A Qualitative Study of User Participation and Challenges in a Social Shopping Context

Yu Xu
New Jersey Institute of Technology
Newark, New Jersey, USA
yx296@njit.edu

Bruce Ferwerda
Jönköping University
Jönköping, Sweden
bruce.ferwerda@ju.se

Michael J. Lee
New Jersey Institute of Technology
Newark, New Jersey, USA
mjlee@njit.edu

ABSTRACT

Social shopping enables people to share and discuss about shopping in collaborative shopping environments. While much work has focused on using *social* data to promote *shopping*, fewer works have examined the way people socialize in the context of shopping as a personalized collaborative activity. In this paper, we propose to use qualitative methods to gain insight into people's perceptions, concerns, and challenges in social shopping-related activities. Based on the findings, our work may contribute to the design of future online shopping sites and social media platforms that improve user engagement and participation in social shopping interactions, as well as facilitating personalized shopping and social experiences in online communities.

CCS CONCEPTS

• **Human-Centered Computing** → *User Models*; *Interactive Systems and Tools*.

KEYWORDS

Personalization; Interface Design; Social Context; Social Shopping; Social Network

1 INTRODUCTION

The increasing popularity of social networking services (SNS) and applications has created opportunities for new business models [1], and ways to measure and influence the behavior of consumers [2]. Shopping in a social interactive environment enabled by SNS and applications brings a different user experience to consumers, compared with that of brick-and-mortar stores and on traditional online commerce websites [3]. Social shopping is regarded as having the potential to revolutionize online shopping activities, with recent trends moving from product-centered commercial environments to more user-centered online communities [4]. Social shopping allows users to communicate, write reviews and comments, rate products, and share their experience while shopping on the Internet [5], rather than having unidirectional interactions where users search for and purchase products provided by businesses [6]. Therefore,

shopping experiences in the context of social shopping involve more social and collaborative interactions between users, leading to benefits including increasing sales, stimulating user engagement, and strengthening business and user relationships [7]. The social attributes of products and shopping experience have been seen as a major factor and contributor in online shopping activities [8, 9].

While most prior research examines how to take advantage of users' participation on SNS and applications, and contribute to the sales of products and services [10, 11], very few have examined the social and relational perspectives of social shopping—how shopping, as a collaborative social activity, shapes people's social relationships [12]. Recent developments in e-commerce and social media have attracted more individuals to interact with other users on online marketplaces and shopping forums, as well as their friends on social networking sites. With the access of online transactions, along with users' participation in sharing, discussion, and referrals on social media and online sites, researchers may better investigate social relationships in a social shopping context. For example, traditional social matching systems facilitate and support matching based on romantic intimacy, mainly online dating (e.g., Tinder, Match.com, OKCupid), and a wide range of social needs as well, including professional network (e.g., LinkedIn), group event planning (e.g., Doodle, Meetup) and information sharing (e.g., Yelp, Foursquare, TripAdvisor, Pinterest) [13]. The characteristics of social shopping—where users shop for products and interact by reviewing, commenting, discussing, and recommending products on multiple online platforms—create enormous potential for forming new social connections and maintaining current social relationships.

However, the problem is that in the field of "social shopping," most popular media channels as well as academic research mainly focus on the "shopping" aspect and largely overlook the "social" characteristics [14]. For example, ratings and reviews on social media and online marketplaces have been considered as one of the key constructs that shape consumers' behaviors in online shopping activities, as individuals may easily post product reviews and rate items, directly impacting others' shopping intentions [15]. SNS websites, like Facebook and Instagram, are no longer only places for people to chat, share, and "like", but, more importantly, serve as platforms for interpersonal interactions and communications [5]. Conversely, the social potential of online shopping activities has been largely overlooked by existing research.

This exploratory paper aims at a good understanding of why current social shopping systems struggle to facilitate initiating new social connections and enhancing existing relationships, and what specific factors are key in designing social-oriented, engaging social shopping systems. We begin with a review of the background

---

literature and how these works could inform the design of social shopping systems. Then we lay out our theoretical framework that outlines the paths for new social connection establishment and existing relationship improvement. We present findings from a semi-structured interview study of 20 online shoppers and social media users about how they discuss and share about their online shopping experiences with other people. We conclude by discussing the design implications that could help facilitate meaningful interactions between users in social shopping.

2 BACKGROUND

2.1 Social Shopping and Social Relationships

There is no clear definition of either "social shopping" or "social commerce" that is consistently accepted and used in existing literature [16]. Some use the term *social shopping* interchangeably with *social commerce* [17], or consider social shopping as a subset of social commerce [18]. Stephen & Toubia [19] believe that the two terms refer to distinctive user behaviors and platforms. They regard social shopping as a type of online shopping activity that connects customers who generate content on social media systems or online shopping platforms (e.g., by sharing items on Facebook, Twitter, and Instagram; or writing product reviews on websites such as Amazon.com and eBay.com), and social commerce as the industry that includes (typically online) businesses utilizing the interaction data to drive more informed and targeted sales [20]. In this paper, we define social shopping as an approach to online shopping based on interpersonal interactions between users on social networks (e.g. Facebook, Instagram, and Twitter) and online shopping platforms (e.g. forums, blogs, and review sites), where the consumers' perceptions, attitudes, and shopping intentions are influenced by their friends and other users through posts, sharing, comments, and recommendations.

In the context of social shopping, people are doing much more beyond shopping, and are no longer by themselves [21]. Instead, it is an online community for people to make collaborative efforts to explore stores, share information, discover products, and discuss about the shopping experience [22, 23]. Compared with traditional online shopping activities, social shopping made it easier and more convenient for users to explore interesting products, obtain shopping advice, and discover bargains, and therefore improve the overall shopping experience [2, 10]. Social shopping is more than just buying products, it is more of creating an online community, where people could gain increased social presence [24] and receive social support [2, 25] as well.

However, very few studies have examined how shopping, as a social practice, impacts people's social relationships. Previous research has extensively explored how people's social network activities can be used to predict and shape their shopping behavior [19], but limited works have studied the other direction—how social shopping contributes to people's social relationships. Adding commercial features to SNS and adding social networking features to online shopping websites are the two major trends in current social shopping research [2]. Prior social shopping research has focused mainly on the drivers of user-generated content (UGC), to investigate the determinants of consumer consumption and creation of UGC from the motivational perspective [26], as well as

the social effect of content contributions from the social influence perspective [27]. Zhang and colleagues [24] explored the motives of users participating in social shopping, and indicated that the effects of technological features (perceived interactivity, perceived personalization and perceived sociability) of social shopping systems on customers' virtual experiences (social support and social presence) and subsequently their participation intention to receive and share shopping information on social media. However, these quantitative studies do not explain why some social shopping systems fail to socialize users' online shopping experience and what challenges users face when participating in social shopping through current social media systems and e-commerce sites.

2.2 Similarity Attraction Effect

When users share similarities in demographics, interests, and attitudes, they become more attracted to each other [28]. Byrne [29] first posited SAE as increased similarity in attitudes, personality traits, or a number of other attributes is associated with increased attraction between two people, and the effect has been repeatedly studied and observed on multiple attributes and measures [30], across different cultures [31] for decades. In a social shopping context, these attributes were mostly identified in the users' profiles, as well as browsing and shopping history. Therefore, social shopping presents the missed opportunities for initiating new social connections and enhancing existing social relationships, as in many cases of social shopping, users may discover the similarities in interests with others, or their existing friends on social media during the interactive and collaborative shopping processes [9].

The emergence of social media allows for new opportunities to discover similarities in peoples' life and activities, to explain and predict people's behavior [32]. Many types of similarities are generated for discovery and exploration in the social media age, which include: "who-similarity" refers to the similarity in demographic features such as age, ethnicity, educational background; "what-similarity" refers to similarity in people's activities, hobbies, and views on certain events or phenomenon; "where-similarity" refers to similarity in geographic location, where users now can easily check in on social network sites and apps that track GPS locations; and "when-similarity" refers to similarity in timing of activities and experience, which is a relatively recent similarity attraction effect examined by Kaptein and colleagues [32]. The similarity attraction effect has impact on virtual communities as well. For example, previous research found the emergence of social relationships in online gaming communities without any physical contacts [33], where players establish friendships with others through playing games online and/or discussions on gaming forums, experiencing co-occurrence of activities (what- and when-similarities) and/or devoting themselves to a group of people with similar interests (what-similarity). Similarly, social shopping communities provide an online environment for the users to discover, share, comment, recommend, and discuss about products and shopping experience, which presents what-similarity and when-similarity to new encounters for social matching opportunities, and generates what-similarity for existing relationships to enhance.

2.3 Impression Management

Impression management, or the act of self-presentation, is based on the concept of "virtually everyone is attentive to, if not explicitly concerned about how s/he is perceived and evaluated by other people" [34]. Though traditional impression management is based on face-to-face interactions, scholars have examined the topic in users' online participation as well. For example, qualitative interviews are conducted to investigate self-presentation strategies in online dating sites, suggesting that online daters intensively involve themselves in both creating and evaluating impressions being given [35]. Researchers also studied impression management behaviors in online social media systems, and posited self-reported efficacy with impression management predicted the level of participation [36]. The concept has also been introduced to online communities, indicating impression management as an important factor in explaining online community participation [37].

Goffman [38] theorized impression management as a way people tend to intentionally shape how other people see them, through a serious of actions and performances in day-to-day social interactions. In online interactions, there also exists a need for users to control how they self-present, and evaluate the impressions given by other users, through actions on social media, such as information sharing and conversation exchange [39]. Additionally, several impression management literature introduced Predicted Outcome Value Theory [40] to examine on impression formation in online communities [41]. The theory posited that people expect to extract value from initiating new relationship, and they are more likely to interact with a new person if they perceive a positive value from the friendship in the near future.

However, though impression management features are relevant in social matching and online communities [39], no existing works have examined people's participation and interactions in social shopping from its perspective. Therefore, this paper addresses this gap in knowledge, examining people's expectations and challenges in sharing shopping activities on their social network, and how they currently form new social connections through reviews and discussions on e-commerce websites.

3 RESEARCH QUESTION

As an exploratory work, we try to cover a broad range of perspectives and understand the state-of-the-art user participation in collaborative online shopping contexts. Our research questions revolve around the understanding of user participation in social shopping on both social media and online marketplaces, to provide deeper insights of people's expectations and challenges in sharing and discussing about shopping in the online communities. We also explored if and how social relationships can be established or enhanced through collaborative online shopping activities. Additionally, we aim to investigate people's relationship goals in their social shopping interactions with others. Therefore, this paper addresses these following research questions:

- RQ1: How do people use 1) social networking sites, and 2) online reviews/forum to participate in social shopping?
- RQ2: What are the social and relational goals and challenges in collaborative social shopping activities?

- RQ3: How do self-representation and impression management affect user interaction in social shopping?

4 METHOD

To examine the research questions above, we conducted semi-structured interviews with 20 adults who self-reported to have used review sites/online forum and social media for online shopping activities in the past month. We used an open coding scheme to derive themes and theoretical constructs.

4.1 Interview Protocol and Recruitment

The interview protocol started with questions about types of items participants typically browse and purchase online, their experience of most recent online shopping activities, and how they used various online review sites/discussion forums and SNS for shopping. Participants were then asked about how they engaged in the discussions on online platforms and SNS with regard to shopping, and the impact of those shopping-related interactions have on their relationships with other users and their SNS contacts. We recruited the participants using flyers. The interview questions were slightly adjusted during the interview process to include explicit discussion of the emerging themes identified in prior interviews, and balanced the differences between students and the general public, which could have potentially biased our findings.

All interviewees were paid $5 for their participation. We conducted 17 of the 20 interviews in-person at a location of each participant's choosing. The remaining 3 interviews were conducted over audio chat due to logistical issues. Of the participants, 13 were male, 7 were female, and ages ranged from 18 to 36 (median 24).

4.2 Data Collection and Analysis

All interviews were audio recorded and transcribed for data analysis. The interviews ranged from 21 to 39 minutes (median 32) in length. Summaries of each interview were written after the interview was conducted. To explore shopping as socialized activities from the users' perspectives, we used a Grounded Theory approach for the qualitative analysis of interview data. We went through an iterative independent coding process to allow themes in the data to emerge naturally, and then generalized theories from these themes. We used open-coding with two independent coders coding the transcripts for emerging themes around the three RQs. More specifically, we first went through all the transcripts and extracted all relevant text that pertained to our RQs. We consolidated our codes into groups and hierarchies to determine emergent themes. High-level codes included topical codes such as "motivation, decision-making, experience, challenge" as well as social and relational codes such as "impression, community, self-presentation, social bond".

5 FINDINGS

In total, we recorded and transcribed 583 minutes of interviews. The findings discussed below are the end result of the iterative coding process, which are illustrated through representative quotes with names changed to preserve participants' anonymity.

5.1 Social Shopping Participation

Interview data shows that participants generally identified two major types of platforms where they participate in collaborative social shopping activities:

- Social Media (e.g., Facebook, Instagram, YouTube, WhatsApp) – where they share, discuss, comment, and recommend with people in existing social networks; and
- Review Sites/Forums (e.g. Amazon reviews, eBay reviews, camera forums) – where they interact with people who are outside their current social networks, but share similar shopping interests and/or experience with them.

5.1.1 Social interactions emerge from conversation exchange on shopping topics. Participants illustrated how conversations emerged from sharing shopping on social media, and led to additional interactions beyond shopping. Elizabeth told us, "One time my friend shared a makeup palette she bought. Then someone commented, 'Oh I was thinking about buying this. How do you like it so far?' And they went on a conversation about how she likes the product and this is why I like the product, where I got it. And they started talk about other topics. It kind of went from there."

People expected responses and useful information from their friends when they posted something on social media. Alan explained, "If I buy a laptop, or if I post that I want to buy an iPhone, or something like that, once you've read posts of pictures of it, we can have discussions of that, like 'do you know which phone is better?', 'do you have any deals for phones? If so, please share it with me', or something like if you know some phone experts." Additionally, people believed that sharing products that interested them presented their personality and preferences too, as Zach told us, "Usually people also get to know about the product, like what the product is about, why I'm interested in, and what quality I usually prefer to purchase. They also like to share some idea."

5.1.2 Online forums facilitate user interactions, while product reviews are useful for shopping research. In addition to their family and friends, most participants used online forums and website reviews to learn more of the products they were interested in purchasing. While it may not be surprising to us that people were primarily using user-generated resources (e.g. reviews, videos), it is still interesting to discover the differences in the use patterns of various platforms. Interview findings show how using product reviews make it easy for people to gain knowledge of the products and compare different items. Claire said, "I do look the review section in each of the product and to make sure that's exactly what I'm looking for. And I also examine the photos very thoroughly ... since most of the stuff I buy is from Amazon, users review many times, because user review make it easy to know the product."

Some users felt that they were a part of the community and had a responsibility to contribute. As Serena said, "I read other people's reviews, and I value other people's time and efforts... I do the YouTube review and the actual ratings and reviews of the product, because other people might also want to get some information from me." Though participants relied on product reviews to do research and make purchases, most collaborative activities on the review sites are target-specific (with regard to one specific product) and lack mutual interaction between users (i.e., many users passively consume the

reviews on the system, or write a review but are not involved in any subsequent conversations). In comparison, on the discussion forums, people more actively engaged in the conversations, sought people with similar interests, and the interactions went beyond any specific product. As John put it, "I would care about other people (on the forum), because they have interests similar to mine, so we are not just talking about cameras or lens, but also the techniques or places we went (for photography)." Samantha also liked forums better than product reviews, "I use both (reviews and forums), but definitely forums are better, because you get to know they are real people. You get to 'talk' with them like friends."

5.2 Relationship Expectations & Challenges

5.2.1 Users find it beneficial for the bond when engaged in shopping topics with family and friends. From our interviews, we found that in most situations, people believed shopping conversations positively contributes to their social connections with their relational partners. For example, Alan told us, "It really helps (with the bond). They feel that I find them important to help me make my decisions. They feel they are important to me." Similarly, Steve also talked about the impact of shopping topics on his social relationships, "It's always a positive. We are just sharing our experience and getting to know if you can get better deals, better products. Yes, we are not forcing anyone. We are just sharing the experience, trying to help them."

Some participants also explained how these shopping conversations led to increased social bonds. As Zach put it, "They (shopping conversations) definitely do help with the bond. If they show me a video, I watch it, and that's it. If they show me shoes or clothing stores and then I buy it, someone's gonna ask one day, like 'yo, where did you get your shoes from?' 'My friend showed me the site where I got them from.' It kind of does build into the bond of the friendship." Jack, also described how shopping topics positively impact his friendship with others, "So if I see something nice, I might show it to my friend, and if they see something nice, they show it to me. It feels like we are thinking of each other all the time, and that's what friendship means. For family, it's the same thing, it means we care for each other."

5.2.2 Users exhibit reluctance and uncertainty of sharing/discussing about shopping on social media. We repeatedly heard participants say they were reluctant to share items on SNS because they are unsure how others would react. Jack told us, "Because I'm very shy [...] about buying things and sharing it on social media. I don't know what others [will] think about the post." We also discovered that even when friends did not explicitly "like" a post, some were actually paying attention to shared items. Janie mentioned, "I usually won't respond [directly] but I would think 'this is nice,' or sometimes if I see something, 'maybe I want that.' If it's really nice, I look it up."

Another reason that prevents people from sharing products on SNS is the emergence of online influencers who share "everything" on social media, leaving an impression that "sharing is a professional job" (Sheila). For example, Daisy told us, "Someone I follow on Instagram, she's a blogger. So when she's at a store, she'll post a picture of the things she likes and she tries on. So I can see what she's interested in buying." When asked about the attitudes toward sharing items on social media, most participants said they would not be annoyed, as long as it was not spamming their news feeds.

As Elizabeth said, "If they [influencers] share too much—if they share every single thing they buy—it can get annoying. But if it's kind of an occasional thing, something really special to them, or they just felt like sharing it, by all means, go ahead."

5.3 Impression Management & Formation

5.3.1 Users carefully select the contents to share on social media. In line with prior impression management research on online participation [36], users post contents on SNS for self-efficacy and to establish a personal image among their social circles. Liz, who shared a lot of her photography on Facebook, told us, "I can post my own content, things I like, things I'm proud of... I'll post photos whether it's of myself or something that I'm proud of. Or taking some photos, consider them to be photography." Similarly, Amanda also carefully picked what to share and what not to share on SNS to maintain an impression among friends, "I would like to share things that represent who I am, so that other people can see that these pictures are consistent with who I am, not disconnected from that... Maybe sometimes I will be doing silly things with my friends and having fun, but I wouldn't necessarily want that to be there, because I don't want someone to get a wrong impression, because that's not the person that I wanna convey who I am."

5.3.2 Users tend to refer to specific person(s) for shopping advice based on item types. Our findings suggest that people are inclined to repeatedly ask for suggestions and opinions from the same person, or a small group of friends. For example, Bob told us, "For electronics, I usually prefer [to ask] one of my friends, he's good at electronic things, because he usually buys all the electronics online, like Amazon or somewhere. That's why I ask for his opinion. He's good at that." Daniel's response was similar, "I have two older sisters, and both of them are married now. They are familiar with the recent trends. They know particularly about fashion. They know what guys wear these days... for clothing, I always ask them."

People picked their "go-to person(s)" based on their jobs, personal image, and day-to-day communications. Occupation or working history can be a strong indicator of one's expertise. As Jack said, "My friend he was working at a mobile shop, so definitely he would have a good knowledge about the new model, and what features are the good ones. If they are in the field, it obviously tells us that they have good knowledge about it. Whenever I wanna buy a phone or some other electronic stuff, I like to ask him." In comparison, Zach knew his friends better through everyday interactions, "In your group of people, you have a sense like who dresses nice, and who is good at sports, and who knows political stuff, and who knows math, because that's the birth of your friendship... If I know my friend, I know him for being stylish, for being sporty, whenever I need advice, I know whom to go to."

6 DISCUSSION

Our interview data demonstrated the way people engage themselves in collaborative online shopping activities with their family and friends, as well as other users through online reviews and discussion forums. The most surprising finding was the insufficient support of consistent and effective user interaction(s) from the social and relational perspectives on both social media systems and online shopping platforms.

As discussed earlier in the paper, We found that users were concerned about "social appropriateness" of discussing shopping on social media, so "privatizing" the shopping conversations with family and friends was common when the communication partners were identified. We also discovered the desire for further interaction with other "users" on review sites and discussion forums, beyond the "reviews" and "posts" on the platform, as some users perceive themselves as "part of the community" of people with similar shopping interests. Unfortunately, such desire was not fully tapped due to inconsistent interaction patterns between users with similar shopping interests. The lack of timely responses limits the possibilities and prospects of any further subsequent interpersonal interactions among users.

While technology allows convenient communication with existing social network, easy access to tremendous information, and opportunities to reach out to more people with similar shopping interests on online platforms, it also presents challenges of smooth interpersonal interactions in the two main forms of user participation in current social shopping systems.

First, people use their social media to collaboratively shop with family and friends, including sharing products and shopping information, asking for suggestions, making recommendations, etc. Participants expressed mixed attitudes toward sharing and discussing about shopping on social media. On the one hand, users consider social media as a powerful tool, in terms of information exchange and dissemination, to reach the maximum number of their existing social networks, and possibly more through reposts and retweets. Sharing shopping on social media (e.g., Facebook, Instagram) is the most efficient way to get useful and reliable feedback from their existing social circles. On the other hand, people tend to switch to private messaging channels (e.g., text, WhatsApp) as long as they found their communication partners regarding specific shopping topics, due to the uncertainty of the "social appropriateness" of shopping conversations on general social media platforms. This makes it difficult for other users to engage in the subsequent conversations and join if they have useful knowledge or information.

Second, people use reviews to research the products they are interested in purchasing and engage in conversations with other users in discussion forums. Online reviews and forums provide another way for users to know about the items and explore other people who shared similar shopping interests or experience. Interestingly, we found that users exhibit different patterns in the use of these two systems. For online marketplaces (e.g., Amazon, eBay reviews), the reviews are typically listed by product, rather than by the time when the review is posted for a type of items, which means users need to wait for an extended time if they want to communicate with other people. As a result, the asynchronous nature of communication mechanism limits the possibilities of more interactions between users. Therefore, though users often read and sometimes write reviews on online shopping marketplaces, participants reported that they rarely engage in interactions with other users. For shopping forums (e.g., camera, sneakers), more real-time conversations happen between users, which lead to more opportunities for interactions on the shopping topics they are interested in discussing about. Participants reported that sometimes the conversation went from initial conversation to a broader topic, which suggested that meaningful interactions could be established between forum users.

However, people find it hard to "friend" or follow another user on discussion forums for any subsequent interactions.

Despite all these challenges, participants found social shopping interactions beneficial for the social bonds. We learned from the participants that shopping conversations lead to more interactions between family and friends, and thus positively contribute to enhancing existing social relationships. The findings reported in this paper also indicated that collaborative shopping activities, under certain circumstances, serve to improve people's social ties between users. These observations also suggest that social shopping activities could be a promising introductory context for facilitating social matching on review sites and online shopping forums.

7 DESIGN IMPLICATIONS

7.1 Supplemented Social Functions

We found that users were likely to discover people with shared shopping interests on platforms such as review sites and shopping forums, but opportunities for further social actions were typically not offered in these systems. As a result, people found it difficult to sustain interaction between specific users, even if they intended to. To address this issue, systems could include social functions such as "follow" or "friend" to better promote user participation and engagement on these platforms.

Since most shopping websites and forums already require users to register accounts for posting any contents, adding social functions would not necessarily be technically complex. This would allow users to keep record of other users who shared similar interests or experience, further conversations on shopping topics, and explore potential online shopping partners for future references. The benefits brought by this implementation would not be limited for shopping advice per se, but might contribute to extending shopping conversation into various contexts as well. For example, supposing George wants to buy a camera and finds Tim's review about a specific camera to be thoughtful on a camera forum, George may either "follow" Tim for his following reviews on various cameras and lens, or even "friend" Tim, based on mutual acceptance, to have deeper conversations about the best camera that accommodates George's needs. Through the conversations, George and Tim may find other interests in common, such as photography and traveling, which presents potential social matching opportunities.

Another implementation of introducing social functions to facilitate people's social shopping activities could be adding a "reviewer recommendation" feature on online marketplaces (e.g., Amazon, eBay, Best Buy). Similar to the concept of "product recommendation", the "reviewer recommendation" feature would allow users to find people who have experience of using products that are related to the users' shopping interests, and are willingness to share. To implement this feature without annoying the users, online platforms would need to explicitly ask for people's consent to join the "recommendation program." One of many ways this could be implemented is by explicitly asking if users are willing to share their experience with individual shoppers, when they post reviews about certain products on the websites, which would allow users to have more personalized communication channels with other users, and explore potential online shopping partners.

7.2 Social Shopping Context

When users participate in shopping activities and related discussions on social media, continued interactions are likely. However, a major challenge is the uncertainty of other people's attitudes towards engaging in shopping conversations in the first place. When users share and discuss about shopping with a broader range of their friends, they are unsure how others will react and how it would impact their impression management. Therefore, even if people perceived the power of social media for advice-seeking and information exchange, users exhibited reluctance of initiating shopping-related posts and tended to switch to relatively private channels when communication partners were found. In other words, they want to share but are not doing so, because they are not sure if it is socially appropriate to share and discuss about shopping on SNS.

To address the issue, SNS would need to construct a context which users feel confident that shopping topics are "socially appropriate" to share and discuss about. One way this could be implemented is through a special tag of something like "#shopping." When implemented, users would need to explicitly turn the feature on in the system to view any of their friends' posts with a special "#shopping" tag. The design helps filter who are not interested in viewing any shopping-related posts, as they would not see any of these posts without turning on the feature. By using the tag, users would feel comfortable sharing and discussing about shopping and confident that it is "socially appropriate" to be engaged in such shopping interactions. Additionally, since SNS often use an ad-based business model, meaning users have the access to the service for free, but the data is used for advertisers to sell products and services. Making it comfortable and socially appropriate to share and discuss about shopping helps with better understanding of people's shopping interests and needs, which socially and financially benefit the platforms as well.

8 CONCLUSION AND FUTURE WORK

This exploratory, qualitative research aimed to develop a better understanding of user participation in current social shopping platforms, examining how people's social connections can be established and enhanced through online collaborative shopping activities. We used semi-structured interviews to uncover underlying motivations and challenges in user participation and interaction with others in social shopping across different systems and contexts. Our study found that shopping interactions lead to positive impact on people's social connections, and identified concerns of "social appropriateness" as a major challenge that negatively affects user participation on various online platforms.

Inspired by our findings, we presented and discussed a series of design implications for incorporating social functions into online shopping websites and forums, and a special tagging feature to make people more comfortable and confident in sharing and discussing shopping topics on social media. Our future work will examine scenarios that may lead to establishing new social connections between online shoppers with similar shopping interests, and reinforcing existing friendships through collaborative shopping interactions. Specifically, we are interested to see how design facilitates establishing and enhancing user's relationship establishment and enhancement in the context of social shopping.

REFERENCES

[1] L. Tredinnick, "Web 2.0 and business: A pointer to the intranets of the future?," *Business information review*, vol. 23, no. 4, pp. 228–234, 2006.

[2] T.-P. Liang, Y.-T. Ho, Y.-W. Li, and E. Turban, "What drives social commerce: The role of social support and relationship quality," *International Journal of Electronic Commerce*, vol. 16, no. 2, pp. 69–90, 2011.

[3] D.-H. Park, J. Lee, and I. Han, "The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement," *International Journal of Electronic Commerce*, vol. 11, pp. 125–148, jul 2007.

[4] J. Lee, M. S. Cha, and C. Cho, "Online service quality in social commerce websites," in *Contemporary research on E-business technology and strategy*, pp. 335–351, Springer, 2012.

[5] N. Hajli, "Social commerce constructs and consumer's intention to buy," *International Journal of Information Management*, vol. 35, no. 2, pp. 183–191, 2015.

[6] R. T. Wigand, R. I. Benjamin, and J. L. Birkland, "Web 2.0 and beyond: implications for electronic commerce," in *Proceedings of the 10th international conference on Electronic commerce*, p. 7, ACM, 2008.

[7] S.-H. Lee, D. DeWester, and S. R. Park, "Web 2.0 and opportunities for small businesses," *Service Business*, vol. 2, no. 4, pp. 335–345, 2008.

[8] Z. Huang and M. Benyoucef, "User preferences of social features on social commerce websites: An empirical study," *Technological Forecasting and Social Change*, 2014.

[9] Y. Xu and M. J. Lee, "Shopping as a social activity: Understanding people's categorical item sharing preferences on social networks," in *Companion Proceedings of the 23rd International on Intelligent User Interfaces: 2nd Workshop on Theory-Informed User Modeling for Tailoring and Personalizing Interfaces (HUMANIZE)*, 2018.

[10] D. Kim, "Under what conditions will social commerce business models survive?," *Electronic Commerce Research and Applications*, vol. 12, no. 2, pp. 69–77, 2013.

[11] Y. Lu, L. Zhao, and B. Wang, "From virtual community members to c2c e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention," *Electronic Commerce Research and Applications*, vol. 9, no. 4, pp. 346–360, 2010.

[12] Y. Xu and M. J. Lee, "Personalizing user interactions in a social shopping context and open challenges.," in *IUI Workshops*, 2019.

[13] L. Terveen and D. McDonald, "Social matching: A framework and research agenda," *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 12, no. 3, pp. 401–434, 2005.

[14] C. Grange and I. Benbasat, "The value of social shopping networks for product search and the moderating role of network scope," 2013.

[15] J. Chen, H. Xu, and A. B. Whinston, "Moderated online communities and quality of user-generated content," *Journal of Management Information Systems*, vol. 28, no. 2, pp. 237–268, 2011.

[16] C. Baethge, J. Klier, and M. Klier, "Social commerce—state-of-the-art and future research directions," *Electronic Markets*, vol. 26, no. 3, pp. 269–290, 2016.

[17] C. Wang and P. Zhang, "The evolution of social commerce: The people, management, technology, and information dimensions.," *CAIS*, vol. 31, no. 5, 2012.

[18] R. G. Curty and P. Zhang, "Website features that gave rise to social commerce: a historical analysis," *Electronic Commerce Research and Applications*, vol. 12, pp. 260–279, jul 2013.

[19] A. T. Stephen and O. Toubia, "Deriving value from social commerce networks," *Journal of marketing research*, vol. 47, no. 2, pp. 215–228, 2010.

[20] A. Afrasiabi Rad and M. Benyoucef, "A model for understanding social commerce," *Journal of Information Systems Applied Research*, vol. 4, no. 2, p. 63, 2011.

[21] X. Hu, X. Wu, P. Yin, and X. Zheng, "An investigation into consumers' continued social shopping intentions.," in *PACIS*, p. 63, 2017.

[22] R. Olbrich and C. Holsing, "Modeling consumer purchasing behavior in social shopping communities with clickstream data," *International Journal of Electronic Commerce*, vol. 16, no. 2, pp. 15–40, 2011.

[23] Y. Xu and M. Lee, "Understanding user participation and interaction in online shopping communities from the social and relational perspectives," in *Proceedings of the 53rd Hawaii International Conference on System Sciences*, 2020.

[24] H. Zhang, Y. Lu, S. Gupta, and L. Zhao, "What motivates customers to participate in social commerce? the impact of technological environments and virtual customer experiences," *Information & Management*, vol. 51, no. 8, pp. 1017–1030, 2014.

[25] D.-H. Shin, "User experience in social commerce: in friends we trust," *Behaviour & information technology*, vol. 32, no. 1, pp. 52–67, 2013.

[26] T. Daugherty, M. S. Eastin, and L. Bright, "Exploring consumer motivations for creating user-generated content," *Journal of Interactive Advertising*, vol. 8, no. 2, pp. 16–25, 2008.

[27] X. M. Zhang and F. Zhu, "Group size and incentives to contribute: A natural experiment at chinese wikipedia," *American Economic Review*, vol. 101, no. 4, pp. 1601–15, 2011.

[28] R. M. Montoya and C. A. Insko, "Toward a more complete understanding of the reciprocity of liking effect," *European Journal of Social Psychology*, vol. 38, no. 3, pp. 477–498, 2008.

[29] D. E. Byrne, *The attraction paradigm*, vol. 11. Academic Pr, 1971.

[30] L. Carli, R. Ganley, and A. Pierce-Otay, "Similarity and satisfaction in roommate relationships," *Personality and Social Psychology Bulletin*, vol. 17, no. 4, pp. 419–426, 1991.

[31] B. I. Murstein and G. D. Beck, "Person perception, marriage adjustment, and social desirability.," 1972.

[32] M. Kaptein, D. Castaneda, N. Fernandez, and C. Nass, "Extending the similarity-attraction effect: The effects of when-similarity in computer-mediated communication," *Journal of Computer-Mediated Communication*, vol. 19, no. 3, pp. 342–357, 2014.

[33] J. McGonigal, *Reality is broken: Why games make us better and how they can change the world.* Penguin, 2011.

[34] M. R. Leary and R. M. Kowalski, "Impression management: A literature review and two-component model.," *Psychological Bulletin*, vol. 107, no. 1, pp. 34–47, 1990.

[35] N. Ellison, R. Heino, and J. Gibbs, "Managing impressions online: Self-presentation processes in the online dating environment," *Journal of computer-mediated communication*, vol. 11, no. 2, pp. 415–441, 2006.

[36] N. C. Krämer and S. Winter, "Impression management 2.0: The relationship of self-esteem, extraversion, self-efficacy, and self-presentation within social networking sites," *Journal of media psychology*, vol. 20, no. 3, pp. 106–116, 2008.

[37] A. Blanchard and M. Markus, "The experienced sense of a virtual community: Characteristics and processes," *ACM SIGMIS Database*, vol. 35, no. 1, pp. 64–79, 2004.

[38] E. Goffman, "The presentation of self in everyday life. 1959," *Garden City, NY*, p. 259, 2002.

[39] J. G. Proudfoot, D. Wilson, J. S. Valacich, and M. D. Byrd, "Saving face on facebook: privacy concerns, social benefits, and impression management," *Behaviour & Information Technology*, vol. 37, no. 1, pp. 16–37, 2018.

[40] M. Sunnafrank, "Predicted outcome value during initial interactions: A reformulation of uncertainty reduction theory," *Human Communication Research*, vol. 13, no. 1, pp. 3–33, 1986.

[41] D. Zytko, S. A. Grandhi, and Q. Jones, "Impression management struggles in online dating," in *Proceedings of the 18th international conference on supporting group work*, pp. 53–62, ACM, 2014.