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# Video sharing as a user tactic of empowerment: Analysis of social media videos featuring users' actions on everyday objects

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## Abstract
This study centers on TikTok videos, which serve as a medium for users to express their active interactions with products. These videos offer insights into users' everyday lives and practices, yet design researchers find challenges in recognizing this content due to its unique verbal and visual language, which is distinct from conventional design terminology and literature. This paper highlights the user-empowering videos while emphasizing their capacity to hold innovative design ideas. The primary goal is to familiarize design researchers with this content and enhance its visibility and recognition. To achieve this goal, we address the question: How do users express their experiences of active product use in TikTok videos? In a systematic TikTok search, using a balanced set of everyday objects as keywords, 79 videos were gathered that demonstrate an active user-product relationship. Video content analysis was employed, leading to the identification of six themes that describe the expression ways of active use: "exposing," "exploring," "suggesting," "making," "testing," and "narrating." The themes reveal a broad spectrum of content, from vocal product critiques to unique design experiments. The study shows that seemingly unrelated content can contain implicit meanings with valuable information about design and use. Contrary to the embracing approaches of conventional user-centered design, the videos include peer criticism, where users criticize the actions of other users. By enabling users to exchange information independently, videos on TikTok empower users and carry the potential to be a continuously expanding and up-to-date data pool that could be used in design research.

## 1. Introduction

Since the paradigm shift in design from the product-centered to the user-centered approach, discussions and empirical studies have been undertaken to cultivate a more nuanced comprehension of users and actively engage them in the design processes. Although users are engaged in design processes more than ever, prevailing criticisms emphasize a significant progression required to achieve complete user integration in design processes (Redström, 2008).

It is criticized that defining individuals as 'users' implies passivity, limiting their interactions with products to compliance with company instructions (Kohtala et al., 2020). However, users no longer passively accept products as presented; instead, they have a more complex and multi-layered relationship with products, characterized by increasing awareness and consciousness of their use and consumption behaviors. This dynamic relationship involves questioning, intervening, changing, constructing, and reconstructing their interactions with objects.

As social media (SM) is deeply integrated into our daily lives, product users now share and disseminate their active use and interactions through social media platforms (SMP). Although SMP abounds with product promotions and commercials, a significant portion of the content involves users sharing their sincere experiences and thoughts about objects. These users interpret the objects and the parties involved in their design, production, distribution, and mediation.

The paper examines the TikTok videos to get insights into the approaches for sharing and expressing user actions; by this, it emphasizes the empowerment of users through sharing and discusses the contribution to user studies. Furthermore, this paper emphasizes the emergence of a new and influential user archetype that actively generates and shares videos about active use. This paper does not focus on various forms of active user engagement. Instead, it investigates diverse typologies of video content, which play an essential role in disseminating these actions. The sharing of videos on SMPs

is regarded as a tool for user expression and communication, which is suggested as a tactic that enhances user empowerment.

The second section of this paper presents the current position of users in design research and practices. Then, a brief overview of the taxonomy studies that classify users and active use patterns is provided to clarify key concepts like action and active user. The same section elucidates the user actions alongside the associated concepts like movements and communities, which empower users in design society. The third section positions TikTok as a favorable SMP with features that facilitate video sharing and create appropriate ground for disseminating users' actions. In the fourth section, video sharing on SM is positioned as a tactic inspired by Michel de Certeau (2004).

In the empirical study, 79 TikTok videos featuring user actions are systematically collected and subjected to video content analysis. As a result, clustered examples of sharing tactics are divided into six themes. Then, the characteristics of themes are explained through examples, and the various forms of knowledge transfer through videos are emphasized. The potential contributions of the findings to user-centered design approaches are deliberated upon.

## 2. Empowerment of users in design

Over the past thirty years, various design methodologies have emerged in both research and practice to enhance users' active role in shaping product and service development. As one of the most prevalent approaches, Participatory Design possesses a rich heritage of tackling power dynamics and concerns related to empowerment and democracy in design, with a focus on involving local communities, marginalized groups, and institutions in design activity that fosters bottom-up development (Bannon & Ehn, 2012). Similarly, Co-Design aims for equal collaboration between designers, users, and people from various disciplines in a shared creative space to merge diverse perspectives and craft innovative solutions (Sanders & Stappers, 2008; Visser et al., 2005).

The transition towards a user-centered paradigm has paved the way for an unfolding of opportunities, enabling the empowerment of users in the design field. The discourse surrounding user empowerment has stimulated comprehensive deliberations on democracy (Atkinson, 2006) and plurality (Escobar, 2018) in design. Spurred by the advancement and proliferation of technology, a notable shift has also occurred in the active engagement of users in production (Rayna & Striukova, 2016). This has given rise to vibrant movements, communities, and initiatives, such as open design (Aitamurto et al., 2015), crowdsourced design (von Hippel, 2016), makers (Hyysalo et al., 2014), prosumption culture (Beer & Burrows, 2010) and Fab-Labs (Gadjanski, 2015; Walter-Herrmann & Büching, 2013). Central to these cultures is the empowerment of individuals to customize their lives and surroundings by acquiring new skills and embarking on projects rather than accepting products as they are (Deibert, 2014). Today, it is widely acknowledged that makers, prosumers, and user innovators are assuming multifaceted roles in design and innovation, both on individual and community levels (Anderson, 2012; Kohtala, 2016; Kohtala et al., 2020; Margolin, 1997; von Hippel, 2005, 2016).

These transformations and developments have led to the emergence of a new type of user characterized by a certain level of awareness and an active relationship with products. The conventional term user no longer suffices to describe these active individuals, as the term user implies a passive acceptance of use without any intervention or alteration. Literature offers taxonomic explorations to discern varying levels of active users, such as the models of appropriation from consumption to production (Eglash, 2004), everyday creativity (Sanders, 2006), lay design (Hermans, 2015), and active user engagement in design (Kohtala et al., 2020). These models encompass some aspects of active use while excluding others (Kohtala et al., 2020). For instance, Kohtala et al. (2020) categorize innovations based on their effectiveness, Eglash (2004) does not make any differentiation on innovation, and Hermans (2015) did not integrate meaning-related modifications into their model.

In light of these studies, we understand that active use corresponds to any altering action of a user comprising physical or meaningful additions to a designated product, system or design idea. Within active use, the user alters at least one of four aspects: object, use, meaning, or context (Kohtala et al., 2020). The active user adds value to production and can conceive novel concepts and designs tailored to local or personal needs (Troye & Xie, 2007). The idea, design, or innovation emerging from active use could have an impact that ranges from individual daily benefits to the potential for global transformation (Kohtala et al., 2020). The actively design-engaged use practices hold considerable significance, impacting not only the design profession but also economic, societal, and environmental issues (Kohtala et al., 2020; Redström, 2006, 2008).

The study embraces a comprehensive perspective on being an active user, as the paper does not primarily concentrate on differentiating active uses. The active phase of being a user is conceptualized starting with the acceptance of the passive mode of use: 'use as-is' (Kohtala et al., 2020, p. 33), which involves using a product as recommended by its creators. When users start raising questions or expressing concerns about the use or product, that is the particular moment marking their transition into an active role. At the basic level, as individuals engage with an artifact, they accumulate knowledge and experience through their interactions. This accumulation carries the potential for—consciously or by chance—discoveries of unique and innovative uses (Redström, 2008). In other words, due to active use, 'new definitions of use through use' can emerge (p. 413).

In the user-centered approaches, Redström (2008) proposes a shift in perspective from the question of 'who' the user is to 'how' it is used (p. 410). This perspective may facilitate capturing the discoveries that emerge organically during actual use. These discoveries often diverge from the initially

envisioned uses established during the design phase (Redström, 2008).

## 3. TikTok: A multifaceted SMP for user interaction and knowledge sharing

TikTok is primarily a SMP where users share and watch videos. It skyrocketed in popularity during the pandemic as people sought entertainment and connection (Jerasa & Boffone, 2021). This growth has attracted users and companies, making TikTok take the attention of design research and industry in recent years.

The studies on TikTok have predominantly been on marketing, including purchasing choices (Meliawati et al., 2023), business models (Mhalla et al., 2020), and video shopping (Yang & Lee, 2022). While many design studies recognize knowledge sharing among users in SMPs, a limited number of studies have focused on user-centric perspectives, such as knowledge sharing (Irani et al., 2017), user innovations (Franke et al., 2006), online product opinions (Moe & Schweidel, 2011), product co-creation (Rathore et al., 2016), user-generated content in design education (Eren, 2020). The majority of studies specifically centered on TikTok have concentrated on crafting-related topics, such as innovation analysis of crafts (Yu et al., 2020), creative work (Collie & Wilson-Barnao, 2020; Kaye et al., 2022), and crafting (Simpson & Semaan, 2023).

The distinctive features of TikTok, particularly its short and vertical video formats, simplify video creation and consumption for everyday users, leading to better integration of the platform into daily life (Canella, 2018; Mustikawati et al., 2022). This, in turn, renders it an appealing platform for user research. Because 90% of videos are viewed on mobile devices (Wyzowl, 2023), vertical videos have become the dominant content (Mustikawati et al., 2022). Vertical format facilitates video production by enabling users to capture and record videos without requiring device rotation (Canella, 2018).

Notably, vertical videos evoke a sense of intimacy by featuring close-up shots of people and objects, emphasizing the image, enhancing a sense of reality, and promoting cognitive engagement (Copolla, 2018; Mingti et al., 2022; Mulier et al., 2021; Mustikawati et al., 2022), which can increase viewer interest and engagement with the message conveyed in the video (Mulier et al., 2021).

TikTok's features help users facilitate video production (Kaye et al., 2021; Zeng et al., 2021; Zeng & Abidin, 2021) and provide a space to interact creatively with social and political topics (Hautea et al., 2021). Users express unconventional perspectives on complex subjects using creative features like hashtags, "For You" pages, memes, lip sync, duets, emojis, and text stickers. Hashtags are the keywords employed to categorize content and enhance visibility, whereas the "For You" page curates videos according to preferences. Memes are humorous videos or images representing a common meaning. Lip sync entails mouthing along to pre-recorded audio, and duet facilitates split-screen collaborations. Emoji and text stickers permit users to embellish videos with expressive icons and text.

These features have led to the creation of a unique and ever-evolving language, contributing to its distinct culture. For example, users often use well-known melodies, like the Titanic movie soundtrack intentionally played poorly on a recorder, to highlight unexpected situations or product failures humorously. Among TikTok users, the term "*Boomers*" refers to the people with a conservative and resistant-to-change mindset primarily associated with older generations (Zeng & Abidin, 2021).

In some product videos, phrases like "TikTok made me do it" or "TikTok made me buy it" signify actions or product purchases inspired by someone else's content. In videos with these phrases, users share their pleasure and satisfaction from adopting these recommendations, emphasizing how TikTok content drives them to try new activities, change personal styles, purchase new products, or adjust their habits. For instance, a popular TikTok audio says, '*Show me the life hack you randomly saw one day that is now an unconscious standard practice in your life.*' By using this audio, users share

their life hacks, practical actions, and tips (See: Foodies, 2021).

A prevalent video genre on Tik-Tok involves content creators sharing their creative and do-it-yourself (DIY) projects (Zeng, 2020). The remarkable feature of these crafting videos lies in their dual functionality: they serve as a form of artistic expression for the creators while guiding fellow users (Zeng & Abidin, 2021). Moreover, design professionals and small business owners are interested in sharing content on TikTok. By sharing their expertise, they inform and inspire a diverse people of enthusiasts.

Big companies engage with TikTok and its users. In a noteworthy case from November 2021, after a snowstorm in Canada, TikTok was flooded with videos about frozen Tesla car doors (Figure 1). These videos went viral, attracting news coverage (e.g., Serna, 2022; Bennett, 2022). Followingly, Tesla responded by releasing a software update with an automatic door-opening feature, particularly stating that it would be helpful if the door handle is frozen. This notable example demonstrates that TikTok is effectively used as a platform for users to voice their concerns to companies. The platform's impact may pressure companies to respond to the calls from these collective videos.

TikTok emerges as a multifaceted platform where various actors, including everyday users, designers, and companies, interact to create content and share knowledge about products. Moreover, this interaction extends beyond the platform itself, thereby impacting the design dynamics in the real world where companies take action according to complaints in videos and individuals create their small businesses and join the production. This dynamic ecosystem creates an environment that encourages the exploration of different ways to engage with products, making TikTok a versatile platform for studying user culture and its intersection with broader societal issues (Hautea et al., 2021).

## 4. Sharing action on SM as a tactic

In the previous section, TikTok was described as an SMP that provides suitable conditions and opportunities for users and other actors in the design field. In this section, we will evaluate the concept of sharing from the perspective of its contributions to empowering users.

Active users have gained a new dimension through sharing their actions on SMPs. Through sharing, users extend their actions from an individual scale to a collective scale, taking them from their personal spaces to platforms accessible to all. Sharing opinions and inquiries on products plays a significant role in raising awareness of others and encouraging them to take action. Thus, sharing is perceived as a tactic that embodies resistance and collaborative action against the dominance of authoritative figures in design.

The term tactic is adopted from the dichotomy of tactics and strategies developed by Michel de Certeau (2004). Strategies refer to the actions undertaken by those in positions of power, characterized by their ability to control and regulate the actions of others. In contrast, tactics are the actions of individuals and groups who operate within the constraints set by those in power, which are a form of resistance against the dominant strategies (De Certeau, 2004).

Sharing empowers users by disseminating their actions and thoughts to a broader audience. It is a higher-level tactic that fosters knowledge exchange



**Figure 1.** *Video examples of the frozen doors of Tesla vehicles are demonstrated (Left to right: Carconfections, 2021; Ddcustomz, 2022).*

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among individuals governed by those in power. The process of knowledge sharing is a two-way endeavor involving both the acquisition and construction of information to make knowledge accessible and robust (Okyere-Kwakye & Nor, 2011). The value of knowledge tends to flourish through sharing (Corvello et al., 2014). Any form of engagement with shared content on SM, such as viewing, creating, uploading, commenting, liking, tweeting, posting, and resharing, not only enhances its value but also generates new ones (Arvidsson & Colleoni, 2012).

Through sharing knowledge on SMPs, users enhance their creativity and inspire others. They can transform their creative attempts into profitable enterprises. Sharing creates a stage for visibility, allowing them to reach designers, companies, or communities. Most significantly, it creates an autonomous area at the micro level, separate from design authorities, where users can independently exchange knowledge.

Overall, the user-centered design literature abounds with studies dedicated to formulating enhancing strategies to empower and engage users in the design process. As user-centric approaches continue to pave the way for empowering users in more democratic practices, design research seeks ways to capture creative and innovative ideas emerging in everyday use. As a promising SMP, TikTok abounds with amassing information that users share their engagements with products. However, the platform's potential in design research is only just beginning to unfold.

This study attempts to establish a perspective on the sharing action of videos on TikTok, carried out by active users. Through thematic categorization of diverse video content, the study aims to enhance the clarity, recognition, and visibility of videos created within TikTok's unique verbal and visual language—distinct from conventional design terminology and literature. From this point onward, the study addresses the research question:

- How do users express their experiences of active product use in TikTok video posts?

## 5. The study
The study is constructed on the examination of the videos shared by users on TikTok, which contain user actions. Video content analysis was chosen as the method of the study, which seeks to ultimately comprehend the video by examining its fundamental content (Li, 2009). It aims to translate audio and image elements into semantically meaningful representations by extracting structural and semantic content (Hauptman, 2009).

Drawing on the video content analysis guides in the literature, we have designated four major phases of our study (Table 1). Due to the presence of implicit meanings such as sarcasm, satire, and indirect references in the videos, analyzing with computer support was anticipated to result in data loss. Therefore, the authors manually conducted the data collection, analysis, and coding stages.

In the first phase, a SMP has been chosen for data collection. The most well-known video-sharing platforms— YouTube, Instagram, and TikTok— were considered for their capacity to encapsulate visual, auditory, and textual data, thus offering a rich source for data collection. Among these, TikTok has been selected as the most suitable platform for the research. YouTube, characterized by its horizontal, longer, and structured video formats, often requires studio production or professional equipment (Arkan, 2017). This formal approach to video production could potentially overshadow 'ordinary' user experiences and spontaneous sharing that are typically encountered in daily life, which has led to the exclusion of YouTube from this study.

The vertical video format promotes instantaneous video creation, sharing, and consumption (Canella, 2018), which is why vertical video-sharing platforms, especially Instagram and TikTok, were assessed for research relevance. Instagram holds one of the largest market shares in social media advertising (Robbins, 2023), possibly increasing the volume of advertorial content within the data set. More-

***Table 1.*** *The phases of the study.*

| Phase | Code | Explanation |
|---|---|---|
| Framing the Video Search | Framing | Framing the data will be collected |
| | Selecting Keywords | A balanced selection of everyday objects |
| Collecting videos | Social Media Platform | TikTok |
| | Searching videos | Using TikTok search engine<br>Searching videos with each keyword<br>Watching the first 100 videos suggested by the algorithm |
| | Selecting videos | Selecting videos related to the concern of the study<br>Taking notes of initial ideas |
| | Storing videos | Downloading selected videos<br>Giving each video a number<br>Saving the textual info of videos on Excel |
| | Reselecting videos | Selecting a representative example among similar videos<br>Eliminating the videos from the same creator |
| Data analysis | Preparation of coding template | Generating the initial codes based on the literature<br>Refining the codes and preparing a template |
| | Analysis | Watching and re-watching each video<br>Filling each unit in on the coding template |
| | Thematization | Re-reading coding template for searching potential themes<br>Collating codes into potential themes<br>Selecting particular topics as themes<br>Reconsideration of themes<br>Naming themes |
| Findings | Evaluating the findings | Evaluation the findings<br>Selecting vivid, compelling extract examples<br>Relating the findings to the literature<br>Discussion |

over, user feedback indicates that the content on Instagram and TikTok is remarkably similar (Koetsier, 2020). Therefore, TikTok, with its longer history in short video formats, is likely to provide more accurate insights when videos are evaluated within a more established cultural context.

Then, we define and frame the videos to be included within the scope of the study. The limitations and criteria set for the videos are as follows:

- The video has to be publicly shared on TikTok and still remain accessible.
- The individual who shares the video must also be its creator. Videos shared by channels that repost compilations from other creators were excluded.
- The video's content must revolve around a topic related to a product or design.
- Physical interaction between the user and the product was not obligatory. The absence of physical interaction in the video does not necessarily indicate a lack of prior engagement with the featured product.
- The video content must implicitly or explicitly depict a form of active engagement as defined in Section 4. Product reviews and explicit commercials are excluded.

The second phase involves systematic searching and selecting the videos on TikTok related to the topic. The knowledge transfer among users only occurs if the viewer encounters and watches the video. Based on this condition, a searching phase has been developed based on mimicking how an ordinary TikTok user uses the application. To encounter the videos, we searched for specific keywords on TikTok and watched the suggested videos by the algorithm.

During the keyword selection, first, we tried keywords related to the topic of active users, such as "making," "DIY," and "crafting." However, this approach might limit us by directing only pre-defined actions in the literature, and we may miss innovative and unique ones. To prevent this, we decided to use everyday objects as keywords and ultimately selected 40 of them for the search (Table 2). While selecting the everyday objects, we considered having a balanced selection from different product groups and choosing commonly used ones.

After that, each keyword was entered into TikTok's search bar, the first 100 videos suggested by the algorithm were watched, and videos that might be within the scope of the study were noted and downloaded. This phase was conducted in 19 sessions, each lasting approximately 2 to 3 hours. A total of 117 videos were gathered, and then they were reviewed to refine the selection. Similar videos were identified, one representative example was chosen, and videos from the same creator were excluded. Consequently, a final set of 79 videos was chosen for analysis.

Data-driven, theory-driven, or mixed approaches can be employed while preparing the coding template.

In a data-driven analysis, categories and themes are derived directly from the data, whereas a theory-driven approach addresses the data through existing categories based on a theory (Green, 2004). The coding template was prepared using a data-driven approach. Firstly, the template includes the video's textual details, such as the creator's name, date, link, video descriptions, and hashtags. The rest of the coding template consists of units related to the research question. These include defining 'active use' as observed in the video, determining whether the relationship between the product and the user is visually evident in the video, and describing how active use is shared in the video. Within these units, as Krippendorff describes (2018), space is provided for 'multi-valued data', which allows for multiple explanations and interpretations (p.220).

The analysis proceeded according to the six-phase method outlined by Braun and Clarke (2006). The analysis was at the message level, focusing on the semantic combination of various elements, such as audio, text, images, and emojis, all collaboratively conveying a message or narrative within each video. So, the videos are evaluated holistically rather than isolating them into individual scenes or components. First, for familiarization with the data, we watched and re-watched each video and simultaneously filled out the coding template. After that, initial codes were generated by coding interesting features of the data, and we searched for potential themes by collating codes. Then, we selected particular topics as themes and reconsidered them. As the last stage of thematization, the themes were named and defined by refining the specifics of each theme. The final

**Table 2.** *List of everyday objects used as keywords.*

List of everyday objects

| Drill | Ring | Pencil sharpener | Kite | Screwdriver |
|---|---|---|---|---|
| Air purifier | Coffee table | Lemon squeeze | Pan | Luggage |
| Sofa | Straw | Sun glasses | Ball | Umbrella |
| Light bulb | Toilet paper | Vacuum cleaner | Dish dryer | Computer |
| Scooter | Plastic bag | Toothbrush | Toaster | Alarm clock |
| Kettle | Leaf blower | Shower curtain | Saw | Nail clipper |
| Jar | Package | Vase | Bottle cap | Car |
| Book | Bicycle | Television | Mouse | Oven |

phase involves evaluating the findings by selecting vivid and compelling extract examples. 'Keyframes' (Li & Kuo, 2003, p.11) that represent the content were selected from the sample videos. Considering the challenges intercoder reliability presents in evaluating the depth of qualitative interpretations and pattern identification (Braun & Clarke, 2013; Krippendorff, 2004; Loffe & Yardley, 2004), we did not implement intercoder reliability checks. Instead, the rigor of our results was ensured through in-depth engagement with the topic and collaborative data interpretation by the authors, as suggested by Yardley (2008). It was grounded in the authors' long-term experience as active TikTok users and ongoing independent observations of TikTok's cultural trends since 2020.

## 5.1. Findings

In this section, the findings and themes are presented alongside video examples and evaluated using the existing literature.

We observed that most of the videos have positive attitudes. While sharing their thoughts, content creators use informative and explanatory language. A few videos captured protests and aggressive attitudes. TikTok's entertaining culture has influenced most videos, as they contain fun elements.

Specific keywords like "tip," "lifehack," "trick," and "useful" were frequently used in the videos and their explanations. This suggests that these users are conscious of sharing information that could be useful to others.

The study does not primarily examine the subjects focused on in the videos. However, a strong inclination towards topics like sustainability and eco-conscious living caught our attention. Many related concepts, such as "eco," "eco-friendly," "zero-waste," "thrift," and "dumpster-diver," were included in the videos' hashtags. This accumulation signifies the presence of a specific cohort of users on TikTok who have cultivated and incorporated a sense of environmental awareness into their relationships with products.

We came across some unique designs/objects that are off the market. Since creating a unique product is di-

rectly linked to user innovation and creativity, we have included videos featuring these objects in the study. As Shah (2005) states, *'innovations embodying novel product functionality tend to be developed by users'* (p.340). Creating these innovations requires a great deal of information accumulated by users through use. This unique knowledge unlocks previously unexplored possibilities beyond manufacturers' predictive capabilities (Shah, 2005).

The unique objects in the videos are a bookshelf guide, pet walk assist, escalator cleaner, quit-smoking aid, shampoo dispenser, and automatic bug catcher (Figure 2). It can be discussed that they have emerged due to a certain amount of interaction with the issue and an accumulation of inquiries. The creator of the escalator cleaner has most likely thought about the time-consuming nature of manually cleaning escalators (Figure 2). Similarly, the shampoo dispenser was probably created as a result of struggles with extracting the last bit of shampoo (Figure 2). Admittedly, the background of these innovations within these videos remains elusive; however, they reflect that they are the embodiment of accumulated knowledge and inquiries in one way or another.

From the analysis of the videos, we derived six primary themes that characterize how users share their actions on SM: Exposing, suggesting, exploring, creating, testing, and narrating.

### Exposing

The "Exposing" theme comprises videos in which issues related to design or products are verbally exposed, critiqued, or visually demonstrated. This category, encompassing 17 videos, constitutes the second-largest cluster of the analyzed videos. In these videos, we encountered issues addressed by users, such as bad design decisions, functional failures, dishonest shop policies, product durability, low product quality, problematic user behavior, and misleading packaging.

The high amount of this type of video can be attributed to the fact that the actions in the videos, like exposing or criticizing, are primarily at a rhetorical
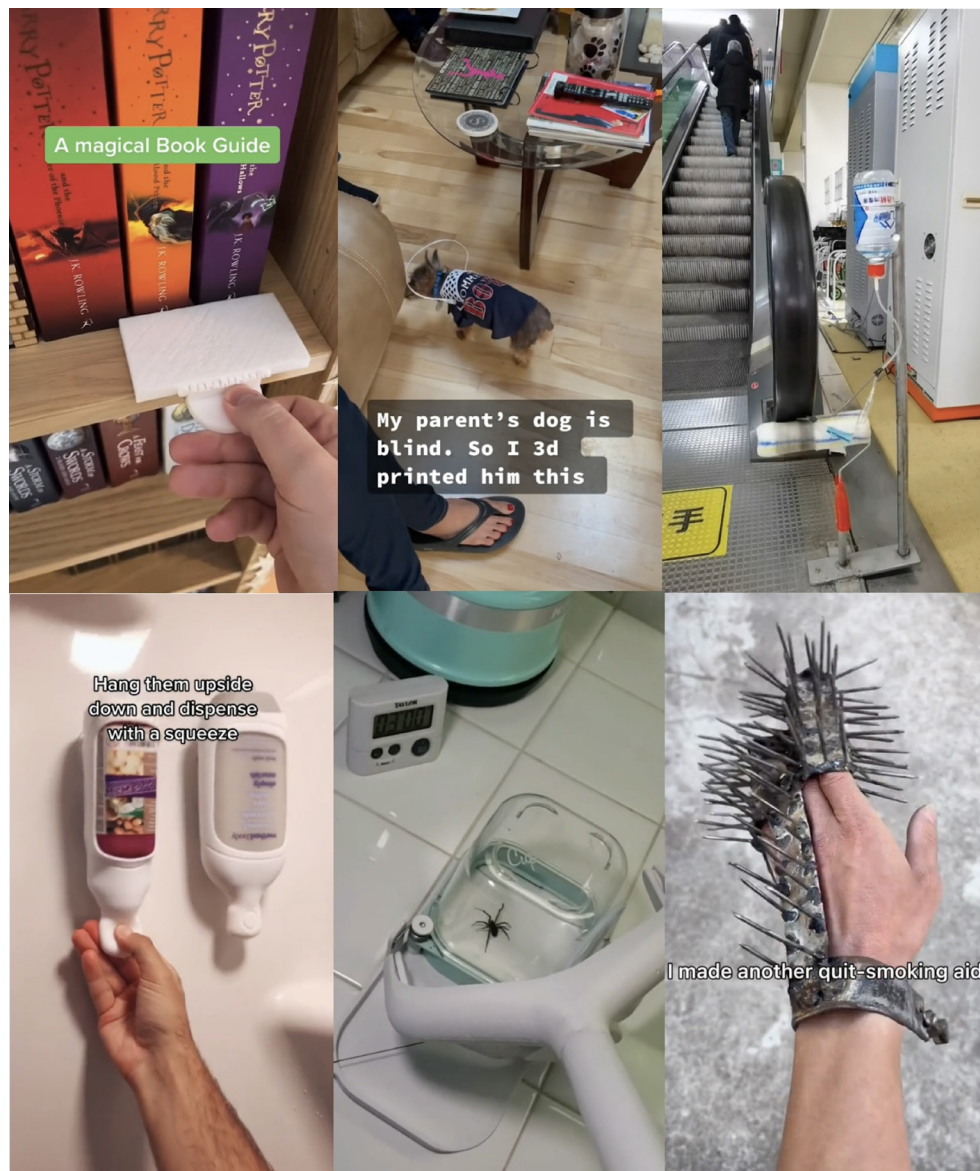
*Figure 2. The unique objects found in the videos (left to right: bookshelf guide, pet walk assist, escalator cleaner, shampoo dispenser, automatic bug catcher, quit-smoking aid).*

level and often require minimal effort. Additionally, the production of this type of content is relatively straightforwardly, as it can be recorded simultaneously within the situation, involving no complex editing or recording stages. As illustrated in the left example (Figure 3), a content creator shows an allegedly eco-friendly paper package containing a hidden plastic package. In the right example (Figure 3), the content creator highlights the sloppy details in the production and assembly of a Tesla brand vehicle.

Nonetheless, sharing product inquiries is significant within the study's context. These videos serve as thought-provoking and inspiring content for viewers, encouraging them to take action and motivating them to change. Moreover, these videos provide large volumes of data that can serve as valuable research resources to gather user opinions. As mentioned in Section 3, the incident of the frozen Tesla door is a prime example of how these critical posts can capture companies' attention and force them to take action once they gain adequate visibility.

**Suggesting**
The "suggesting" theme comprises videos where users propose an alternative product, product feature, or way of use instead of the usual or common ones. A total of 13 videos have been included in this category. Compared to the "exposing" theme,
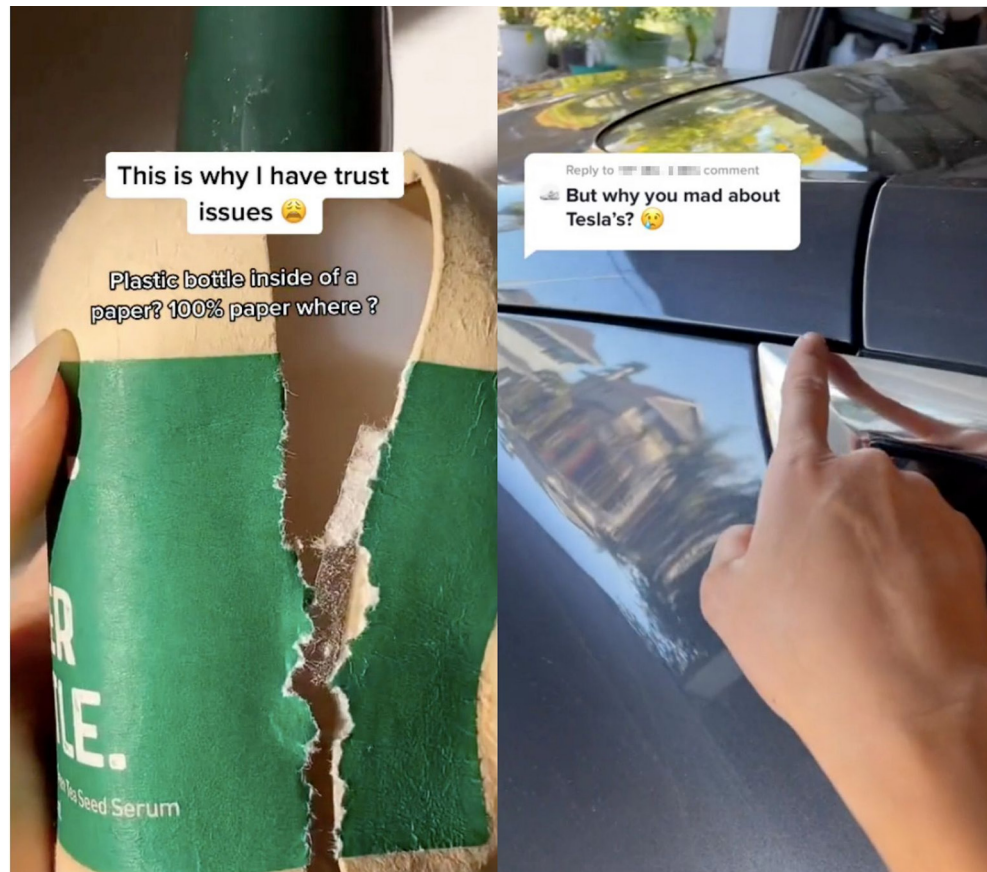
*Figure 3. Content creators expose problems of products (left to right: Hygr, 2021; Tran, 2021).*

users are not only sharing critical thoughts or observations but also providing solutions to these issues.

We realized the suggestions primarily have two purposes: facilitating use or offering a more sustainable option. For example, a content creator recommends a brand of toilet paper made from recycled materials as a sustainable alternative to conventional options (See Morgan, 2021). As a facilitative example (Figure 4), a content creator suggests an uncommon way to strain pasta by placing the strainer into the pot instead of pouring it into the strainer (See Foodies, 2021).

Notably, some of the videos carry suggestions from diverse cultures and countries. For example (Figure 4), a content creator demonstrates a different method of opening condiment packages from Japan as a more efficient and hygienic alternative. These videos hold the potential for transferring solutions from one local context to another. As local solutions are shared on global platforms, they become accessible and adoptable by those with similar issues.

## Exploring

The "Exploring" theme comprises videos where users engage in verbal or physical exploration. The users in most of these videos do not provide definite and clear opinions. Rather than sharing statements, the focus of these videos is on experiencing and exploring. A total of 10 videos have been included in this category.

The exploration can be either at a verbal or physical level. Some of the verbal explorations ask viewers their opinions. Confusing signs on products or insufficient information about their use are the main reasons for the creation of these videos. For example, a content creator discusses the confusing labels on salt and pepper shakers:

> "[The first shaker] says, 'You are the salt' [and the second shaker says] 'to my pepper', and I was getting ready to put the salt in them … But then, I realized that I don't know which one to put the salt in. Because this one says, 'you are the salt', and if these two shakers are talking to each other … then this one goes 'to my pepper'. So, this one is saying that it is not salt. And this one [the

*Figure 4. Users suggest alternatives as a replacement for commonly known (left to right: Foodies, 2021; Jesse, 2021).*

other one] says it is the pepper. So, they are both peppers? … Is this one supposed to be a mixture of salt and pepper? … Or is it just it has the word 'salt' on it, so I put salt in it? … I have no idea what's going on" (Burns, 2020).

We observed that most of these physical explorations tend to challenge and push boundaries. In some videos, pushing boundaries refers to testing a product's endurance limits, endeavoring to optimize another product's efficiency, or simultaneously using an excessive quantity of a product. Mazé and Redström (2009) indicate that the attempt to push the design limits contributes to design development. In the video on the left, the content creator combines two axes, and in the second one, the content creator attempts to plug 100 chargers into a phone simultaneously (Figure 5).

Arguably, these kinds of trials differentiate from the approach an expert or designer would typically try. The function of these objects is to stimulate thinking and create a discussion rather than facilitate daily life (Dunne, 2008; Malpass, 2016). From this perspective, these trials may produce knowledge and inspire designers by trying the unthinkable and unreasonable.

**Making**
'Making' videos focus on processes rather than products. The distinct feature of them is the visible act of making, which is integral to the message conveyed. The making process either transfers an idea or is featured as part of a solution. They form the largest cluster with 21 videos. The scale of processes ranges from small projects using everyday tools in an ordinary home to those requiring expertise and professional equipment, and changes in products vary from minor interventions to creating new products.

Some of the motivational reasons in the videos are enhancing the aesthetic value, upcycling, replicating a highly

**Figure 5.** *Examples of 'pushing the limits of design' (left to right: Witzling, 2022, l7or_ff_, 2021).*

prized product, making an eco-friendly product, and protesting. In the video shown on the left in Figure 6, the user introduces a helpful trick for sewing with fiber material. They suggest attaching a piece of straw to the sewing machine's presser foot to prevent the fiber from getting stuck. This adjustment enhances the machine's efficiency and expands its contexts of use (Figure 6).

While many making videos are presented with a positive attitude, some videos carry a protest-like sentiment. In the middle example (Figure 6), the content creator replicates an expensive coffee table at a more affordable price. In the right example, the content creator mockingly criticizes the inability of the round-shaped robot vacuum cleaner to clean corners by cutting the vacuum cleaner and changing its shape to be more angular (Figure 6).

**Testing**

'Testing' video content includes comparing two or more products based on specific features through testing. They compare and test products in various aspects, such as price, functionality, durability, quality, noise, and speed. These videos test different products within the same category, either in a controlled environment or the real world. A total of 5 videos are included in this theme.

We question the contribution of this type of content to their viewers. Products are often tested based on a single criterion. For example, the shredding speed of expensive and cheap paper shredders is compared (Figure 7). Obviously, a single criterion does not provide enough data to determine the better one. Nevertheless, this video may indirectly inform its viewers that a higher price does not always indicate that it is a "better" product. In another example, a content creator ranks teapots based on their flow quality (Figure 7). This video might also indirectly highlight a product feature that might easily missed but significantly affects users' experience.

**Narrating**

'Narrating' videos where users share their product experiences in a narrating format, often including scripted

**Figure 6.** *The video examples contain making processes (Left to right: Meza, 2022; Chantellneale, 2021; Murafa_, 2021).*



**Figure 7.** *Testing products (Left to right: (left to right: Whathowtry, 2021, minon_1, 2021).*

scenarios and acting. Instead of a direct demonstration or explanation, users express their opinions more implicitly or indirectly. A total of 13 videos have been included in this category. Narration is observed to be carried out in two different ways: through reenactment and verbal storytelling.

Through reenactment within a structured scenario, content creators address the issues that bother them. For example, a content creator criticizes the lack of new features in the new models of iPhones, except for adding a new camera (Figure 8). In the video, the content creator pretends to be an Apple designer and acts like designing a newer model of iPhone on a computer (See: Androshkatv, 2021). The user conveys criticism by adding an absurd number of cameras to the so-called new model iPhone. Although a direct user-product relationship is not shown in the video, the user's discomfort or criticism is conveyed through satire.

We encountered the use of analogy in a video. A user is bothered by their computer's loud noise while starting up. The loud sound is emphasized by analogizing it to a plane take-off. In the video, the user puts on pilot goggles and gloves and pretends to be taking off a plane while starting his computer (Figure 8).

TikTok's duet feature is used in verbal narrating videos to react toward others' video content, which may be someone else's or one of their own previous videos. For instance, a content creator criticizes another person's video in which they unpack newly purchased items and place them in different containers. The content creator argues that using storage containers for adequately packaged food is pointless and harmful to nature (See: Ohthatskreed, 2022).



***Figure 8.*** *Reenactment in videos (Left to right: Androshkatv, 2021; Klemenful, 2021).*

Video sharing as a user tactic of empowerment: Analysis of social media videos featuring users' actions on everyday objects

## 6. Discussion

The video types corresponding to the "exposing" and "suggesting" themes are believed to be relatively easier to recognize. Since products and brand names occasionally appear in the videos, data can be easily gathered while focusing on user opinions on specific products. In contrast, narrating is thought to cover the types of videos design researchers are most likely to miss while searching for user opinions on SM. This is because the messages in these videos are mostly implicit and conveyed humorously or ironically. They often contain an entertainment factor, and it appears that their primary purpose isn't necessarily to reach designers or producers. The notable absence of direct mentions or hashtags related to the brand or producer in these videos may reduce the visibility of potentially valuable product-related messages for designers. However, the entertainment element is typically linked to common product issues, suggesting that these videos' popularity could stem from the shared experiences they highlight. If so, the messages within these videos might reflect scenarios widely experienced by a broad user base, making the information even more valuable. Our study aims to increase the visibility of these informative videos. We suggest that the method used in this study can be adapted to focus on specific product types or groups, which may enable designers and design researchers to uncover similar videos that contain valuable insights relevant to their work.

Strikingly, we recognized that a significant number of videos focused on other users' behaviors or use patterns. User-centered approaches do not adopt a critical attitude toward the users' opinions. Especially in methods like brainstorming, even seemingly absurd ideas are embraced and welcomed with the belief that they may contain valuable information. On the contrary, these videos contain direct and explicit critiques aimed at other users.

We suggest that videos in which users critique each other could contribute to design research from different perspectives. Peer criticism is highly appreciated in design education for its role in enhancing learning and knowledge transfer (Boud et al. 1999). Integrating peer criticism into user-centered design might open up innovative approaches and methods.

Moreover, these organic criticisms already circulating among users on the internet may change users' behaviors without the need for directing or explicit instructions. The widespread use of hashtags such as 'TikTok made me do it' or 'TikTok made me buy it' indicates the videos' influential capacity over users' thoughts and behaviors. While this study's observations were confined to video content, future studies could explore how these videos affect users' everyday lives, contributing to the literature on user behavior.

Additionally, most of these peer criticisms involve detecting common but unnoticed behaviors. For example, a content creator criticizes environmentally conscious users who want to reduce their plastic bag consumption but constantly forget their reusable bags at home. Hence, they end up buying new ones. In another example, a content creator detects behavior in users who want to switch their sanitary products to zero-waste alternatives, immediately discard the products they already have, and purchase new ones. In the video, the content creator advises that finishing the products that already have is more ecological behavior. These videos may give design researchers valuable insights, offering a unique type of user interaction that differs from what design researchers are used to.

In essence, user-centered design approaches typically involve asking users to experience products in controlled environments and time frames, with experts observing these interactions or soliciting users to share their thoughts and experiences. However, videos containing active use represent organic expressions of thoughts and opinions, formed in the natural course of daily life without any tasks assigned by experts. The method used in this study suggests an adaptable approach for identifying such videos. Further, designing a user-centered method that utilizes these videos for product development and evaluating its outcomes could be an area for further research.

On a public platform like TikTok, the veracity and reliability of the information remain unverified, making it challenging to discern accurate content. The spread of incorrect or misleading information is a commonly debated issue in social media theories. Additionally, commercial content is intentionally presented to look like user-generated content, affecting the trustworthiness of user-generated content. Therefore, instead of accepting these videos as absolute truths, designers can employ different research methods to refine and even enrich the insights gathered from the videos.

## 7. Conclusion

This paper begins with an overview of user-centered design approaches, highlighting the importance of capturing organic innovation discoveries during product use. By focusing on TikTok's role as a platform for creativity and knowledge sharing, we discuss how users have become empowered to create and share opinions. We propose sharing videos on TikTok serves as a tactic, a form of resistance against authoritative figures in design and contributes to the users' empowerment.

Through sharing on TikTok, users can display their creativity and inspire others to reconsider their interactions with everyday objects and products. They also have the potential to transform their creative endeavors into commercial and monetizable ventures. Additionally, sharing allows them to be visible and reach designers, companies, or communities. Most importantly, at the micro level, it creates an independent space, separate from the prevailing design authorities, where users can freely exchange knowledge.

In this study, we aim to categorize and understand the various types of videos in which product users share their actions on TikTok. Through video content analysis, we examined 79 TikTok videos and identified six distinct themes: exposing, suggesting, exploring, making, testing, and narrating. By examining TikTok videos, we emphasized that these videos have the potential to serve as a large data pool where users share various ideas that emerge from their daily routines. Through thematization, we aim to enhance the clarity, recognition, and visibility of these videos, which use a language far from conventional design terminology, for design researchers.

The six themes obtained showed us that users share a broader range of actions, which was previously addressed in studies on knowledge sharing. Users contribute to knowledge production in a wide range of ways, from sharing personal product experiences verbally and criticizing each other's usage patterns to experimenting that pushes the boundaries and tests what designers would not usually try. Most importantly, we observed that many video contents, which do not seem related to design and videos created for entertainment, may contain implicit meanings and can also hold valuable information about design and usage. The videos criticizing the other users' behaviors reveal common yet unnoticed use patterns. This peer criticism has the potential to offer valuable insights for design researchers.

This paper does not propose that TikTok videos generated by users be accepted as pure data or primary sources for user research. However, they have the potential to serve as a medium for triggering questions and discussions to which various user-centered techniques can provide answers.

To conclude, user-generated content offers significant advantages for user research, providing rich data encompassing diverse user groups, usage contexts, and cultures. This content is not only convenient, accessible, and abundant in quantity but also may provide access to unique scenarios and narratives that might remain elusive through traditional user research methods. The use of this platform in user research can be enhanced by becoming familiar with its unique language and changing our evaluation of product uses from a '*how*' rather than a '*who*' perspective.

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