The Factors behind Second-hand Fashion Consumer's Service Recommendation Behavior:
A Text Mining Approach

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Keywords: Second-hand Fashion, Source of Value, Recommendation Behavior, Text Mining

Introduction: Post-consumption waste in the fashion industry is being generated at an unprecedented speed (EPA, 2021). Without appropriate treatment, preventive measures including slow fashion products (Jing & Jin, 2014) and the promotion of biodegradable fiber products (CottonWorks, 2021) would impact little on the environment as an extra effort for environmentally sustainable fashion manufacturing may incur more cost to the end-product. One could target the re-circulation of the product to the supply chain through Collaborative Consumption (CC) practice, which extends the product life by delaying a new product purchase and reduce post-consumption fashion waste generation. Due to the consolidation and expansion of Consumer-2-Consumer (C2C) sharing platforms, the trend of buying secondhand products has been expanding (Styven & Mariani, 2020). There are several online marketplaces such as ebay.com, poshmark.com, craigslist.com, threadup.com, etc. that resell second-hand fashion (Xu et al., 2014). In these marketplaces, people resell items, at a cheap price, those are consumed gently (Todeschini et al. 2017). Marketplace platforms work behind the scenes to facilitate the transfer. However, trust plays a critical role in the online shopping (Dennis et al., 2009). This is particularly true in C2C markets, where online vendors are strangers to the buyers. Online purchase is perceived risky in terms of security and privacy concerns, which might impact consumers' intention to purchase (D'Alessandro et al., 2012) and recommend to others. If SHF consumers recommend the service to others, it should indicate SHF reselling's sustenance beside other regular forms of the fashion business.

Literature Review: *SHF Recommendation.* The users of online second-hand marketplace use discrete communication strategies bypassing mass promotional tools, possibly second-hand consumption is not well accepted in the society. This suggests that consumers might feel discomfort recommending Second-hand products and services to others. However, the growth of online SHF shopping services could mostly be dependent on word-of-mouth marketing (Lo, Tsarenko, & Tojib, 2019). However, which factors intrigue the consumer to recommend reselling service is yet to be known. Knowing the major factors could reveal valuable insights to the SHF resellers and platforms. Therefore, the purpose of this research project is to investigate the factors working behind online C2C SHF service recommendation behavior by SHF consumers.

Value Perspective. In a broad sense, a brand or service's perceived value is a consumer's subjective appraisal of a variety of attributes and meanings associated with that brand or service (Holbrook, 1999). Consumer value dimensions can be viewed according to their sources. Five key sources of consumer value, which are value chain processes and activities within and between organizations, are proposed (Porter, 1985), including products, information, interactions, environment, and ownership/ possession transfer. Each of these sources may provide functional, experiential, symbolic, and cost value. This framework is adapted in this research by classifying six sources of value, including products, information, consumer to consumer (C2C) interaction, consumer to business (C2B) interaction, purchasing environment, and delivery.

Methods: Consumer-generated C2C SHF platform reviews given on the third-party business review site are the sample data for this research. SHF reselling site poshmark.com is the sample company and trustpilot.com is the review site. Historic consumer reviews for poshmark.com are downloaded by web scraping using the python programming language. In total, 2500 consumer reviews are downloaded since 2016. Reviews containing negative ratings are considered. Out of 2241 negative reviews, 106 reviews mentioning 'not recommending the SHF service' are separated. These reviews have gone through content analysis to identify the occurrence of six major value perspectives that impact recommendation behavior.

Findings: The finding shows that C2B interactions are the single most occurred value (72.64% of the data) (Table 1). Improving this value should impact the recommendation behavior of the consumer positively. In the case of value combination, improving the combination of 'delivery'

Table 1. Frequency of the Source of Values

	B2C interaction	Information	Delivery	Product	C2C interaction	Purchasing Environment
Total Frequency	77	52	42	35	13	11

value and 'B2C Interaction' should improve the recommendation behavior most (89.62%) (Table 2). The table shows that B2C interaction is the single most value that can impact recommendation behavior in four different combinations, e.g., with delivery, information, product, and purchasing environment) with 75% improvement.

Table 2. Source of Value combination occurrence frequency

Value combinations	Total Occurrence frequency	% Of sample size
B2C Interaction, Delivery	95	89.62%
B2C Interaction, Information	92	86.79%
B2C Interaction, Product	87	82.08%
Information, Delivery	82	77.36%
B2C Interaction, Purchasing Environment	80	75.47%

Discussion and Conclusion: The findings indicate that customer service provided by the business platform is the most impactful value that a consumer might want to perceive. It is the consumer's last resort when his fellow consumer-reseller cannot provide sufficient service. Several issues need improvement. As a consumers say, "I have to wait up to 30 days to get my money refunded back to my card"; "Poshmark mgmt does not reply to my review" etc. In the C2C marketplace, sellers might not be as efficient as professional sellers. It is more valid in a virtual marketplace environment where the consumer takes risk of not getting the desired product. Marketplace authority should come forward to compensate for the service. To face the current post-consumption waste problem, the services of C2C SHF platform needs to be improved to increase consumers' confidence and using frequency of those platform. Otherwise, the best opportunity to fight environmental disasters might go in vain. The research is done only on secondary data where it was on consumer's discretion to reveal his intention to recommend. Future research should be done to investigate the interrelationship between behavior and values.

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