

Making crafting visible while rendering labor invisible on the Etsy platform

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ABSTRACT

Historically, crafts have been associated with women's small-scale creative production in the home, equated with hobbies or amateur production, and devalued in comparison to both art and industrial production. During its early years, Etsy was seen as a champion of "handmade", bringing visibility to crafts and providing economic value. This paper presents results of a qualitative study with 18 small online sellers of Etsy platform. Our study shows that Etsy's sociotechnical design results in a high burden of invisible labor for sellers, including categories of labor not replicated by other online platforms. These new categories include negotiation and articulation work around defining and defending "handmade" products, understanding one's intellectual property and how (and whether) to defend that IP elsewhere on the platform, understanding working of platform algorithms and adapting to changing platform regulations. Our findings provide new ways to frame the challenges faced by producers/sellers on emerging marketplace platforms.

CCS CONCEPTS

- Social and professional topics → Copyrights; Trademarks; Women;
- Applied computing → Online shopping: E-commerce infrastructure.

KEYWORDS

Invisible work, Crafts, E-commerce, Gender, Intellectual Property, Handmade, Algorithms, Policies, Marketplace

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1 INTRODUCTION

The proliferation of technology and networks is changing the nature of work. Technology has not only created new types of work (like blogging, content moderation, etc.) but also created platforms

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that act as market intermediaries matching supply and demand for resources (e.g. Uber, Airbnb), labor (e.g. AMT, DoorDash, UpWork), and products (e.g. Etsy, Amazon). Etsy, where artists and crafters sell handmade and vintage products and supplies, is one such platform which is considered a source of (full-time) employment, and entrepreneurship, especially for women and those affected by fluctuations in employment opportunities. Etsy has created various types of indirect employment for a vast majority of sellers and their supply chain through mediation between buyers and sellers [2]. Various technological, historical, and cultural changes combined to enable the sale of craftwork on Etsy's marketplace including internet-enabled social communities contributing to the "*making and doing culture*" and thus returning crafts to the mainstream [32]; historical, and cultural changes leading to the acceptance and success of crafts as a form of paid labor; and the Arts and Crafts movement lending a utopian sense to the practice of crafts where labor is enjoyed and fair [29]. In the year 2020, when employment rates and in-person buying and selling had been negatively affected by COVID lockdowns, Etsy claimed to be an income source for many [20] [48]. For the year 2020, Etsy reported significant growth by doubling buyers to a total of 80.9 million, along with 4.1 million sellers and 87 million items for sale [13].

However, the technological changes enabling online exchanges such as those on the Etsy platform have also contributed to the invisibility of work. Invisible labor is defined as "*activities that occur within the context of paid employment that workers perform in response to requirements (either implicit or explicit) from employers and that are crucial for workers to generate income, to obtain or retain their jobs, and to further their careers, yet are often overlooked, ignored, and/or devalued by employers, consumers, workers, and ultimately the legal system itself*" [42]. The term invisible work was coined by Daniels in the 1980s in the context of women's domestic work [9] but since then it has been applied to many contexts such as service work of employees in airlines and hotel industries [23], care work by nurses in healthcare [1], and in the invisibility of work created by technology such as for crowd work [35] or gig workers [44], freelancers [47], digital paid and unpaid labor in user-generated content [22] etc.

Our work addresses the question: What kind of invisible work is performed by artists and crafters selling on Etsy to maintain their membership on the platform? This question is important because Etsy represents what we refer to as a *double whammy of invisible work*. Etsy's main proposition is the sale of handmade arts and crafts. Historically, women's small-scale creative economic activity in crafts has been conceived as an amateur production, invisible,

mute, and outside of the sphere of mainstream commercial activity and having far less economic worth compared to large scale mass production [32] and art. Markowitz [34] reflects on the dual treatment of arts and craft historically despite their grouping together by stating "*art has had a positive connotation that craft lacks*" and points out the criticism behind this approach: "*this difference in evaluative meaning reflects our culture's elitist values: what white European men make is dignified by the label 'art', while what everyone else makes counts only as crafts*". A majority of Etsy's sellers are women (83% [41]) whose work has been rendered historically invisible in domestic and professional spheres due to socio-cultural mechanisms [21]. Moreover, Etsy is a technological platform enabled by web 2.0, which has provided a renewed momentum to craft communities by equipping them with a tool to make their craft visible [16]. But Etsy's technological nature may also contribute to the invisibility of the work of online sellers through socio-spatial [21] and abstraction mechanisms [49] resulting from the judgments made about *work* and indicators used to assess performance when work is performed at a distance from those measuring performance.

To answer the question above, we conducted a qualitative interview study with 18 Etsy sellers. We found that Etsy sellers have to engage in three broad categories of invisible work. The first category includes negotiation and articulation work to define and defend the handmade business. Sellers work to manage their shops, create listings, manage customers, differentiate themselves from resellers, and identify and report resellers posing as handmade businesses. Second, sellers perform uncompensated work to understand IP rules that apply to their business, identify infringements of their IP, negotiate with infringers and take measures themselves to avoid infringing on someone else's IP. Third, sellers have to keep track of Etsy's frequently changing policies and working of Etsy's algorithms by consulting with other sellers and online forums. Moreover, they have to engage in alternate channel development to reduce dependency on Etsy due to the vagueness of their policies.

This study makes the following contributions: 1) It adds to our understanding of the dynamics of creating invisible work, including the invisible work artists and crafters selling online do to understand IP laws and their applicability to managing a handmade business, and 2) it adds to the literature on the design of socio-technical systems by demonstrating that Etsy contributes to invisible work for its users in multiple ways: first, it displaces the work to appear handmade onto sellers; second, it creates 'articulation work' for sellers in the absence of clear policies, and lack of algorithm transparency; third, it creates additional burdens on sellers via abstraction of work due to misalignment of the indicators used for algorithmic management with the nature of handmade business.

2 RELATED WORK

2.1 Invisible Work: Mechanisms and Ecology

The word labor has multiple meanings. Labor may refer to work generally or to tasks that are performed. Visible labor is identifiable and overt, performed in physical workplaces, recognized by management, employees, and consumers, paid, directly contributes to profit, and has been long-term, full-time, and regulated by formal laws [42]. Theoretical and analytical works have discussed the recursive nature of visibility and invisibility working together in

an ecology [49], the socio-spatial, socio-cultural and socio-legal dynamics causing invisibility [21] and the legal implications of invisibility of work [42]. Collectively they have argued that whether work is visible or invisible has implications for regulations, compensation, social justice, and socio-technical system design.

Hatton [21] argues that the work is made invisible through three intersecting sociological mechanisms- socio-legal, socio-cultural, and socio-spatial. Socio-legal mechanisms render work invisible because it is not defined as work by law. Socio-cultural mechanisms include work that is considered a natural skill i.e. a skill associated with a person's natural ability is often overlooked as work. For instance, female nurses caring for patients or women taking care of children often have their effort devalued because of socio-cultural associations of women as "natural caregivers". Socio-spatial mechanisms render work done away from socially constructed work sites invisible.

Hatton points out that these mechanisms can overlap and any work under consideration may be rendered invisible by more than one of these mechanisms. Domestic work, for example, maybe rendered invisible because it is informal (socio-legal), relates to natural skills (socio-cultural), or is not at a worksite (socio-spatial). Similarly, in the context of digital platforms mediating work, socio-spatial invisibility is further compounded by socio-legal invisibility such as laws not recognizing workers as employees. Some of the socio-legally invisible work is also affected by socio-spatial factors such as being done away from socially constructed work sites (prison work) or having no worksite (digital labor).

Socio-technical systems facilitate the complex task of coordination among people across organizations. The invisibility of work has direct implications for the design of socio-technical systems because invisible work might never be mapped into system requirements and hence never supported by a system. [51] [49]. However, the mapping of 'work' is subject to what is perceived or considered as work within an organization and hence the concept of invisible work becomes relevant in socio-technical system design [49].

Focusing specifically on how the design of socio-technical systems might contribute to invisible work, Star & Strauss [49] introduce several analytical concepts. One such concept deals with the invisibility of the person performing the work, referred to as '**non-persons**' rather than the work itself and displacement of more invisible work onto non-persons as an outcome of the design. Non-persons are created because of a lack of subjectivity of the employee as a person (i.e. not treating employees as humans), almost treating them as machines, leading to micromanagement and even surveillance, with a sense of ownership towards employees' time. Such treatment of employees results from power and status differences between employer and employee. Star & Strauss argue that technology does not make work disappear; it displaces it onto the machine or other workers. When some workers are treated as non-persons, reconfiguration of work through technology can add to the invisible work performed by these workers, exacerbating the social injustices and inequity. Star & Strauss further rely on Goffman's front stage and backstage analysis to discuss '**backstage work**' done in preparation for a visible public performance. Framing certain kinds of work as front stage or backstage determines whether that work will be visible or invisible.

They further point: "as computer use moves from single to group task and communication, the jobs of tuning, adjusting, and monitoring use and users grow in complexity". **Articulation work** in such systems is defined as "*work that gets things back 'on track' in the face of the unexpected, and modifies action to accommodate unanticipated contingencies. It is invisible to rationalized models of work*". While Etsy provides a community for sellers to support each other, Gheitsay et al. [17] challenged the effectiveness of the design of sociability features in the Online Collaborative Consumption community of Etsy by identifying socio-technical gaps. They revealed a need for more nuanced socio-technical features to support the creation of trust such as clarity in relevant rules of behavior, clearly displayed policies, reciprocity, member contribution, social relationships, navigation, and user control among other things.

We add to this body of literature by demonstrating the invisible work created for online sellers due to the socio-spatial and socio-legal mechanisms around intellectual property laws and compliance with platform policies.

2.2 Technology, Invisible Work and People Analytics

Previous works have focused on the various types of invisible work across different technological platforms, online communities and for technology workers [42]. Shevchuk et al. [47] analyzed the invisible work performed by freelance workers in managing schedules, working non-standard hours and being responsive as they work with and report to clients across time zones. Raval and Dourish [44] studied the invisible labor of Uber drivers in managing their schedules to allow working on weekends and understanding the relation of compensation with time. Exploring emotional labor across online communities, deWinter et al. [10] analyzed the emotional labor online community moderators have to perform, while Williams et al. [53] analyzed the racial battle fatigue resulting from the emotional labor performed by social media users of color due to racialized online interactions. Focusing specifically on the invisible labor in gig work or sharing economies, Nemer et al. [37] showed that the community members living in Havana have to perform emotional labor of being hospitable and helpful towards AirBnB guests living in their area even when they themselves are not the hosts to protect Havana's tourist reputation. Raval and Dourish [44] assessed Uber drivers' work on the presentation of themselves and their space to ensure good ratings.

Technology has made it possible for employers and platforms to monitor employees or platform workers creating new types of visibility and invisibility. Cherry [6] argues technology promotes people analytics which is "*the use of data to quantify and analyze traits, experiences, and skills of employees*". It is motivated by the desire to "*promote more accurate measures about quantity and quality of work*" for assessing performance and remuneration as opposed to relying on "*the unreliable and often biased 'gut instinct' or anecdotal observation*". They raise the question "What are the implications for people analytics if only certain parts of *work* are being counted? Could the substance of what counts as part of an analytics program lead to certain forms of implicit bias, which might become a concern of employment discrimination law?". Through measurement and analytics, companies decide what types of work will be visible,

measured and rewarded and what will be invisible, not measured and hence unrewarded.

Star & Strauss [49] also refer to the act of measurement as a contributor to the invisibility of work. They refer to the use of abstract indicators to measure work, progress and productivity in organizations. They argue that even though the language of indicators might appear neutral, they are in fact quite political and depend on the politics of what might count as productive work or creative work. They suggest that researchers should take into account that the use of abstract indicators results in the blurring of work which might not be considered as '*productive*' by corporations rendering such work invisible. In the gig economy, platforms distance themselves from the workers by calling them independent entrepreneurs.

Multiple works in HCI have demonstrated the various ways technology can be used to make invisible work visible. Kow and Cheng [28] demonstrated the use of a peer-complimenting application for workers of a cargo handling company to make work of employees visible who are otherwise hidden from higher management owing to the location of their work. Toxtli et al. [52] used a browser plugin to measure and quantify the invisible work being performed by Turkers in finding jobs and managing their payments. Dhuandiyl et al. [11] used a graphical approach to listing all tasks and plotting them on a paper to demonstrate the invisible domestic work performed by working women in Indian households.

We add to this body of literature by demonstrating the role of the socio-spatial mechanisms, use of abstract indicators and the need for articulation work in the creation of invisible work for online sellers of handmade arts and crafts.

2.3 Critiques on Etsy

To critically analyze the employment potential of Etsy, Krugh [30] argued that while the politicization of crafts has led to the use of individualization of labor to contrast and, therefore, critique mass production, this very individualism limits its political effectiveness. While individuals can buy crafts to express their concerns about the exploitation of labor, the adoption of crafts is constrained by their limited production and utility. On the contrary, regarding Etsy's claim to replace jobs with Etsy-preneurship, Luckman [33] and Cuervo [8] argued that unsustainable crafts are being sold as a promise for employment while maintaining work-life balance to parents, especially women. Removal of women from the workforce alleviates the pressure from contemporary employers to make the much-needed changes (such as childcare provisions) that allow both genders to work. Jakob [25] and Krugh [30] raised concerns about the sustainability of crafts, and hence Etsy's legacy, as crafters are stuck between a capitalistic economy requiring mass production at lower costs and receiving the true value for their handmade goods. Growth in the craft economy is due to the steady demand for craft supplies rather than the crafts themselves. The pressure to make a sustainable living then forces crafters to engage in other activities (consulting, designing, etc.) rather than create crafts by hand [25].

Some ways in which Etsy might leave the less privileged behind is by associating art(ist) with professionalism and training, an identity assumed by the majority, but not all, of sellers as it brings social and economic capital. The majority of sales are also concentrated on a long tail of sellers (a large number of sellers selling in low

volumes) with a majority of featured sellers not reporting Etsy as full-time employment [40]. This is further exacerbated by implicit hierarchies of workers in the visual space and algorithms of Etsy (influenced by Etsy coders) are an area of political struggle for the less privileged groups and have been overcome by the 'Do-It-Together' (DIT) culture of sellers helping each other understand the technicalities [14].

We add to this body of work by confirming the limitations of handmade production and pressure in the form of performance indicators misaligned with handmade production and the effect on the algorithmic visibility of sellers based on misaligned indicators.

3 METHODOLOGY

We conducted a three-month-long IRB-approved study with 18 sellers on the Etsy platform. In this section, we explain the process for recruitment, interviews, and data analysis.

3.1 Recruitment

The sellers were recruited through online communities like Reddit and Facebook. We posted recruitment messages to Facebook groups and subreddits dedicated to Etsy sellers. Since subreddits have strict rules about not posting surveys, we reached out to subreddit moderators and sought permission to post the recruitment message inviting Etsy sellers in the US to participate in an interview. Prospective participants were asked to fill out an online recruitment survey to show interest in participation. All but one of the participants responded to recruitment messages posted on subreddits. The same survey link was posted on each subreddit so we did not have visibility into which subreddit the user saw the message on. The screening questionnaire asked respondents whether they were a buyer or seller or both on Etsy, their age, and gender. Sellers were further asked about the number of years they have been an Etsy seller, number of shops on Etsy, products sold, shop URL, number of hours spent on Etsy shop every week, annual income from Etsy shop, any other e-commerce websites or platforms used for sales, if they have faced any challenges navigating IP rules and handmade policy on Etsy. The participants who filled out the recruitment survey were invited to participate in an online interview over Zoom. 35 sellers filled out a survey but only 18 were interviewed due to no-shows or non-responsiveness to scheduling requests. Table 1 shows a summary of seller demographics who were part of our sample. Our sample included sellers with a wide variety of products such as leather products, map art, jewelry bags, sanitation products, personalized calligraphy, wedding invitations and placeholders, vintage ceramics and cameras, soaps, masks, and dollhouses miniatures, adult entertainment products, etc. Sixteen of the sellers were also buyers on Etsy.

3.2 Interview Guide and Interviews

We conducted semi-structured interviews with 18 Etsy sellers on Zoom. We sought consent from participants for recording the interviews. The interview protocol consisted of four topics. The first set of questions explored the Etsy sellers' journey: years of being an Etsy seller, products sold and product category, motivation for starting an Etsy shop, shop structure and management (members, tasks performed, challenges), other platforms and channels used

for sales and reasons for doing so. The second set of questions explored issues related to the genuineness of handmade products on Etsy and its effect on sellers. These included sellers' understanding of Etsy's handmade policy, clarity of the policy, each sellers' definition of 'handmade', criteria for determining if something isn't handmade, reaction to such listings, challenges for genuine sellers because of such listings, and possible solutions. The third set of questions explored sellers' understanding of and their experiences (if any) with intellectual property issues. These included awareness of Etsy's policies about intellectual property, experiences with or observation of IP violations on Etsy, figuring out possible actions against such violations, the route chosen upon observation of violation, and reasons for it, resulting outcome and sellers' satisfaction with the outcome. Fourth and final set of questions related to the effects of COVID on their Etsy business and how they dealt with challenges created by the pandemic. All interviews were carried out by the first author in English on Zoom and audio or video was recorded as per participants' comfort.

3.3 Data Analysis

The transcripts for interviews were generated by Zoom, reviewed and revised for corrections by the first author while referring to the audio and video files. The first author read the transcripts and listened to the audio several times to familiarize herself with the data and to make note of participants' emphasis on different topics as they shared their views during the interviews. After familiarization with data, initial or open coding of data [46] was done by the first author to arrive at 242 codes using Atlas.ti software. The code list was reviewed to combine some of the codes and the total codes were reduced to 235. The first author conducted solo coding of the data therefore, the inter-coder agreement was not sought [46]. Moreover, the codes were grouped into four high-level code groups: handmade, intellectual property, customer/shop management, and pandemic. Some example codes from each code group are 'differentiating from resellers', 'seeking legal counsel', 'better visibility with good reviews', and 'COVID made reseller issues worse'. The code list was reviewed by the first author again to identify codes that were closely aligned in topic. The codes were then thematically grouped into similar categories and assigned theme titles such as 'identifying an infringement', 'techniques to ensure products looked handmade', 'work done in understanding Etsy's algorithmic changes', and 'talking to other sellers to make sense of platform dynamics'. The first author then wrote analytical memos for each of the themes which were discussed with the other authors in detail in light of the concepts of invisible work.

4 FINDINGS

In this section, we explain the three broad categories of invisible work performed by Etsy sellers: invisible work in running a handmade shop on Etsy; invisible work performed to understand IP laws and their applicability to Etsy businesses, navigate issues of intellectual property, and avoid IP violation; and invisible work to understand the changing algorithms and policies of Etsy.

Gender	No. of Shops Owned	Duration of being an Etsy seller	Approx. annual income from Etsy (USD)	Age
Women : 12 Men : 6	Only 1: 13 1+: 5	<= 1 year: 1 Between 1-2 Years: 4 Between 2 to 5 years: 2 Between 5 to 10 years: 7 10+ Years: 4	Prefer not to share: 1 Between 100 and 1K: 3 Between 1K and 5K: 3 Between 5K and 10K: 2 Between 10k and 30k: 5 More than 10K : 2	18-25 Years: 2 26-35 Years: 5 36-45 Years: 5 46-55: 2 55+: 4

Table 1: Etsy Seller Demographics (Total : 18)

4.1 Invisible work around running a handmade business

Etsy's policies allow the sale of three types of products on its marketplace: handmade, vintage (more than 20 years old), and supplies. Fourteen sellers in our sample sold handmade products, two sold vintage items and two considered themselves handmade but were either selling products imported from their country of origin or reselling. In this section, we present findings on the invisible work Etsy sellers perform while running a handmade business.

Etsy promotes itself as a source of flexible employment where sellers can choose how many hours they put in and also whether they are willing to become full-time or part-time sellers, especially women trying to balance domestic and childcare work with income generation. However, our study shows that Etsy places significant demands on both part-time and full-time sellers which reduces flexibility significantly and leads to attrition for some part-time sellers. 33% of our sample spent less than 10 hours every week, 28% spent between 11 to 30 hours, 28% spent between 31 to 40 hours and 11% spent more than 40 hours on creating products (design, procure supplies) and their sale on Etsy. Typical tasks in shop management include creating listings, taking photos, creating product descriptions, creating products by hand, determining prices, packaging and mailing products, communicating with buyers, resolving customer issues, following up with the post office about deliveries, etc. Sellers also spend time coming up with new product ideas and creating new products on an ongoing basis, some of which are successful while others are not.

For two part-time sellers, the work associated with setting up and running a handmade shop was unsustainable and they had to quit. They reported that it had become too overwhelming to continue being an Etsy seller with their existing responsibilities of a full-time job or study. *"I was in college when I opened it ... I didn't expect much to come of it. Very quickly it got pretty overwhelming. I got to a point where it really was impacting my school and I made the decision that I just needed to close it and take a break."* (P17)

4.1.1 Defining Handmade . Etsy does not have a mechanism to detect and remove non-handmade shops and listings. Therefore, it's upon the sellers (and buyers) to determine which shops are handmade and which ones are reselling machine manufactured products or drop shipping (taking orders from customers and passing them onto a 3rd party for fulfillment without being involved in the production). Sellers have established a list of indicators that they think help determine whether something

is actually handmade. These indicators include the same item coming up several times in the search results or multiple sellers selling the same item; multiple listings using the same picture or multiple identical listings; whether seller has a picture of themselves and what they have to say about themselves; images of products or workspace as shown in figure 2; seller has a picture of themselves and what they have to say about themselves; how they describe the product; whether the product in question could be made using tools at home or workshop or would require heavy machinery; and if the shop is located in the US but delivery times are large indicating import and resale. Sellers have slightly varying opinions on what handmade is and these opinions are directly affected by the nature of their products. Some consider a product handmade as long as the design is made by the seller artist even if it has been produced or manufactured by a production partner. Other sellers think that a product is not handmade if all of its parts (e.g. frames for a handmade print) are also not handmade.

4.1.2 Creating and Editing Product Listings . At the time of this study, multiple sellers reported that creating listings for handmade or vintage products on Etsy is very time-consuming as each listing needs to be created separately as all products are unique. Sellers have to take photographs of every item individually and each listing requires multiple photos as shown in figure 1. Sellers are not always skilled at photography and sometimes have to outsource the photography and graphics work to someone else or spend hours taking photos. Some sellers set aside special days after production to set up a studio and take photographs. One ceramic bowl seller, age 55, had shifted to selling on Etsy after the pandemic halted in-person selling. She shared that because she struggled with creating listings and determining an appropriate shipping fee, she was planning on going back to selling in-person in local galleries.

"What's really time-consuming surprisingly, is creating the listing ... and photographing ceramics. ... I'm doing a lot of image editing. I'm trying to figure out [the total weight of the package] by making a mock-up packaging of it and coming up with a price that is reasonable for shipping. It can take up to two hours for a single listing. (P3)"

Another seller shared that listings with better photographs and descriptions sell better. She spends two days every month setting up a studio and taking pictures, writing descriptions, and uploading them to the listings. *"I usually set aside one or two days a month to set up an entire photography studio with the lights and all that jazz. Then there's the editing, creating the listings in which you upload everything, the pictures, and you have to write a description and of course, have all the proper measurements. (P18)"*. Changes to

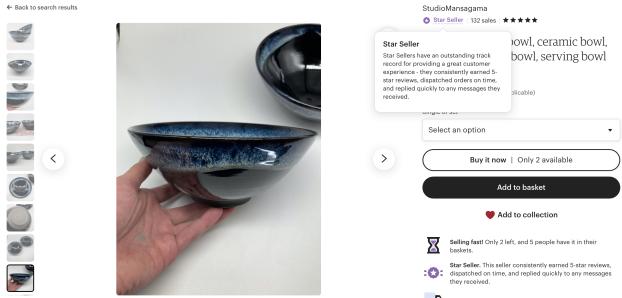


Figure 1: Format of a typical Etsy listing containing multiple images of the product taken by the seller, star seller badge and description, and estimated delivery times [39]

each listing also need to be made individually, including changes mandated by Etsy such as changes to titles, SEO tags, etc. One seller shared that Etsy requires them to add a tariff number to every listing and to make this change she has to edit each of her 400+ listings separately. “*It’s very cumbersome to edit my listings because you have to do them all individually. I have to open every single [of my] 400 plus listings and put that term if anything changes... it’s very cumbersome (P14)*”

4.1.3 Differentiating one’s shop from reseller. Despite Etsy’s handmade policy, sellers report a high proliferation of resellers on the platform. As per our participants, Etsy does not monitor its platform for non-handmade products. It, however, gives sellers and buyers the option to report shops which might be violating its policy using a form as shown in figure 3. Sellers are faced with increased competition from resellers offering products in the same category at lower prices. Handmade sellers cannot lower their prices as much as resellers who sell mass-produced products. Sellers also shared that when resellers and drop shippers operate in their category, handmade sellers appear lower in Etsy search results. Therefore, sellers engage in various kinds of invisible work to differentiate themselves from resellers, identifying what a reseller looks like e.g. by reverse searching reseller products to find the same items being sold on Chinese e-commerce platforms like Alibaba, and reporting resellers to Etsy with links of resellers products and links to other websites where the mass-produced items are being sold. Sellers are confident that customers coming to Etsy are motivated to buy handmade products and they make an effort to appear as genuine handmade sellers. They do this by managing the appearance of their shop and in their interaction with customers. One seller shared the steps she takes in this direction: “[*You’ve got to] make sure that you’ve set up your shop in a way that shows you as a person, what you do, maybe a picture of you making something. One thing that I really try to do is be personable in my emails with people.*” (P16)

4.1.4 Communicating with Customers. Due to the handmade and customized nature of Etsy products, sellers have to coordinate with customers about customization requirements. Sellers cannot produce a product until they have all the customization requirements from customers. This puts additional pressure on sellers as they have to ensure they produce and ship products within their

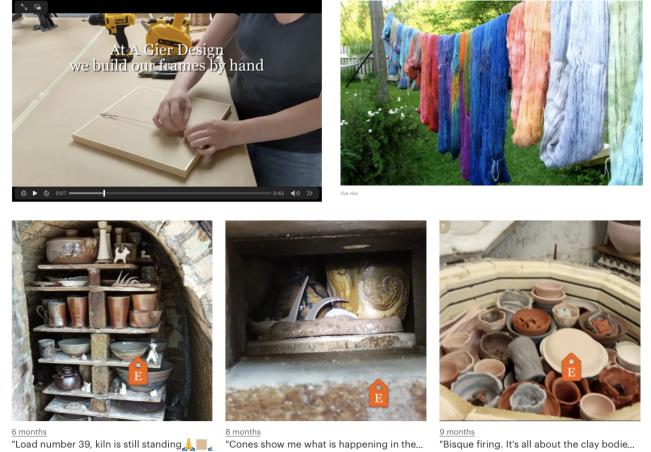


Figure 2: Videos and images on Etsy shops depicting steps in sellers’ production process as an indication of genuine handmade products [18] [15] [19]

declared processing time which is taken into account by customers and also monitored by Etsy. Recently, Etsy decided to measure seller performance using the Star Seller program (figure 1), requiring sellers to respond to 95% of customer messages within 24 hours, putting the burden on sellers to respond to all messages, including spam, within a day. For inquiries from prospective customers, Etsy requires sellers to communicate using its messaging system which is not designed to support a high volume of communication effectively. One seller said that increased pressure from Etsy to sell more adds to the scale of their communication work, but the Etsy message center is unable to support seller communication at a large scale in a user-friendly manner.

“If Etsy website members are asking me questions I have to use the Etsy website to communicate with them. It’s never been great for communication on the scale that they’re asking sellers to start selling at... they want you to respond to a message within an hour.” (P11)

4.1.5 Ensuring Good Ratings and Reviews. Like all platform systems, customer ratings significantly affect sellers’ business. Reviews and ratings directly impact their visibility in the Etsy search results as explained in section 4.3.1. Therefore, sellers put in extra effort to ensure they have good reviews. They communicate with customers if they have an issue with the product and resolve it by offering a refund or replacement. One seller shared: “[*how do you handle the negative reviews?] Well, if it’s something that I can try to make up to the customer, I do like if they don’t like the quality or something like offering a refund or if it’s a shipping issue, I will refund shipping.* (P11)”

The nature of the product of each Etsy business determines if it has a high sale volume or low. For instance, a shop selling ceramic bowls requires longer to prepare each bowl than a shop creating sanitary napkins and the latter had higher sales. Shops with higher sales volume also receive more reviews. Such shops are not concerned about a few bad reviews as they get buried in the large volume of reviews. However, shops that are new or have low sale volumes are disproportionately affected by bad reviews or

low ratings. So sellers go to extra lengths to request customers to change reviews and resolve issues that cause a low rating. Sellers said that sometimes even satisfied customers leave a 4-star instead of a 5-star rating along with a good review indicating complete satisfaction with the product. However, Etsy does not consider the content of the review and uses only the star ratings to determine a seller's visibility in search results.

4.1.6 Analytics misaligned with dynamics of Handmade business. Many long-term full-time sellers report that there is a disconnect between Etsy's Key Performance Indicators (KPIs) for sellers on which it rewards or penalizes them and the dynamics of a handmade business. Etsy sellers often sell customized products. Communication with customers to clarify their customization needs adds to the timelines of creating and shipping a product. One long-term seller shared her assessment of some indicators on which Etsy was measuring sellers' processing time in a test and its disconnect with the creation of customized products and the factors affecting it being out of the seller's control. "*I was in a test recently where they showed me a percentage of how many orders were shipped on time. I do a lot of custom orders that require personalising. A lot of times I have to reach out to the customer and say you didn't say what color you wanted and ...I may not be able to ship that order on time because of it. I was worried that they would take that and make that into something that would be problematic for my shop*" (P5). She equated it with Etsy micromanaging independent sellers about how they should be running their businesses. Such disconnect was a source of anxiety for her and multiple other sellers.

Previous work shows freelance workers to struggle with autonomy with freelance platforms exercising control over work availability and client relationships [5]. We see similar feelings of being closely managed and a sense of the platform exerting control over business decisions among Etsy sellers. "*There's a lot of micromanaging what sellers do to make the buyer experience really good. They're not allowing business owners to be business owners and take care of their shop.*" (P5).

Sellers think that Etsy's expectations from sellers are no longer consistent with that of handmade businesses. Etsy has been reducing sellers' margins by charging more fees and allowing resellers on its platform which increases price competition. This has forced sellers to increase their sales to remain profitable which directly scales up both visible and invisible work they have to do. Previous literature also indicates that handmade businesses due to the very nature of how products are made have a limit on production volume. Hence, these expectations are not in alignment with the very nature of the handmade business. "*Etsy has kind of moved to this position where they want people to make art like Lyft wants people to drive. They don't want to pay him s*** and they want them to not take breaks and p*** in bottles like Amazon. It has started to become like any other sweatshop....abusive of its people running the shops....they're incentivized to grow the business larger so that's a fundamental problem... For handmade goods, you can't extract more than what's available so they're extracting where they can from the sellers.*" (P11)

As part of its analytics, Etsy collects data on sellers and their products and offers competitive insights to other sellers like recommended prices for products or suggestions for free shipping.

However, because the products sold by sellers are handmade and often unique in design, materials, and manufacturing process, the suggestions do not apply to the sellers' business and they have to determine whether to act on such suggestions from Etsy or not. Etsy discourages sellers from increasing their prices to stay competitive; however, sellers consider such detailed suggestions about their businesses from Etsy to be micromanagement. They think Etsy is putting more and more demands on the sellers while asking them to keep their price points the same thus increasing uncompensated work. One long-time seller shared their frustration about Etsy's shipping cost and pricing suggestions. As per the seller, Etsy was asking them to keep their shipping fee lower than what Etsy was charging them to ship. Moreover, the seller also thought Etsy, not knowing the cost of materials they have used in their product, cannot offer sound pricing suggestions. Such suggestions can be dangerous for sellers on Etsy who are not business savvy such as art students.

"Instead of offering tools to make things easier for sellers, they [Etsy] are asking sellers to do more for them, for the same price point. So adding notifications like 'Our statistics say that the price for your products is 37% higher than similar products in its category... (it) puts the burden on the seller and considering we got a lot of uneducated sellers, a lot of art students that don't know anything about business... and they (Etsy) are leading these people to make choices that aren't in their best interest." (P11)

4.1.7 Defending Handmade by Reporting resellers. Etsy members (sellers and buyers) can report violations of its handmade policy. Figure 3 shows the form sellers can use to report a shop that is violating Etsy's policies. Sellers said many shops competing in their product category resell products available on AliExpress. However, because reporting requires attaching proof, and most of these shops have hundreds of individual items, it is exceptionally time-consuming for sellers to effectively report violations. One seller shared his experience of reporting a reseller in his product category. He hoped that after he had pointed Etsy to the reseller, they would do the rest of the due diligence as he did not have time to report each of the 150 products of the reseller.

"When you report something like that, you have to link to the actual product where it's available on the other [web]site. It would just take too much time for me. He's got 150 products. I listed six of those and I said, all of these products are available on Ali express and they're not handmade. Go to AliExpress and search for any one of them and you'll find them...I'm sure not going to take time to do it. It's not my job" (P15). Sellers report that despite their reports, Etsy does not follow up or that they do not have time to go back and check if Etsy took the listing down.

4.2 Invisible work around understanding and defending Intellectual Property

Many Etsy sellers design and produce their products themselves. Some products are physical such as clothes, jewelry, toys, etc. Others consist of digital artworks. As explained earlier, these sellers also create descriptions and photos of each product to create a listing. High-earning sellers also register their trademarks, brand names, and logos. There are three types of intellectual property infringements that affect sellers: i) copying of listing content, ii)

(A) What's wrong with this shop? x

Review how we define **handmade**, **vintage** and **supplies**
See a list of prohibited items and materials
Read our mature content policy

They sell items that are...
 not handmade
 not vintage (20+ years)
 not craft supplies
 prohibited or uses prohibited materials
 not properly labeled as mature content

Tell us more about how this shop violates our policies.

Report this shop Cancel

(B) What's wrong with this shop? x

We take intellectual property concerns very seriously, but many of these problems can be resolved directly by the parties involved. We suggest contacting the seller directly to respectfully share your concerns.

If you'd like to file an allegation of infringement, you'll need to follow the process described in our [Copyright and Intellectual Property Policy](#).

(C) What's wrong with this shop? x

The first thing you should do is contact the seller directly. If you've already done that, your item hasn't arrived, or it's not as described, you can report that to Etsy by opening a case.

Report a problem with an order

Figure 3: The form on the Etsy website to file a report against shops that A) Violate Etsy's handmade policy, B) Infringe on another seller's IP, or C) Have issues with orders.

copying of digital art files, and iii) violation of the seller's trademark. When an infringer copies a seller's listings, they unwittingly copy their trademarks too. Multiple sellers refer to their listings contents (texts and photos) copied by another seller who they suspect to be scammers not intending to deliver the product. One seller was, therefore, not concerned about copying. Other sellers report them as scams involving their products that could hurt their shop's reputation. One seller explained how infringers steal digital art files and resell them. "They're stealing digital files or they're buying a digital file for two bucks and then they'll sell it themselves on Etsy. Search digital planners. All you gotta do is buy it for two bucks and turn around and sell thousands of them." (P4)

4.2.1 Understanding IP Rules. Sellers are typically artists and crafters without knowledge of IP laws. At times sellers run into situations that require them to learn these laws, such as when someone copies their listings, resells their art files, violates their trademarks, or accuses them of copying their designs. The latter was a rare occurrence in our sample. Etsy has a hands-off approach when it comes to IP, as can be seen in figure 3, even with regards to educating the sellers. Sellers reach out to Etsy with their questions but when they receive no reply, they have to find out relevant information themselves. Sellers are eager for more help in this area. "They never answer questions you ask like I mean usually there is like a help page where you can find the information you need, but still I had some questions about intellectual infringement like where do I stand and they don't even answer" (P18).

When faced with threats and accusations from other sellers or violations of their copyright, sellers try to figure out the details of the IP law and how it's applicable to them. One seller shared her experience exploring IP laws but found that copyrighting her products was not feasible because each time she produced the same product, she would change color or even material based on availability, but copyright requires specifying dimensions and materials used. Therefore, a single license would only apply to a handful of her handmade products, making the process too costly. She was still annoyed at the lack of ways to protect her ideas as she would create a product and come across a much similar product in someone

else's shop later. Even though copyrighting might not be feasible for craft products, sellers still have to put in the work of studying IP laws and determining whether they apply to their products or not. "*I did look into IP and I even thought about getting some of my stuff copyrighted. The truth is, each one [of my designs] is an individual product and [you have to] sort of pay to get each one copyrighted ...the cost [for my product] would skyrocket. There are people that I know, especially from social media who, [when] you come up with a good idea, and then it shows up on their site too and while it definitely grinds my gears I try to just ignore it because it was a good idea, people ripped it off, but you know that's life.*" (P18)

Sellers who produce crafts by hand can also think their products are not unique enough to be copyrighted since copyrighting ideas is not possible. Across the interviews, sellers have found that copyright is not a cost effective strategy for low volume, handmade products. One seller shared her experience: "*Some of the products that I make are so general like a broken mirror, I can't copyright [them]. I just try to stay out of the way of other people, and I do worry a little bit, but there's very little I can do to protect myself, except for picking fights with other people, and I just don't have time for that.*" (P18)

4.2.2 Identifying an Infringement. Etsy does not provide sellers any mechanisms for identifying or locating someone copying their listing, so sellers have to employ other methods of identifying infringements. One seller explained this as "*There's no easy way to do it from my seller platform, and the onus is totally on me to find out and seek out when people are copying my stuff and reporting it and luckily, in this case, the customer sent it to me*" (P15).

Below we list the various methods sellers use to find out if they have been infringed.

Asking customers to inform sellers about counterfeit. Customers searching Etsy for products often inform sellers that they have come across a counterfeit or fake listing using their content. One seller shared the example of a pin seller who asked her customers to report to her if they saw any copies of her pin designs and even educated her customers about identifying one of her genuine pins from a counterfeit. One seller pointed to the Instagram of this other seller and explained how she solicited complaints from her customers: "*She will tell people 'if you ever find a counterfeit copy of my pin, let me know. She has links like 'report a counterfeit. She also has a reporting form. She even says how to determine a genuine pin of hers*" (P7)

Reverse image or keyword search. Some sellers use reverse image search on Google or keyword search on Etsy to find products listed in the same category as theirs. If anyone has stolen their listing and is selling it as their own on Etsy, sellers can find out using this manually intensive method. One seller shared how she has been using periodic keyword searches since she started her Etsy shop. At first, it served the purpose of competitive intelligence but over time she started finding copies of her stolen listings on Etsy. "*When I opened my shop, I got on Etsy... search and I looked to make sure that nobody else was doing what I was going to do. Periodically I do market research to see what else is on Etsy and what people like. That's when I first started seeing 'oh OK, so that looks exactly like*

my design', and then basically every time I've ever looked there have been more people doing it. (P14)

Using third-party tools. Some sellers report using 3rd party plugins being promoted on Reddit for identifying copies of their listings or pictures over the internet.

Informed by other sellers. Sometimes one infringer copies listings of multiple sellers. When one seller comes to know about a seller and they research, they find out about other sellers being infringed too. They then reach out to other affected sellers and inform them about it.

Not searching for copycats. Some sellers shared that they did not bother looking for copycats because they were not technologically skilled or did not have time to look because of the time demands of managing the shop. One seller shared how she did not have time to look for copycats as she was too busy in production. *"I spend so much of my time making the stuff, I honestly am really slow on the computer upkeep of the shop. I'm not as tech-savvy."* (P18)

One seller compared her experience on Etsy to her experience on YouTube and suggested that like YouTube, Etsy should automatically detect whether someone was infringing upon any of the listings. *"I have this one video on YouTube that has 200 million views. So a lot of people copy it. I'm able to go through and see on my YouTube dashboard who has copied my video. And I can send them a notice like 'You must take this down in seven days or I can do something legally'"* (P7). The seller was also of the opinion that Etsy should automatically check and inform sellers if they are in violation of any of their policies as soon as they create a listing. Sellers should not have to know all the rules.

4.2.3 Determining effects of being copied. Sellers think that infringers copying their copyrighted designs cannibalize their sales. The copying of sellers' designs is not limited to Etsy. However, the sellers believe that Etsy's matching algorithm worsens the situation by promoting sellers who copy them. It shows infringer's listings as items similar to the sellers in ads. Sellers think that the money they invest in advertising on Etsy strengthens this pattern as people who discover their listing through ads are recommended competitor products because of matching. So the sellers are indirectly paying to promote their copycats. *"I know that these people that are copying me are selling more than me. Now two of them are outperforming my shop. A lot of the time the customers get to their listings from my listing because Etsy has an algorithm that matches products that are similar so when they get to my map mountain listing, they scroll down, they see the other person's."* (P14)

Many sellers whose listings have been copied but their products are handcrafted and difficult to recreate suspect that the infringers are scammers who do not actually intend to deliver the product. They create fake listings to collect payments from customers. Some sellers are of the opinion that these scams have increased during COVID. *"There are groups on Facebook and tech Doc that will tell you how to copy people's listings and user photos and how to list them. Basically how to steal... There are Tik Tok videos that show this is how you make your million on Etsy ...you steal their listing photos and go to Walmart and buy masks or whatever and then just use somebody else's pictures and sell to someone."* (P4)

4.2.4 Negotiating with infringers. The cost of sending a legal notice is high. Sellers first try to negotiate with the infringers after discovering that their trademark has been violated or content has been copied. Etsy does not get involved in IP disputes and asks sellers to first try to resolve the issue amongst themselves. Sometimes it works and the other seller quietly takes down the infringing listing to not be reported to Etsy and get a strike. One seller shared her experience of successfully negotiating with another seller who had copied her trademark:

"A customer told me, by the way, you know this lady over here [has copied your name]. I said [to her], you know I've got this name. It's my trademark. You can't sell it under this [name] and she said, oh I'm sorry I should just change it, so it was no big deal, but it could have gotten messy." (P5)

At other times, the negotiations are not fruitful. One seller explained how she goes back and forth with infringers arguing that they are infringing on her designs. *"I just messaged people and I asked them to please take a look at my copyright, please take a look at my trademark and take your art down because it's infringing. People usually get back to me, and they say 'oh mine is different from yours because I moved to the sun'. And I have to get back to them and say 'Oh well you know it's not different enough to be distinct enough' ...and it just goes back and forth, you know."* (P14)

Sometimes sellers work with other sellers to ban infringers. Some shops copy multiple sellers, multiple of whom then file a report against the infringer. Thus multiple reports from different sellers force Etsy to take that copier down. *"That one seller, who found her things on there, contacted every single person that shop was pirating pictures and listings from, and all of them reported it. So I have no idea if my single complaint did anything but I guess, as you know, multiple sellers reporting it, that worked."* (P18)

Sellers think that Etsy does not perform any checks on IP infringement reports as it does not get involved. This sometimes leads to false accusations to thwart competition. One seller who was accused of copying by another seller, grew very concerned about Etsy's potential response to this accusation if it went any further. *"I do know Etsy's stance on it, which is that they don't get involved. So if you get reported for it...They don't even bother to double-check, they just take your listing down and you get punished for it. But it seems to lead, when I spoke to other Etsy sellers, to false accusations because of course there's no burden of proof required."* (P18)

4.2.5 Measures taken to avoid infringing on someone else's IP. Etsy has enabled sellers to leave other jobs and become full-time sellers, with COVID further strengthening this dependence on Etsy. Sellers are concerned that they might accidentally/unknowingly infringe on someone or come up with a very similar design, also referred to as '*ripping someone off*'. When accused of infringement, the sellers get nervous especially if Etsy is their only source of income. They are worried about being accused of infringement simply because they weren't aware of a similar product existing. One seller was relying solely on Etsy for income as in-person craft shows were halted because of the pandemic. She shared her experience of being accused of copying someone's idea as follows: *"I didn't even know who that artist was, and so I got very nervous that perhaps I was you know [copying someone]. You can still be ripping something off even if you didn't know that it existed, right. I didn't*

want to get kicked off Etsy. At that point, I did not do in-person shows. So I was really nervous that my entire income stream was really going to disappear." (P18)

Therefore, sellers take active measures to avoid infringing on anyone's IP by taking different types of measures. We report three such measures here:

Giving up sales of the disputed product. Seller's reactions to accusations of IP infringement include discontinuing the sale of the disputed product in an effort to save their entire shop from being suspended due to a dispute. One seller who was accused of copying discussed how she would react if someone else accused her of copying in the future. "*If somebody else approaches me, which hasn't ever happened again, but if somebody else were to, I would just probably step away. I make so many different kinds of products that stepping away from one is hardly going to kill my business*" (P18)

Staying updated on competitors' products. Sellers follow other sellers in their own product category, to stay updated on what others are producing and selling in an effort to avoid making the same products and being accused of ripping off the other seller. "*I try not to step on toes. I do keep up with what other people are doing so that I can be sure that I'm doing something different if that makes sense, but I don't research like Oh, do you have a copyright on this or that...*" (P18)

Ensuring the components and suppliers are licensed or copyright-free. One seller who had been issued warnings in the past for IP infringement was very careful about where she sourced the images for her buttons. She had also done extensive research on the kind of images that do not have copyright anymore or websites for buying licensed images. Unfortunately, she infringed upon a trademark when she printed a celebrity's face on one of her buttons and was suspended from Etsy for good. She lost her income permanently as she was disabled and had no other income source. "*I would either draw my own art, make up my own words or there are sites where you can buy clip art. I would do that and just make really, really sure that the person selling it had permission to sell it.*" (P1) Other sellers also shared experiences where they had ambiguities about using an item sold on Etsy in their products. They, therefore, clarified with the seller if they had a license to sell it for commercial purposes. In cases where they weren't satisfied with the response, they did not go ahead with the purchase. In cases where the seller took responsibility, they proceeded to purchase the product.

When asked if Etsy could educate its sellers about IP laws, sellers were of the opinion that Etsy could change the presentation of the information on IP which is very text-heavy currently to an easier visual format such as videos, more attuned to artists and crafters. "*They probably don't want to or won't do something like that, because maybe it would take time or effort or energy or they would legally be on the hook for something. But they could make it simpler considering you're working with artists... a whole group of people that are kinesthetic visual learners perhaps. So communicating in a way that is meaningful to them ... to convey the terms of service, better than just writing a long document*" (P11).

4.3 Invisible work of understanding algorithms and policies

Platforms impose their policies on sellers through algorithms performing 'algorithmic management' [36] [31] [4] with workers being in an "invisible cage" due to opaque algorithms [43]. Sellers negotiate not just with the buyers but also with the platform algorithm for better evaluations [26] and employ various strategies to understand how the algorithms are functioning [31] [24]. Lack of transparency of algorithms are a source of anxiety for many platform workers [26] including Etsy sellers. Etsy changes the positions of sellers on its search results using various criteria which directly affect their business performance. Moreover, sometimes Etsy suspends shops which do not conform to its policies either manually or through the use of bots as per the sellers. All of these make it necessary for sellers to not only understand Etsy policies and algorithms but also keep up with changes in both.

Sellers report that Etsy changes its algorithms frequently and provides sellers short notice periods to comply with these changes. Sellers have to put in extra work in complying with the changes so their shops aren't negatively affected.

"Things change all the time...and it affects my business in big ways for example they change the way that the search algorithms work, the way that they tell you to do the titles, SEO and Etsy ads... They don't warn you, they just spring it on you like "Oh, this is happening today, now your whole business has to change"." (P14)

Sellers spend most of their time managing their shops and producing handmade goods. They find it hard to keep up with Etsy's emails announcing changes to the platform. "*If there were 40 hours a day, would be a lot easier. They're always sending emails about how this is changing... I tend to skim over them, and kind of delete them without really reading them, to be honest but on your Etsy shop, for your seller, they do post important changes on your dashboard. And they post little bullet points that you can click on, and brings you to an expanded explanation. I do tend to read those more often since I'm already in the upkeep mode and I'm already looking, in the Etsy frame of mind but the emails that's just too much.*" (P18)

Sellers talk to each other about Etsy's policy, actions or responses to various policy related issues such as dropshipping and intellectual property infringement. One seller shared how she learned from their network of sellers about Etsy has not removed drop shippers reported by sellers with proof. "*I have a network of people that I talk to that have Etsy shops. Some of them have drop shippers competing in the same space as them. They'll go to Etsy and say 'Hey you know I'm able to find this exact same product on this website for 60% less money. Clearly they're not actually producing this themselves.' Etsy has repeatedly not removed shops that are similar to that.*" (P17)

Sellers said that they are not always informed about these changes or changes are not always announced which puts extra burden on sellers to figure out which of their actions are being penalized by the platform. As per sellers, Etsy penalizes sellers without informing them which usually manifests in the form of decline in sales for the shop. "*Well, sometimes they tell us. They'll change it (the algorithm), and then they get in the announcement section in the forum. But sometimes they have those rules, but they don't tell the sellers what they are. You can kind of tell from how your shop performs for example, I think they penalize me for reporting copyright*

infringement, because every time I report someone my sales go down. I can't prove that but it seems like they do." (P14)

4.3.1 Methods for understanding working of algorithms. Sellers use various methods to understand how the platform algorithm works. These include reading Etsy's instructions, talking to other sellers, observing other sellers, and reading discussions among sellers on subreddits about Etsy. One seller shared that Etsy ranked sellers by ratings. When asked how she figured out Etsy's criteria for ranking sellers, she shared her process of looking at Etsy's instructions and reading up on Etsy subreddits. "*If you're not a five-star or close to five-star rating nobody will ever see your shop. Unless they, like, search for your name, particularly. (And how did you learn about this ranking system?) I'm first reading a whole bunch of their voluminous in-house instructions to sellers. Then spend a lot of time on primarily Reddit*" (P3). She shared that her biggest challenge with selling on Etsy was offering free shipment. She learned from other sellers and Etsy instructions that Etsy prioritizes sellers if they have free shipment but her ceramic bowls are too heavy to be shipped free. So she had to go into details of adjusting her prices to accommodate shipping fees in the price. It resulted in varying her margins by the distance of the customer's location and eventually making her prices uncompetitive. She preferred returning to selling in person as things started opening up after COVID than selling on Etsy. "*Shipping is a huge challenge. My stuff is heavy and it's fragile. Etsy ranks your listings higher if you promise free shipping, or at least that's what I seem to have learned from reading all of the Etsy instructions and the Reddit Etsy groups.*" (P3)

4.3.2 Uncertainty about policies and alternate channel development. Sellers share their experiences with unpredictable and unexplained platform policies and actions on discussion forums. These include shop closures without any explanation. Other sellers who read about such experiences take it as a clue about what could happen to them or how the platform will treat them. "*A lot of people say their shops have gotten suspended for no reason, people like me, which is terrifying because Etsy would not give them a reason why they got suspended or why their shops are closed. Their money is held in a fund for 180 days and they can't access their shop, information, or money. That is something that kind of hangs over me constantly*" (P5). She feels that someday Etsy might close her shop too without any explanation and she might lose all the work and investment she put into her Etsy business.

Uncertainty from Etsy has forced sellers to look for or develop other channels for sales like websites. Sellers report that they do not have the time, resources, or skills to be able to draw traffic to their websites at all or to eliminate dependency on Etsy for a major portion of their sales. Creating products for sale by hand and managing an Etsy shop is time-consuming and does not leave much time to develop new channels. The higher the dependency of sellers on Etsy for income, the more anxious they are about uncertainty in Etsy's policies. "*My biggest worry is just like one day because I've read on certain forums, people getting their shop shut down for no real reason... It makes me nervous, so I want to have another (channel), especially since in-person is no longer a thing right now.*" (P18)

5 DISCUSSION

What is defined as work depends on the context and who is defining the work. As per Star & Strauss, "*no work is inherently visible or invisible*". We use a set of indicators to define work, the indicators of work change with context, and "*the context becomes a negotiation between visible and invisible work*" [49]. In this section, we discuss how Etsy has countered the historic invisibility of craft, only to create more invisible work for crafters. We also discuss the negotiation and articulation work around defining and defending *handmade* products, understanding one's intellectual property and how (and whether) to defend that IP elsewhere on the platform, understanding the working of the platform algorithms and actions, and the need to adapt to changing platform regulations. Finally, we discuss the misaligned abstract indicators used by Etsy to measure seller performance and how it uses these indicators to reward sellers by changing their visibility on Etsy search results.

5.1 Cycle of Invisibility and visibility

Star & Strauss argue that the phenomenon of visibility and invisibility is recursive and consists of tradeoffs and balances. Efforts to make one aspect of work visible might make other areas invisible or create new types of invisible work. Specifically, in the case of handmade, the recursive relationship between visibility and invisibility can be seen: making the handmadeness of the sellers' shops visible to customers has created a new type of invisible 'backstage work' for sellers. This backstage work includes learning photography, setting up photoshoots, taking pictures of products and work process, and coming up with unique product descriptions. Moreover, some aspects of the backstage work which are indicators of handmadeness such as pictures of the sellers' workshops, and their process of creating items from scratch are used by sellers to signal a genuine handmade shop to not only buyers but also Etsy. The visibility of a seller's handmadeness could and should be displaced onto Etsy in the form of due diligence into sellers' practices. For instance, currently, Etsy verifies the handmadeness of select sellers before featuring them in its blog every month (a form of temporal visibility) [31]. Such visibility can be made permanent by allocating badges as indicators of handmade business for vetted sellers. This would remove an invisible work burden from sellers and customers to verify which businesses offer handmade products.

By allowing resellers on the platform without tagging them and focusing myopically on product prices, shipping fees, and delivery times, which resellers are more competitive at, Etsy ignores the dynamics of a handmade business, limitations on production volumes, and the invisible work involved in running a handmade business. Krugh [29] criticized the limited potential of handmade businesses for production and price competition in a capitalistic economy. Our study shows that by ignoring these limitations, Etsy creates additional pressure for handmade sellers in two ways. Firstly, Etsy has been under increased pressure from investors to show consistent annual growth. It has increased the number of resellers on the platform at the cost of the integrity of their handmade policy and increased competition for genuine handmade sellers [7] [45] who engage in the invisible work of detecting and reporting reseller shops in hopes of thwarting unfair competition. Secondly, handmade sellers think of unique product ideas and produce all

products with varying manual effort. Available time impacts their production capacities directly. The time Etsy sellers spend doing unpaid non-productive tasks limits the time they can contribute to creating and making products. Therefore, sellers are not only under pressure for time but also for margins while competing with resellers.

Currently, Etsy's design and functionality are built on features and policies that increase the invisible work for sellers. The Etsy platform displaces many tasks onto sellers; the work of creating and maintaining appearances like a handmade business; identifying and reporting resellers and IP infringers; and performing due diligence on suppliers to ensure IP integrity. Moreover, through its frequent changes in the SEO, ads, and other features, Etsy requires sellers to frequently update hundreds of unique listings individually, creating additional unpaid work. And Etsy does not provide sellers with any tools to reduce the time spent performing these tasks. On the other hand, Etsy does provide potentially less helpful guidance to sellers, including suggestions about shipping fees and pricing, etc. that feels to sellers like micromanagement. These suggestions might be well-intended, but when they do not incorporate sellers' business details, they can be a source of annoyance, anxiety, and concern about potential loss, and uncertainty about their business decisions.

5.1.1 Reducing invisible work for handmade shop. We offer the following design suggestions for reducing the invisible work shouldered by handmade shop owners on Etsy:

Measuring invisible work. One way of addressing invisible work that goes unnoticed, unsupported, or uncompensated is to make it visible. This can be done using various technological mechanisms of quantifying and highlighting invisible work discussed earlier [11] [28] [52] [50] [38]. It could include measuring time spent by sellers on different tasks (e.g., creation of listings, responding to messages, etc.) and through the use of analytics to identify areas or tasks which are unpaid and consume a significant portion of sellers' time. By identifying tasks that consume sellers' time, Etsy can create tools to move work from the sellers to the technological tools in its platform. It can make the Etsy business more sustainable for sellers, especially part-time sellers, and allow more productive time for full-time sellers. Another benefit of measuring invisible work is fair compensation for sellers' products. It could reduce the second-guessing sellers do on Etsy's price suggestions and prevent Etsy from providing loss-making recommendations.

Automating Changes. To reduce the work sellers have to do in complying with changing requirements, provide them with tools that automate changes, especially ones that apply to all the listings, to allow bulk or batch application.

Introducing changes. Sellers spend time on the website for the upkeep of their shops. When informed about changes over emails, they ignore the information as they do not have time to read the text. Etsy can introduce changes via the seller dashboard to make changes immediately visible. Moreover, user capabilities to learn about new changes might vary. Therefore, Etsy can assess the learnability of changes and pace the frequency of changes to avoid overwhelming the users [27].

Bulk replies and templates. Etsy should improve the design of message centers by allowing sellers to send bulk replies to similar queries and designing standard replies for similar and recurring queries.

5.2 Articulation work and Matrix/Layers of visibility

Our study shows that sellers have to perform articulation work concerning platform policies, algorithms, and actions.

5.2.1 Articulation work for handmade. The subjectivity of handmadeness of a certain product makes it difficult to determine it for Etsy platform, buyers, and sellers. This subjectivity also increases *articulation work* for buyers and sellers. In the case of Etsy's hand-made policy, we consider the work of determining which indicators show that a shop is reselling mass-produced products on Etsy as articulation work. We offer following suggestions to reduce this work:

Automatic/Algorithmic Detection of non-handmade shops. The platform should assume the work of detecting non-handmade shops by introducing automatic detection mechanisms identifying listing descriptions and images not unique to Etsy. Such listing content can exist on multiple websites globally known for sourcing economically mass-produced items. These detection mechanisms can check for the contents of every new listing if it already exists on the Etsy website or other e-commerce sites to prevent drop shippers and resellers from creating Etsy listings in the first place. Another aspect of detection involves quicker processing of seller reports against resellers to minimize the exposure of such shops on the platform.

Clarity in policies. Etsy should clearly outline its policies regarding whether resellers are allowed on the platform or not. It can tag businesses as handmade and resellers for customers interested in buying each. Currently, Etsy's policies and actions are contradictory creating confusion among sellers. Sellers spend time reporting resellers but suspect that Etsy has deliberately allowed them on the platform. Etsy should make its policy clear and its actions consistent.

Transparency in seller categories. If Etsy wants resellers to also be part of their platform, they could specifically indicate seller type. This would enable showing segregated search results to users based on their interests. Those interested in handmade are shown handmade whereas others who might be more price conscious but not particular about buying handmade can be shown reseller items too.

5.2.2 Articulation work for algorithms and suspensions. The lack of explanation for shop suspensions increases the work sellers do to determine the cause of suspension, address it and prevent it. Since Etsy does not explain shop suspensions, sellers participate in online communities and discuss their issues with other sellers to determine the underlying cause and potential solutions. Moreover, sellers think that Etsy does not always share the parameters used by its algorithms to position them in the search results. To resolve this ambiguity sellers engage in speculation. By answering the queries of sellers to offer an explanation for platform actions and resolve

issues, sellers engage in digital labor. The work of providing explanations and transparency into the working of platform algorithms and actions should be Etsy's rather than displacing it onto seller communities.

Explanations for decisions. Decisions like shop suspensions and closures affect sellers adversely, particularly in busy seasons, and for sellers with Etsy as a significant or only source of income. Therefore, Etsy should inform sellers about the reasons behind policy decisions that adversely affect the sellers.

Transparency in Algorithms. Etsy should provide sellers with transparency around working of its algorithms. Various levels of transparency of algorithms include transparency of existence, operation and impact [12]. However, there are limitations on the extent to which inner working of algorithms can be made transparent. But making the impact of the algorithms transparent has shown to assuage concerns of business owners [12]. Sellers in online forums already identify areas of bias or adverse effects in Etsy algorithms. Etsy can build on this work to make improvements.

Diagnostic tools for policy compliance. We have seen sellers strive to stay compliant with Etsy policies yet they face challenges. In addition to clearly laying down policy rules, Etsy should also provide sellers with diagnostic tools helping them determine areas where they lack and work towards becoming compliant. It can remove the invisible work of sellers in figuring out relevant rules, and actions to take to become compliant. It can allow sufficient time to become compliant and avoid sudden and unexplained shop closures or other adverse outcomes. By determining where they stand concerning Etsy policies, sellers' anxiety and fears can reduce allowing them to work peacefully.

5.2.3 Articulation work for Intellectual Property. In case of intellectual property violations, Etsy has displaced all of the work to the sellers who need to come up with ways of determining who might be copying them, repurposing various tools and resources not originally designed for detecting such violations because Etsy does not offer any such tools. Sellers also have to educate themselves on IP laws and their applicability to their products. Since legal counsel is expensive, sellers educate themselves on due process if they find themselves on either side of an IP violation claim. Sellers have to work to avoid unknowingly violating another sellers' IP. They perform due diligence on other sellers and update themselves with other sellers' products to avoid creating products that overlap with other sellers.

In the discussion of invisible work, one question that comes up is: *visible to whom?* In the light of all of the above articulation work that Etsy sellers do, we draw attention to layers of visibility that exist on the Etsy platform. Much of the articulation work described above is created because of deliberate invisibility maintained by Etsy. Compared to a traditional work scenario where there are two entities, employer and employee, on a platform we have three entities - sellers or workers, buyers, and the platform. Therefore, there is platform-seller, seller-platform, seller-buyer, and platform-buyer visibility. There is ongoing strategic concealment and revealment on part of the platform and sellers, but by the platform to a much higher degree and with much more control. For instance, Etsy has much higher visibility into the contents of the listing if they are

being copied by other sellers who are not the true owners of those listings. *Socio-legal mechanisms* render work invisible because it is not defined as work by law such as non-economic, illegal/illicit, or informal work. Illicit work includes all illegal economic activities, recognized as economic unlike non-economic work but not looked into because of its illegal nature such as illegal sex work, black market transactions, drug dealing, etc [21]. In the case of Etsy, we contend that some motivation for keeping the IP violations hidden is driven by legal motivations [54]. Even though indicators may be available to determine if work involving IP violations is taking place, they are kept out of public view to protect the platform. Work done in copying other sellers' posts and trademarks by some of the sellers is not legal because it violates intellectual property laws and Etsy becomes complicit by hosting it on its platform. Etsy has visibility into all listings which are being created on its platform and can find out much more quickly and efficiently if such violations are taking place. But to protect itself, Etsy manipulates indicators of visibility of such violations and keeps the work hidden not only from other sellers but also the world at large. Another reason is the lack of financial incentive for Etsy to do so. In case of YouTube, the platform went above and beyond its legal responsibility to create visibility into IP violations of the content of film studios as it had a symbiotic relationship with them. People watched the film content on YouTube therefore, YouTube had financial incentive to address this issue [3]. However, if the interests of Etsy and the sellers are divergent, we do not expect Etsy to make this work visible. Therefore, while Etsy has visibility in terms of who is creating listings using content from other sellers, it keeps it invisible increasing the work sellers have to put in to identify such listings. Work is displaced to sellers whereas Etsy has the visibility to indicators of violation. It cannot make visible what it hides to protect itself from ramifications or from creating more work for itself.

However, if Etsy were to address the issue, it can provide sellers with tools which *automatically or algorithmically detect copying of trademarks and listing contents* and inform respective sellers. Alternatively, it could use automatic detection mechanisms to prevent the use of copied content for the creation of any listings.

5.3 Abstraction and Indicator Manipulation

Previous work has pointed out the potential conflicts between abstract indicators and people analytics for measuring work [49] [42]. Our study extends this body of work by providing a clear demonstration of such misalignment of performance indicators used by Etsy to measure seller performance. With the changes in industrial practices and structures, the distance between those who define what work is and the actual work site has increased, resulting in abstract measurement indicators along a long chain of negotiations. As per Star & Strauss, even though the language of indicators might appear neutral, they are political as they depend on the politics of what might count as productive work or creative work. Mismatch around Etsy policies and performance measurements also increases the invisible work sellers need to perform. Performance metrics conflict with the nature of a handmade business; for example, expecting sellers working alone to produce products by hand to respond to all messages within 24 hour is a misalignment with work practices. For example replying to all messages within 24 hours by sellers

working alone to create products by hand, managing their Etsy business while tending to their personal and familial responsibilities, does not take into account the sellers' lives. Similarly, penalizing sellers for delivery times for customized products where customer specifications of customization are not complete indicates a lack of understanding of the actual workflows of handmade business. Etsy also increases or decreases the search engine visibility of sellers based on these misaligned indicators.

Socio-spatial mechanisms of invisibility may be at play here and the mismatch of indicators is due to the invisibility of sellers' work to those who are defining the work and creating indicators for measuring it. Businesses that are not genuinely handmade and only reselling products can fare a lot better in comparison as they can afford to sell at lower prices, not charge shipping and spend time replying to messages. Therefore, the currently deployed indicators render handmade businesses uncompetitive. By mapping sellers' work such that the unique dynamics of handmade product-based businesses are taken into account, Etsy can align its indicators with the businesses it hosts on its website and reduce the invisible work, uncertainty, and anxiety of sellers.

Mapping sellers work flows. For Etsy handmade sellers, invisible work increases when platform indicators misalign with the nature of handmade work but KPIs are similar to mass-produced products dynamics, stretching the sellers in opposite directions, one is to hand produce stuff and the second is to make efforts to reply every message on time, offer free shipping yet keep prices competitive, etc. By mapping sellers' work such that the unique dynamics of handmade product-based businesses are taken into account, Etsy can align its indicators with the businesses it hosts on its website and reduce the invisible work, uncertainty, and anxiety of sellers.

Measuring time to deliver after requirements are complete. Etsy can revising KPIs to accommodate for handmade dynamics e.g. for delivery times, the time till delivery should start counting after all requirements have been completely specified by the customer.

Accounting for variation in production and sales volume. Some handmade products longer production times, limiting their sales volume. Moreover, some items can be bulky and cost higher shipping fees. For such products, depending on customer location, offering free shipping can incur a loss for sellers in the few sales they make. Moreover, products with low sales volumes can be adversely affected by a 4-star reviews. Etsy should, therefore, take dynamics of different handmade businesses into account instead of using 'one size fits all' approach for algorithmically ranking businesses in search results.

Differentiating between spam and customer message. Even if Etsy wants to promote responsiveness among sellers, it should allow sellers to differentiate between spam and customer messages by incorporating spam filters, allowing sellers to mark messages as spam and excluding replies to spam from seller KPIs on responsiveness to customer messages.

Accounting for Reviews. Sometimes satisfied customers give sellers a 4-star rating with a great review indicating complete satisfaction. Focusing only on the rating and not the review hurts the

sellers. Therefore, customer comments along with ratings can be assessed in evaluating seller performance.

6 LIMITATIONS AND FUTURE WORK

Limitations. Our study reports findings on experiences of handmade sellers on Etsy platform in the US. However, IP laws vary from country to country. Hence, these results might not be applicable to other geographies. Our study was conducted during the pandemic and sellers were highly dependent on Etsy for their income. The pandemic also increased the number of handmade sellers and resellers on Etsy, increasing competition, and pressure. Such effects may be reduced in the future as things go back to normal, unemployment is reduced, and in-person shows and other channels for sales open up.

Future Work. Our study included the perspectives of sellers only. Future studies can look into how the customers might be affected due to the issues presented in this paper. Moreover, we have identified three types of invisible work associated with handmade businesses in the US. Future work can measure the time spent by sellers in each of these categories of invisible work and test out designs to reduce this work. Future work can include case studies diving deeply into the daily workings of multiple Etsy businesses, mapping their workflows and analyzing invisible work in more detail.

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