plans. Despite these efforts, little work has targeted novel content-sharing phenomena with a wider lens to understand sharing practices and motivations. This study aims to extend this knowledge to non-media types of content. We directed our efforts towards services and systems that enable CSCW online. The content categories that we examined have been studied individually. However, to our knowledge, no study has attempted to explain, compare, and contrast sharing motivations across different domains.

Prior research on sharing physiological data from workouts examined preferences regarding the tracking (and potential sharing) of personal health data (Mueller et al., 2010; Munson et al., 2012; Prasad et al., 2012). These studies indicated that sharing contributes to the overall user experience and enjoyment of workouts. These studies suggested that users are more likely to share physiological data with unknown users than close friends.

A recent online trend involves sharing physical possessions, rooms, and apartments (e.g., Airbnb). More recently, rides (e.g., Uber), cars (e.g., Getaround), and household items (e.g., Snapgoods) have joined the trend. The sharing economy of Airbnb and most other services is based on temporary access to resources, and internet technology is used to coordinate the collaboration between parties (Kennedy, 2016). Usually, compensation for the shared good is expected (Kennedy, 2016). Recent work on "sharing economy" services mainly focuses on the motivation to participate, such as discussions

on account-sharing practices (Lampinen, 2014) and initial monetization motivations (Ikkala & Lampinen, 2015) in network hospitality services. Bellotti et al. (2015) elaborate on the psychological roots of users' reasons to participate, emphasizing morality, social influence, status, empathy, social connection, safety, and instrumental motivations. This cross-domain empirical study uses the findings and insights from previous work to inform the initial categorization of users' motivating factors. Sharing information about culinary and dietary preferences has grown in popularity; for example, Davis et al. (2014) investigated the design space for recipe-sharing practices. The authors found that as cookbooks are family heritage items produced together, making them collaboratively managed virtual items allows for sharing knowledge within smaller circles more widely. This study setting included culinary and dietary practices as one of the non-media content types that people share online.

This study narrowed its focus to six non-media types of content: (1) music preferences and playlists, (2) travel plans and trip details, (3) details of physical exercise and sports activities, (4) personal physical possessions, such as apartments and vehicles ("sharing economy"), (5) virtual possessions in video games and virtual social worlds, and (6) personal culinary and dietary preferences. We based this selection on previous research and aimed to cover the whole continuum of distributive and communicative sharing (John, 2013). We ruled out traditional media content, such as pictures, audio, and video, as these have already been widely studied. We also ruled out traditional social media platforms, namely social networking services (e.g., Facebook, LinkedIn, Twitter, Wikipedia, Instagram), as motivating factors in these services have also been widely studied.

## Selected Work on Motivations

Wiklund-Engblom et al. (2009) studied the relationship between basic human needs and the user experience. They identified six fundamental human needs—*autonomy*, *relatedness*, *competence*, *stimulation*, *influence*, *and security*—that relate to the user experience with products. Sheldon et al. (2001) identified the top user needs, and Hassenzahl (2010) developed a framework to further construct a user experience (UX) theory in addition to these primary needs. Multiple motivational theories explain and predict the phenomenon of content sharing. Ryan and Deci (2000) introduced the self-determination theory (SDT), which lists behavioral motivations under the three main themes of *autonomy*, *relatedness*, and *competence*. Motivations are either intrinsic or extrinsic (Benabou & Tirole, 2006). Intrinsic motivations arise from inside the person, prompting them to act because doing something for oneself or for learning and personal growth is worthwhile. Extrinsic motivations, on the other hand, emerge from outer, instrumental goals or prizes. Extrinsic motivations include the assumption of an external incentive for doing something (Ryan & Deci, 2000).

Content sharing can be seen as a social exchange process involving three parties—*a creator*, *a sharer*, *and an individual or a group of individuals*—among whom the content is shared. Social exchange theory (SET), introduced by Homans (1958), describes the social exchange process in which a sharer considers the costs and benefits of sharing before making a decision. An example is the online sharing process, where a sharer usually gains nothing while a receiver benefits from a transaction. Online sharing is largely motivated by the expected emotional and social rewards. One modern theory based on the same ideas to explain the motivation to use media and services is the uses and gratification (U&G) theory (Dholakia et al., 2002). U&G theory addresses why people use media products and what gratification they receive or expect to receive from this use (Lampinen et al., 2015). Dholakia et al. (2002) presented five categories of U&G in SNS use: (1) purposive value that can involve instrumental gratification, such as receiving information; (2) self-discovery, which includes gaining knowledge of self and social resources; (3) maintaining interpersonal connectivity, which includes keeping in touch with contacts and maintaining friendships; (4) social enhancement, which includes status and recognition; and (5) entertainment, which includes fun and relaxation. However, this reasoning has changed with the advent of sharing economy services, where users can gain income. Previous work on sharing economy services suggests that on top of the instrumental motivations, such

as financial benefits, users are motivated by intrinsic motivations, such as interpersonal interactions and social exchange (Lampinen & Cheshire, 2016).

Different types of communities have a substantial impact on the motivation to share. Altruism, defined as giving something for the public good, has been identified as a motivator in services like Wikipedia (Antin et al., 2012). Bellotti et al. (2015) and Lampinen (2014) identified several motivations to participate in sharing economy services. Their work presents a plethora of motivations besides instrumental motivations to use sharing economy services. This study extends this knowledge of motivations towards sharing new types of content. Since drastic developments have occurred in how people can share content in a technical sense, as well as the habits of content sharing, this study aims to see whether the same motivations appear in the new paradigm of content sharing. Sense of community is a concept that was widely studied and discussed in relation to online communities in the early 2000s. The concept was introduced in the 1980s by McMillan and Chavis (1986), who categorized the main components as the *feeling of membership*, *feeling of influence*, *integration and fulfillment of needs*, *and shared emotional connection*. Blanchard and Marcus (2004) have studied the sense of community concept in online communities. Their work emphasizes the relevance of sharing content to supporting social relationships and connectedness between users. Based on these previous studies of motivation, we aim to identify recurring factors related to different types of content sharing.

## Content-Mediated Interaction Model and Motivating Factors

We use Ojala's (2017) content-mediated interaction as a guiding framework to reflect on the findings of this study. Previous research on user-generated content traditionally focuses on content sharing (e.g., Olson et al., 2005; Prasad et al., 2012). All the identified activities around digital content sharing have been termed content-mediated interaction (CMI) in this work. Content-mediated interaction occurs when technology mediates the *interaction* between people or groups through shared content. In addition to sharing, CMI includes other activities with content: *content creation*, *content consumption*, *content enrichment*, and *following the content* (Ojala, 2017). This work aims to validate the six motivating factors in the CMI framework: *discovery*, *curating self*, *connectedness, collaboration*, *enjoyment*, and *instrumental* (Ojala, 2017).

*Content consumption* describes users' actions, such as following others' photos appearing on Facebook or reading tweets on Twitter (Ojala, 2017). For the user experience of content consumption, the features available for searching and browsing the content are essential. *Content creation* activities include content capturing, downloading, and purchasing (Ojala, 2017). Additionally, editing the content and preparing the content for sharing are included in the *content creation activities*. *Content-sharing* activities include uploading content to the service or application where it will be ultimately shared, such as sharing one's recorded exercises (Ojala, 2017). *Content enrichment* activities happen in collaboration with other users. Commenting, re-posting, re-sharing, or remixing the content can be seen as *enrichment* where content develops (Ojala, 2017). Collaborative content enrichment also supports engagement with the content when those users who have not produced the content but enriched it with a comment, rating, or re-share become emotionally engaged in the content. *Following the content* describes an activity in which users who share or publish content want to follow how others consume the content (Ojala, 2017). This activity leans toward consumption. Furthermore, following the content endorses the users' self-expression and self-actualization, enabling them to understand their popularity and status in the community. All these activities fall under *curating self*. Features allowing users to follow content and be socially aware are strong motivators to share content.

The *discovery* category is tightly related to finding new content and learning new things and includes the development of one's skills. *Discovery* links to *consumption*, an activity users mainly engage with in content-sharing systems. Easy access to the newest and most exciting content is a feature that supports discovery (Lehtiniemi et al., 2016; Ojala, 2017). Results from previous studies show that users were highly motivated to find content from others, especially their friends and colleagues. In Karnik et al.'s (2013) work, users joining a specialized music group were motivated by the discovery

of new compositions, making contributions, and simply socializing with others. Discovering new songs and artists motivated them to be reciprocally social and contribute content to others. Lehtiniemi et al. (2016) focused on discovering new music content through collaboratively created and shared playlists. However, the study's interpretation of discovery is much broader than the previous study, including the motivations and experiences of discovering one's skills and capabilities, learning new things, discovering a system's technical possibilities, and discovering interesting content. Discovery as a motivating factor relates to the content consumption activity of CMI (Ojala, 2017).
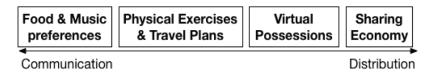
The category of *curating self* consists mainly of self-expression and self-presentation (Ojala, 2017). Motivations in this category are highly intrinsic. Besides self-expression, the category also includes self-presentation, which denotes presenting oneself to multiple audiences in a preferable way (Hogan, 2010; Lindtner et al., 2011). Maintaining and modifying one's identity online requires *profile-work* (Silfverberg et al., 2011; Uski & Lampinen, 2014). One of the most critical activities in the *curating self* category is personal memory and monitoring the self, which Goh et al. (2009) also identified. User motivations in the category of *curating self* include presenting and manifesting oneself through content, creativity, monitoring one's activities and development, showing one's skills and self-actualization, and development and pushing one's limits (Antin et al., 2012; Ojala, 2013; Ojala et al., 2013).

*Connectedness* is a pro-social category (Ojala, 2017) related to the basic psychological needs of belonging and relatedness (Ryan & Deci, 2000). The relevance of sharing for supporting social relationships has been thoroughly explored by Belk (2010). The work divides sharing into two categories: *sharing in* includes strengthening bonds within a group an individual knows, and *sharing out* includes making new contacts and reaching new audiences. Goh et al. (2009) list the motivations for sharing with people one knows under the themes of *sharing key moments*, *common ground*, *storytelling, and sharing daily activities. Connectedness* mainly concerns one's relationship with others and belonging to a group or community (Ojala, 2017). Enjoyable experiences felt together through content, such as telling stories to others and reliving experiences through content, are a part of connectedness.

The *collaboration* category relates to working together and contributing to the community (Ojala, 2017). Lampinen and Cheshire (2016) identified altruism and creating value for the community as motivations to participate in the sharing economy. Additionally, comparing oneself to others and competition belong to the collaboration category. Previous research has sometimes seen competition and collaboration as opposite motivations, but in the online context, they can be linked together (Ojala, 2013). As motivating factors, both drive individuals toward performing better and learning new things in relation to others. Collaboration is a motivation category that connects with both *pragmatic and hedonic* needs (Ojala, 2017). The pragmatic side includes motivations such as completing things together, contributing, and cooperating. The hedonic side includes comparison, contesting, gaining recognition, and being part of a group. Antin et al. (2012) studied Wikipedians and their motivations to participate in article writing. They found that the users valued contributing to a collective effort because of the cumulative outcomes they could see. Salovaara et al. (2006), in their work on mobile collaboration at public events, found that creating a shared space in which to collaborate and enabling the emergence of *collective objects* facilitated cooperation and motivated users. Goh et al. (2009) listed informing and decision-making as pragmatic motivations to share content.

The *enjoyment* category includes factors such as fun, aesthetics, consuming content, and gaining inspiration. The themes of enjoyment and playfulness are essential in designing entertainment services (Ojala, 2017). Enjoyment is a crucial part of determining whether the user experience is successful or not. Brown and Juhlin (2015) brought up an aspect of enjoyment in using smart machines. The *instrumental* category includes extrinsic motivations, implying the presence of outer incentives for actions (Benabou & Tirole, 2006). It consists of gaining aspects such as income or popularity. These six motivating factors in the CMI provide a framework for our study design. We aim to validate the CMI framework in the context of non-media content-sharing types.

**Figure 1. The communicative and distributed logics of sharing of selected non-media types of content**



## STUDY DESIGN

This study focuses on six non-media content types based on the *communicative* and *distributive* logics of sharing (John, 2013). We selected specific services to match both logics, conducting a literature review to scope the content types we wanted to cover. We discovered that social networking and services based on sharing pictures, videos, and links had been studied extensively; thus, we decided to rule out traditional social media platforms, namely social networking services (e.g., Facebook, LinkedIn, Twitter, Wikipedia, Instagram). The survey included six categories of content sharing: (1) music preferences and playlists, (2) travel plans and trip details, (3) details of physical exercise and sports activity, (4) personal physical possessions such as apartments and vehicles ("sharing economy"), (5) virtual possessions in video games and virtual social worlds, and (6) personal culinary and dietary preferences.

We selected the categories to ensure coverage of a large area of personal content and to account for the differences in several sharing dimensions, such as type of audience or level of disclosed details, and to encompass a wide range of personal *possessions* (Odom et al., 2014) in the digital and physical realms. Hence, we selected both physical types of sharing (e.g., cars and apartments) and immaterial types of content within the digital sphere (e.g., travel plans and workout data). The evolving digital infrastructure enables both spheres, which might entail different motivations to share. The former can be categorized as a more traditional financial economic model of "trade in goods," while the latter, content sharing, is more difficult to monetize as "trade in services." The selected content types vary from highly personal and intimate content, such as one's physical possessions, to more impersonal and abstract content, such as music preferences. The selected content types also vary along an automation continuum in terms of tracking and sharing. For example, physical activity data recording and uploading to services can be automated, whereas writing about one's dietary preferences may require manual work. Study respondents could select one or more of the content types. We asked similar questions about the frequency of sharing and the device used to share for each category. In each category, respondents answered questions about motivations to share. The survey's open-ended questions encouraged participants to elaborate on these differences. The questions are described in detail in the next section.

Furthermore, the different forms of sharing we selected might seem to be at different categorical levels, which could be partially explained by the fact that with the advent of digital networked technologies, the notion of sharing is fraught with ambiguity (John, 2012; Kennedy, 2016). To unfold the ambiguity of contemporary sharing practices, we followed John's (2012) descriptive account of *sharing* for Web 2.0. Figure 1 shows how six selected non-media content-sharing categories can be classified using the *communicative* and *distributed* logics of sharing (John, 2012; John, 2013).

Fig. 1 illustrates that food and music preferences are generally shared as an act of letting people know. On the other side of the continuum, sharing economy services clearly represent sharing as an act of distribution, where the physical object itself is being shared. Personal details of travel plans or physical exercise data are mainly shared for communication, while virtual possession sharing is meant for distribution. The study deliberately excluded traditional and popular content items, such as videos, photos, documents, and audio files, as sharing these has been studied widely. Similarly, due to the number of previous studies, we omitted popular sharing platforms from the survey, such as social

networks (e.g., Facebook) and messaging services (e.g., WhatsApp). To extend our knowledge of content sharing, the concept of CMI aims to understand the diverse interactions with content broadly and not focus solely on content sharing. The survey focuses on sharing, but evidence of other activities also emerged in the data. These activities are emphasized in the results section.

## Data Gathering and Analysis

The focus on motivating factors prompted the study to adopt both a deductive and inductive qualitative process approach. Previous empirical research on traditional content sharing, such as pictures (Goh et al., 2009; Ojala et al., 2013; Van House, 2011) and sharing economy services (Bellotti et al., 2015; Lampinen & Cheshire, 2016), provided an initial categorization of the motivating factors. Next, we conducted an online survey to rediscover whether those factors support sharing non-media types of content online. However, given the contemporary nature of the study's content-sharing types, we expected new themes to emerge. We identified and selected three sources of empirical data from the survey to analyze each content-sharing category:

1. Multiple choice questions on pre-defined motivations to share, based on the findings from earlier empirical studies. The study aimed to corroborate factors that drive the sharing of non-media types of content using the *top-down* approach. We formulated the questions on the reasons for sharing using the previously identified motivating factors as a foundation.
2. Open-ended responses to identify new reasons for sharing non-media content using the *bottom-up* approach.
3. Open-ended responses regarding positive and negative experiences with the online content-sharing service. Themes were formulated from the data. We mapped these to the motivating factors only after the thematic analysis of this data.

The online survey was launched for three months. The survey URL was distributed through all possible media: social media channels, mailing lists and forums, personal contacts, and printed flyers distributed throughout our academic institutions in two European countries. We recruited participants based on convenience sampling. Clearly erroneous responses were removed from the data. Responses stating that a participant does not share data in the mentioned category were also removed from the data and included in the non-sharing category, which is analyzed in the work by Fedosov et al. (2017).

In the data analysis phase, two researchers on the team employed an open-coding technique from grounded theory (Glaser & Strauss, 2009) to analyze all open-ended survey questions. The consensus coding approach was taken in the case of differences in first-order concepts. The team then discussed the findings during weekly face-to-face meetings to achieve a common interpretation of the data. We adopted an iterative process, recursively alternating between the data, the literature, and the identified categories. To draw out common motivating factors, we used affinity diagramming for positive and negative experiences of content sharing (Holtzblatt et al., 2004). Affinity diagrams allowed for a better understanding of the survey findings thematically. In particular, we employed the critical incident technique (Flanagan, 1958) to study the participants' answers regarding negative experiences with a content-sharing service to inform our categorization of experiential factors on the motivation to share. In addition to counting instances of each factor, we collected participants' quotes to support each factor of a given theme.

The online survey collected 200 responses (Fig. 2). All the participants had previous experience sharing content in one or more of the six categories listed in the survey (Fig. 2). The participants could give responses on multiple content-sharing types.

Fig. 2 describes the participants' demographics in all six content-sharing categories. Of the 200 participants, 125 (63%) were male and 75 (37%) were female, with the largest age group comprising adults aged 25–34. Their occupations spanned a wide spectrum, including ICT workers, researchers,

**Figure 2. Participant demographics**

| | Music Preferences | Travel Details | Physical Activity | Sharing Economy | Virtual Possessions | Culinary Preferences |
|---|---|---|---|---|---|---|
| Under 24 | 29 | 11 | 10 | 6 | 7 | 5 |
| 25-34 | 32 | 30 | 12 | 12 | 4 | 8 |
| Over 35 | 6 | 6 | 11 | 3 | 7 | 1 |
| Ave. age | 25.9 | 28.4 | 31.4 | 28.6 | 35.3 | 26.6 |
| Males | 47 | 22 | 22 | 11 | 14 | |
| Females | 20 | 25 | 11 | 10 | 4 | 5 |
| **Total #** | **67** | **47** | **33** | **21** | **18** | **14** |

educators, marketing professionals, and students, with 84% having academic degrees (bachelor's, master's, or doctorate).

## RESULTS

The results section consists of two main parts that link to the research questions. First, the motivating factors identified in previous work and referred to in the theoretical background are used to reflect on the findings of this study. This section describes the top-down analysis of findings. It answers research question 1: What *motivating factors* are present within non-media types of content? We report on the motivating factors and explain each using a concrete example from the findings.

The second part analyzes how the participants reported their motivations across the different non-media content types. Lastly, these motivations are mapped to users' positive and negative experiences. This section follows a bottom-up analysis in which two researchers thematically map the grounded findings on *motivations to share* (Fig. 4) and positive and negative experiences (Fig. 5) to the related motivating factors. This chapter answers research question 2: How do the *motivating factors* map to the *positive and negative experiences* reported by users of a content-sharing service? Following this, we discuss how these findings can be used in practical design work, further research, and theoretical work.

The study also investigated privacy and trust implications (Fedosov et al., 2017) of sharing content and interacting using personal devices (Fedosov et al., 2016) to access a shared service. However, the present analysis only reports in detail on motivations and reasons to share, leaving the analysis of other themes in the study for separate publications. Fedosov et al. (2016) present a statistical analysis of the data.

### Rediscovering Motivating Factors and Reasons for Non-Media Content Sharing

The following section first discusses the concept of content-mediated interaction and then the six identified motivating factors. Ojala's (2017) doctoral thesis describes the six motivating factors from this study. The survey collected open-ended responses on reasons people share the non-media content types they selected. In total, 545 responses were collected on the reasons for sharing. For these responses, we conducted a bottom-up analysis using affinity diagramming. After conducting a thematic analysis of participants' motivations, we identified the six motivating factors: *discovery,*

**Figure 3. Reasons to share across six non-media content sharing categories, responses from multiple choice questions**

| Category | Reason | Music Preferences | Travel plans and trip details | Physical activity | Sharing Economy | Virtual Possessions | Culinary preferences |
|---|---|---|---|---|---|---|---|
| Discovery | I want to know how popular it gets | 15 % | 10 % | 6 % | 6 % | | |
| | I want to know who are interested in it | 38 % | | 15 % | | | |
| Curating Self | I want to express my activities and preferences | 78 % | 75 % | 61 % | | | 14 % |
| | I want to keep a diary/log for myself & friends | | | 6 % | | | |
| | I want to show my achievements and/or skills | 10 % | 15 % | 61 % | 12 % | 56 % | 21 % |
| Connectedness | I want to get connections, alliances, meet new people | 15 % | | 12 % | 70 % | 44 % | 7 % |
| Collaboration | I want to contribute to the community, gameplay | | | | | 67 % | 36 % |
| | I think that others can give feedback | 35 % | | 39 % | 18 % | 50 % | 36 % |
| | Others share too - it is a common habit | 28 % | 27 % | 42 % | 29 % | 39 % | 36 % |
| | I expect someone would share in return | | | | | 50 % | |
| | I like to provide interesting information to others | 68 % | 65 % | 45 % | 82 % | 67 % | 79 % |
| | I do it for comparison against peers | | | 3 % | | | |
| Instrumental | I would like to make extra money, run a deal | | | | 35 % | 11 % | |

*curating self, connectedness*, *collaboration, enjoyment*, and *instrumental*. The following section examines each factor based on the open-ended responses from the survey participants.

Fig. 3 describes the thematically ordered findings from the multiple-choice responses regarding reasons to share. These findings follow a top-down analysis in mapping the multiple-choice responses to the previously identified motivating factors. We constructed the multiple-choice options based on knowledge of motivations from previous studies. At the time we designed the multiple-choice questions, the *enjoyment* category was not yet considered as a separate category, so it does not show in the categories in Figure 3.

Fig. 4 describes the thematically ordered findings from the open-ended responses for reasons to share. The methodology followed a top-down analysis, with the questions on reasons to share built on the foundation of the previously identified motivating factors. The discovery factor was absent from the open-ended "reasons to share" responses. However, the open-ended answers clearly showed the *enjoyment* and *instrumental* categories. The open-ended answers indicated that *enjoyment* should be divided into its own category. In the figure, the cells are color-coded by their occurrence rate.

**Figure 4. Reasons to share across six non-media content sharing categories, responses from the open-ended questions**

| Category | Reason | Music Preferences | Travel plans and trip details | Physical activity | Sharing Economy | Virtual Possessions | Culinary preferences | Total |
|---|---|---|---|---|---|---|---|---|
| Curating Self | Monitoring own state of affairs | 3 | 7 | 15 | | | | 25 |
| | Self-development and self-expression | 23 | 4 | 11 | | | 5 | 43 |
| Connectedness | Seek recognition, approval, feedback of peers | | | 13 | | 1 | | 14 |
| | To keep in touch with peers and meet new | 14 | 35 | 8 | 4 | 1 | | 62 |
| Collaboration | Competing against peers | | | 12 | | | | 12 |
| | To share knowledge | 62 | 18 | 13 | 24 | 29 | 24 | 170 |
| | To provide motivation and inspiration | 61 | 25 | 25 | | | 8 | 119 |
| | To ensure safety and build the trust | | | | 7 | | | 7 |
| Enjoyment | Sharing joy and experience | 40 | 11 | 3 | 2 | 7 | 1 | 64 |
| Instrumental | To gain profit and advancement | 1 | 3 | | 10 | 15 | | 29 |
| | | 204 | 103 | 100 | 47 | 53 | 38 | 545 |

Across all content types, sharing knowledge and providing motivation and inspiration to others were the most frequent reasons for sharing (Fig. 3, Fig. 4.). In all content types, participants frequently reported sharing knowledge with other users as a motivation. The *discovery* category did not appear in the findings related to reasons for sharing. For example, participants mentioned their willingness to openly share information that would benefit some individuals and communities. For instance, one respondent listed "*Information about production of foods and important foods that substitute meat and fish*" (*Female, 26, culinary preferences*). On the *distributive–communicative* continuum (Fig. 1), differences appear between the *connectedness* and *instrumental* factors. Most *instrumental* reasons occur on the *distributive* end of the continuum. By contrast, most *connectedness* reasons occur on the *communicative* end. The occurrences of *instrumental* motivations are surprisingly low even in the sharing economy, which could partly relate to the convenience sample. We can speculate that those offering sharing economy services due to the business incentives might not be willing to respond to a survey about sharing motivations.

A sense of community (Blanchard & Marcus, 2004) motivates participation and involvement in society, making people more open to sharing information with others. The results in Fig. 3 suggest that *self-development* and *self-expression* were strongly present in the music preferences and physical activity categories. Physical activity also strongly included the monitoring of one's own state of affairs as a motivation. To understand the differences in motivations to share across different content types, participants were asked to answer multiple-choice and open-ended questions on their motivations to share the non-media content type they had selected.

Fig. 4 shows that in the multiple choice answers, "providing information to others" was strongly present in each of the content types, and "contributing to the community" appeared in *virtual possessions*. Altruistic motivations were also strongly present in the work of Antin et al. (2012) and Bellotti et al. (2015). Interestingly, these motivations are clearly present in the non-media content types. In music, sports data, and travel information-related services, users emphasized *curating self* as a form of expressing activities and preferences as a primary motivator. That is, they highlighted *curating self* as a motivating factor in fundamentally social activities. However, social extrinsic motivations, such as rewards in the form of social recognition and approval by the community, were connected to both *collaboration* and the *connectedness* factor. These examples support the idea that motivating factors overlap, and the action usually happens based on a combination of multiple factors.

For the *discovery* factor, participants emphasized that their shared content helps others discover new things. Also, they saw possibilities for reciprocal discovery, which occurs when others are also more willing to share. One participant noted, "*I like discovering new music, and that's why I'm doing it... I noticed that people were enjoying what I was suggesting them to listen to*" (*male, 26, music preferences*). The quote illustrates the activities of sharing and consuming. Additionally, enrichment activity was evident as people responded to the music suggestions, thus enriching the shared content.

Sharing with others also partly involves discovering one's own skills and potential. Sharing content helped respondents connect with others who have similar tastes and thus helped them to discover new, interesting content. As one participant explained, "*I am a music aficionado on a never-ending quest for the perfect song or record. I believe that by sharing some of my (especially more obscure) favorites they may better reach potential fans who might not be as keen on going through thousands of mediocre songs and albums to strike gold maybe once or twice*" (*male, 27, music preferences*).

The results show that users like to share personal content with various levels of detail. The survey also found that self-representation in front of varying audiences clearly motivated users. The factor of *curating self* consists in part of building and expressing a desired identity to a particular audience, as the *profile work* concept presented by Silfverberg et al. (2011) suggests. One respondent explained, "*I think that everything we are sharing on social networks and other platforms is shaping our digital public image. If I like music and I feel represented by it, I'm more than happy to share it online*" (*male, 26, music preferences*). Another quote describes how social recognition of sporting achievement

helps build self-recognition: "*I did very well in orienteering and other people congratulated me after seeing my route on the internet*" (*female, 20, physical activity*).

Regarding the *connectedness* factor, meeting new people especially and keeping in touch with the people one knows were evident. Quotes from music hobbyists illustrate these motivations. Regarding new connections, one participant stated: "*I shared a song in the proximity of a concert and I met other people that were going to the same concert. Finally, we shared a chat to come there and we spent an evening together*" (*female, 26, music preferences*). With reference to keeping in touch with the people one knows, another participant stated: "*Good and fresh music makes happy people. However, it seems that my primary audience is a bunch of my record-collecting friends who are on a mission similar to mine*" (*male, 27, music preferences*).

Participants also emphasized the *collaboration* factor. Importantly, social recognition from others motivated contributions to the services: "*I shared fireworks from Hong Kong at a time when my image went viral and was seen by 5m people, or so Twitter tells me*" (*male, 42, travel details*). This quote represents content creation activity. Additionally, the practice of following content was present as participants reported following the activity on their shared content. The above quote indicates that the participant considered following the popularity of content an important activity. Other users participated in an enrichment activity by adding their comments on the content.

Support from peers and gaining inspiration from the content of others was a strong part of the collaboration factor: "*I entered a competition on mapmyrun for the most workouts. I was in the lead for a few days. I was pretty proud of myself for my dedicated approach*" (*female, 35, physical activity*). Respondents stated that both pragmatic and hedonic support are important motivations in terms of the collaboration factor: "*I remember when I started working out, I got very demotivated at some point, and I put it online. Suddenly, I got really nice messages from a lot of people and made me push even more, knowing that there is people who trust you*" (*male, 24, physical activity*).

The motivating factor of *enjoyment* was evident in sharing the experiences, usually not in an informative manner, but instead for the sake of sharing the experience itself. One participant articulated this *enjoyment* related to sharing and receiving feedback: "*Sharing food [with] others on Instagram made people envious of my food. Felt good*" (*female, 22, culinary preferences*).

In relation to the sharing economy and virtual possessions, the survey included a choice of making extra income and deals. This *instrumental* motivation to gain profit and advancement was evident in the sharing economy and virtual possessions, whereas *enjoyment* was present in all of the categories but most evident in sharing music preferences and travel plans. Extrinsic motivations, such as outer incentives and gaining income, were clearly linked to the *instrumental* factor. Surprisingly, *connectedness* was most strongly present in sharing *physical activity* in the form of seeking recognition and in sharing *travel plans* in the form of keeping in touch. In Fig. 5 (right), interestingly, *connectedness* was most strongly evident in the sharing economy. Social outreach and making new connections fall under both *instrumental* and *connectedness* reasons in sharing economy services, as they aim towards extending the audience for sharing or renting an apartment or other physical resource. In the scope of sharing economy services, building a reputation in the system is essential as an *instrumental* motivation. Providing objective reviews or ratings for shared content increases its quality and reputation. Thus, this study found that collecting income and promoting oneself are important motivational aspects of building a reputation within a particular service. The instrumental motivating factor was especially evident in the sharing and virtual possessions economy, where users wanted to collect income or lower costs—real or virtual: "*[I share] to meet new people and lower the costs of the car*" (*female, 31, sharing economy*).

## Positive and Negative Experiences Building Motivation

To understand how positive and negative experiences related to the motivating factors, these two elements were logically mapped to each other (Fig. 5). Participants reported their experiences and selected whether they saw them as positive or negative. Two researchers completed this mapping,
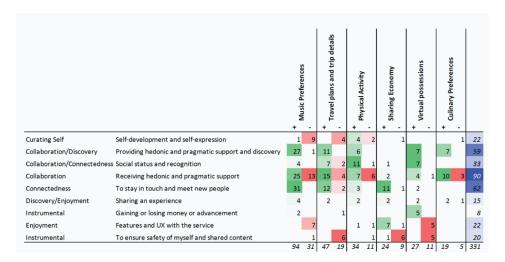
**Figure 5. Positive and negative experiences with content-sharing services**

|  |  | Music Preferences + | - | Travel plans and trip details + | - | Physical Activity + | - | Sharing Economy + | - | Virtual possessions + | - | Culinary Preferences + | - | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Curating Self | Self-development and self-expression | 1 | 9 |  | 4 | 4 | 2 |  |  | 1 |  |  | 1 | 22 |
| Collaboration/Discovery | Providing hedonic and pragmatic support and discovery | 27 | 1 | 11 |  | 6 |  |  |  | 7 |  | 7 |  | 59 |
| Collaboration/Connectedness | Social status and recognition | 4 |  | 7 | 2 | 11 | 1 | 1 |  | 7 |  |  |  | 33 |
| Collaboration | Receiving hedonic and pragmatic support | 25 | 13 | 15 | 4 | 7 | 6 | 2 |  | 4 | 1 | 10 | 3 | 90 |
| Connectedness | To stay in touch and meet new people | 31 |  | 12 | 2 | 3 |  | 11 | 1 | 2 |  |  |  | 62 |
| Discovery/Enjoyment | Sharing an experience | 4 |  | 2 |  | 2 |  | 2 |  | 2 |  | 2 | 1 | 15 |
| Instrumental | Gaining or losing money or advancement | 2 |  |  | 1 |  |  |  |  | 5 |  |  |  | 8 |
| Enjoyment | Features and UX with the service |  | 7 |  |  | 1 | 1 | 7 | 1 |  | 5 |  |  | 22 |
| Instrumental | To ensure safety of myself and shared content | 1 |  |  | 6 |  | 1 | 1 | 6 |  | 5 |  |  | 20 |
|  |  | 94 | 31 | 47 | 19 | 34 | 11 | 24 | 9 | 27 | 11 | 19 | 5 | 331 |

iteratively comparing and discussing the content items in each experience category and mapping them to the motivating factors. Fig. 5 thematically orders the positive and negative experiences. This analysis follows grounded theory, as the themes are founded on the responses to the open-ended questions. After that phase of analysis, we mapped the themes to the motivating factors, as seen in Fig. 5. In the figure, the cells are color-coded by their occurrence rate. Negative experiences are indicated by the color red and positive experiences by the color green.

The positive and negative reported experiences offer a set of empirical data in which the participants reflected the outcomes of the use of these services. By mapping the experiences to the motivating factors, the researchers created an understanding of how these findings relate to each other.

The analysis found that the reported positive and negative experiences fall within the framework of motivating factors, thus validating the framework through the open-ended data. Some of the mentioned positive and negative experiences were directly linked to the particular features or the overall user experience of the services. We speculated that these experiences relate to the motivating factor of *enjoyment*. For instance, one participant said, "*I posted an ad and within 1 hour I received three requests from people who were interested in my ad*" (*male, 34, sharing economy, accommodations*).

Surprisingly, respondents rarely reported experiences related to the *instrumental* factor ("Gaining or losing money or advancement") as positive. Strikingly, no one reported an *"instrumental"* experience in the sharing economy, with virtual possession being the most frequently reported experience (Fig. 5).

An Airbnb user suggested that the positive experience feature relates directly to the *connectedness* and *instrumental* motivating factors, as the user clearly appreciated the feature of finding out the interests of others through requests but also valued the possibility of gaining income through advertisements. Another source of positive experiences was self-promotion, which falls under the motivating factor of *curating self*. As a MySpace user stated, "*I uploaded a new track of mine in Myspace in 2008, and the day after a producer from London (which was my main influence in that period) wrote me to tell me that he was enjoying that track so much... and that he would have played an edit of my track the following night in a UK club. I was thrilled*" (*male, 26, music preferences*).

*Connectedness* in the form of enabling social awareness can evoke negative experiences. When users are aware that others can see their content but are not commenting or responding, it can lead to a feeling of inactivity in the service. One responded recounted, "*I shared information about an exercise which was really great and made me feel really good, I felt I succeeded in it very well. I didn't*

*get any comments or cheers about it, which made me feel like, did anyone 'follow' me?*" (*female*, *26*, *physical activity*).

Safety and privacy-related experiences were mostly reported as negative, which suggests that safety and privacy concerns are basic-level needs that need to be fulfilled in order to have a pleasurable user experience with the service. Sharing content can be seen as a decision users make by considering the risks and benefits sharing might bring. The privacy concerns and needs that our participants articulated were mostly formulated around the concept of "*content* that is shared with a particular *audience.*" With respect to concerns about the recipient (audience) of a particular piece of information, the participants noted three main issues: (1) a particular individual or an unwelcome group might gain access to the shared data; (2) concerns about the misuse and violation of personal data as a result of fraud or safety issues (e.g., identity theft); and (3) acquisition by a third party. Participants were conscious of sharing information that would reveal their identity. Our findings on privacy-related concerns and the reasons for device selection are described in more detail in Fedosov et al. (2017).

## DISCUSSION

This study organizes and extends the knowledge of motivating factors in the sharing of new content types. It also discusses reasons that drive sharing beyond traditional digital content (e.g., images and video clips) towards the sharing of personal physical possessions and resources enabled by sharing economy services. The analysis brings to light the differences and similarities that motivate the sharing of these non-media types of content. We approach interactions with content by extending from the concept of "sharing" to content-mediated interaction, which includes other activities with various types of content.

We identified six motivating factors from the empirical data: *discovery*, *curating self*, *connectedness*, *collaboration*, *enjoyment*, and *instrumental*. These validate the motivating factors presented in the CMI framework (Ojala, 2017). Also, the study compared its findings with the motivating factors identified by previous studies. Four of these (*discovery*, *curating self*, *connectedness*, *and collaboration*) can be directly linked to previous studies with traditional types of digital content (Antin et al., 2012; Ojala, 2013; Ojala et al., 2013). Traditional online content sharing can be seen as *communicative* sharing of content (John, 2013). The study identified two other motivating factors (*enjoyment* and *instrumental*) that also connect to findings from studies on sharing economy services (Bellotti et al., 2015; Lampinen & Cheshire, 2016). The sharing economy manifests the *distributive* act of sharing, as well as virtual possessions in some cases, where resources are limited (John, 2013).

### Limitations of This Work

One limitation of this study is the number of participants. The 200 responses across six different categories offer insightful material for qualitative analysis but limit the possibilities for statistical comparison. The study also lacks a comparative analysis between traditional and non-media types of content. The analysis is based on the earlier findings on traditional content types, which partly lifts this limitation. Conducting a larger study that also involves traditional content-sharing services, such as photo sharing and online social networking services, would be beneficial. To further understand the motivating factors, a factor analysis on the motivating factors and their occurrence in different types and dimensions of content sharing could be conducted. However, since the researchers triangulated the data sources to validate the results from the data analysis and complemented the qualitative findings with quantitative results from content analysis, the study's findings can be considered reliable.

### Motivating Factors Across the Selected Emerging Content Types

The study findings show an overview of the "what" and "how" of the six motivating factors present throughout different types of non-media content. Furthermore, the study discusses how they can be mapped to positive and negative experiences of a content-sharing service. They also reflect the

fundamental motivations to be addressed by the designers of collaborative online services. The first five factors (*discovery*, *curating self*, *connectedness*, *collaboration*, and *enjoyment*) are mainly hedonic *be-goals*, as described by Hassenzahl (2010), whereas the sixth category, *instrumental*, is a pragmatic *do-goal*. The *collaboration* factor is equally pragmatic and hedonic.

The SET introduced by Homans (1958) concentrates on the *instrumental* motivations of sharing, in which users evaluate the possible costs and benefits of sharing their content. Similarly, in our findings' *instrumental* and *curating self* categories, participants expressed that they consider the ramifications of sharing. The findings in this work align with those of SDT, suggesting that users are motivated by intrinsic and extrinsic motivators (Ryan & Deci, 2000) across all studied content types. Surprisingly, in the reported positive experiences, gaining money or advancement, the most obvious instrumental outcome, was rarely reported. Compared to research on the U&G theory (Dholakia et al., 2002), the motivating factors can be seen as expected outcomes of using the service, guiding the user's choice to use or not to use the service. In the longer term, this use evokes positive and negative user experiences, which affects the continuance of the use. The study suggests that motivating factors form a basis or a benchmark, which helps categorize the expected outcomes of the use that people desire.

## Motivating Factors Guiding User Experience Design

The theoretical contribution of this work is to reflect on the previously identified motivating factors for different types of shared content (Bellotti et al., 2015; Lampinen & Cheshire, 2016; Ojala, 2013; Ojala et al., 2013) and expand that framework using the findings from non-media content types. The analysis shows that reported positive and negative experiences fall within the framework of motivating factors, thus validating the framework through the open-ended data.

Motivating factors offer a practical tool for designers to understand practices based on the content. It can guide the design of social experiences of a given service. Motivating factors can deepen the basic service design questions: "Does the service offer motivation for the targeted user groups?" and "Does it address users' underlying needs?" This work furthers the understanding of the differences that drive sharing non-media content types.

As the findings suggest, the interplay of different motivating factors occurs in different types of content sharing. For a successful user experience, the design should include numerous features to support different motivating factors. The motivating factors and their mapping to positive and negative experiences support an experience-driven design. This study builds upon existing work and knowledge of the traditional content types (Antin et al., 2012; Belk, 2010; Ojala, 2013; Salovaara et al., 2006) and work on the sharing economy (Bellotti et al., 2015; Ikkala & Lampinen, 2015; Jung et al., 2016; Lampinen, 2014; Lampinen et al., 2015; Lampinen & Cheshire, 2016) but also extends the findings on motivating factors that are generalizable over different types of shared content.

The findings on the motivating factors presented in this work should be used as general guidelines to guide research on services that enable content-mediated interactions. Services should be designed to motivate users by selecting features that fulfill multiple motivating factors. If a service aims to support people to share their ride, for example, it should—in addition to instrumental motivations— also support social interaction with others (connectedness) and altruism (collaboration). This analysis suggests that motivating factors are not dichotomous; instead, they overlap. For example, some reported positive and negative experiences can be mapped to multiple motivating factors. Similarly, the reported reasons for sharing can be mapped to multiple motivating factors.

## CONCLUSION

This work presents results from an online survey of 200 participants on their motivations to share six emerging types of content. The study discusses six motivating factors empirically rooted in six non-media content types. The work extends our knowledge of motivation to share from traditional media content types to non-media types of content, showing how users' motivations differ in sharing six

non-media types of content. The identified motivating factors are reflected in participants' positive and negative experiences using the services.

This work validates the motivating factors that drive content-mediated interaction. The findings on motivating factors and linked positive and negative experiences can guide designers more specifically in designing the essential features and interactions for the given service. It is important to understand that, in many cases, user activity is motivated by more than one factor. This is a noteworthy conclusion for the service designers, as the services are often founded solely on instrumental or enjoyment motivations. It is evident that the sharing economy offers various possibilities for decreasing the production of physical objects and thus offers solutions for over-consumption in the broader view. An understanding of motivating factors allows designers to concentrate on more critical questions rather than spending time and making transactions on commercial platforms.

We believe that motivating factors in the sharing economy must be researched further with a focus on a more comprehensive variety of sharing economy services. In future work, we suggest expanding the work on the motivating factors toward drawing practical guidelines for user experience and service design. Subsequently, we plan to conduct contextual observations and interviews to better understand content-sharing motivations and deepen the understanding with qualitative material. Focusing on instant and ephemeral messaging services could extend our knowledge of sharing motivations.

The selection of six non-media content types provides a comprehensive viewpoint on current content sharing; however, more extensive work on various content types is necessary. Content-mediated interaction aims to understand different activities around content and user roles that change during the prolonged use of the service. In different use sessions, users can perform different activities. For example, novice users may solely consume content, but with extended use of the given service, they become more likely to engage and participate in content creation and sharing. The study suggests that a different interplay of motivations guides users' behavior in various activities. These different combinations require further research. In the future, we see the value of consolidating this study's findings on motivating factors into a theoretical model that describes reasons to share personal content and possessions in both physical and virtual realms. Moreover, we plan in future research to extend our knowledge of motivating factors toward practical guidelines for user experience and service design. We hope that this work on CMI and its motivating factors can serve as a basis for future motivational studies in online contexts.

## CONFLICTS OF INTEREST

## FUNDING STATEMENT

## PROCESS DATES

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