

Customer Engagement in Educational S-Commerce Communities: An Empirical Study

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Abstract: Many previous scholars have investigated user behavior on social media from multiple perspectives over the last decade. Studies have shown that people today regularly join online communities to find necessary information. Notably, we found that there are a large number of education-related online communities and community members in Hong Kong. In these communities, the majority of posts pertain to interest class enrolment, extracurricular tutorial class enrolment, organizing outdoor activity and parents-child campaign. So, what makes some posts more popular and appealing in this kind of communities? What motivates the interactive behaviour between posters and users? Nevertheless, there are few studies focusing on user behaviors in education-related communities. Therefore, this research aims to examine the impact of post content features in educational online community on customer engagement in online community related to education. Considering the trend of digital transformation in education after Covid-19, we also consider variables such as online vs. offline teaching and the availability of trial classes as potential influencing factors. Consequently, we have incorporated these variables into our research model. The research model employed in this research adopted the S-O-R (stimuli-organism-response) model, utilizing user trust as a mediating variable. This study adopts a quantitative approach and collects data in the form of a questionnaire. The questionnaires will be filled by active participators in education-related online communities on Facebook platform and some parents offline. The questionnaires gathered will be analyzed through PLS-SEM (structural equation modelling) utilizing smartpls. This research can bring value to the evolution of social media platforms. Developers can refine their algorithms for pushing posts based on the findings. In addition, the questionnaire can assist online community managers and users fast-track identification of trustworthy posts. Finally, posters are able to adjust the content of their posts based on the outcome derived from the analysis to improve the quality and attractiveness of their posts.

Keywords: Social media, Online communities, Customer engagement, Recommendation intention, S-O-R Model, PLS-SEM

1. Introduction

In recent years, the normalization of social media usage has indisputably provided users with an abundance of convenient information and news through various platforms. Particularly noteworthy is the increased reliance on the robust information storage and retrieval capabilities of social media platforms, a trend intensified by the sudden outbreak and subsequent resolution of COVID-19. This dependence is exemplified by the active engagement in online virtual communities (Shen et al, 2019). Consequently, to leverage the rapid dissemination and real-time nature of social media, traditional e-commerce is gradually transitioning to social commerce (s-commerce) using virtual communities as a medium to explore new business opportunities. The potential of s-commerce is evidenced by its projected valuation of 84.2 billion USD by 2024, anticipated to contribute 7.8% to the overall U.S. retail e-commerce sales. Despite the promising prospects of s-commerce supported by extensive data and literature, this transformation faces numerous challenges. For instance, certain features of e-commerce platforms, such as detailed product descriptions, personalized consulting services, and sophisticated recommendation systems, are not inherently present in virtual communities. Conversely, virtual communities possess unique charms, including close social relationships among members and real-time user interactions. Identifying the key factors influencing community customers' willingness to engage in s-commerce, and achieving a seamless transition from e-commerce to s-commerce, are critical questions.

Prior research in the realm of s-commerce has primarily focused on brand and shopping communities (Olbrich and Holsing, 2011; Kaur et al, 2020; Xi and Hamari, 2020), with limited studies on education-related online communities. Therefore, this article empirically investigates the factors influencing customer engagement and recommendation in educational s-commerce communities, delving into the current status of s-commerce transformation in the education sector. Educational social commerce communities, primarily revolving around educational information, offer insights into interest activities, tutoring, parenting activities, and children's education topics, as illustrated. A search on Facebook using keywords like "interest classes", "children's courses", and "homework tutoring" reveals the existence of over a hundred related communities with memberships exceeding 50k, as shown in. Moreover, an average of 200 posts per day within these communities indicates a high demand and significant influence on the Facebook platform.

Given that investigating customer intentions and engagement is crucial for the development of social commerce (Liang et al, 2011; Zhang et al, 2014), it is essential to comprehend the factors driving customer engagement.

The impact of environmental factors on consumer behaviors, including website characteristics, platform atmosphere, and interactive experience, has been extensively studied in e-commerce communities (Parboteeah, Valacich, and Wells, 2009). This article explored how post-related features, typically informational quality, poster credibility, and post vividness, influence customer engagement. In general, this article proposes the following questions:

Q1: How do the informational quality, poster credibility, and post vividness impact customer engagement in educational s-commerce communities?

Q2: Whether post trust is used as a mediator variable between post features and customer engagement.

The remainder of the article is organized as follows: Section 2 reviews existing literature around the theoretical background of this study. Section 3 presents the research model and hypotheses based on these theories. Section 4 discusses the methodology of the study, followed by findings and discussion in Section 5. Section 6 concludes the article and propose some limitations of this study.

2. Related Work

2.1 S-O-R Model

The Stimulus-Organism-Response (S-O-R) framework, originally introduced by Mehrabian and Russell (1974) in environmental psychology, suggests that specific environmental elements trigger cognitive and emotional responses in individuals, thereby influencing their behaviors. This model has been widely embraced in various academic fields. For example, Eroglu, Machleit, and Davis (2003) employed the S-O-R framework to investigate interactions, illustrating how atmospheric cues in online shopping websites affect consumers' states, then shaping their buying decisions. Anne Mollen and Hugh Wilson (2009) employed this model to explore the connection between website attributes and customer purchase intention.

Over the past decade, numerous scholars have extended the S-O-R model to study consumer and customer behavior (Islam and Rahman, 2017), affirming its suitability for researching customer behavior.

In a Stimulus-Organism-Response (S-O-R) model, the stimulus (S) is defined as an environmental element that triggers the person, influencing their internal organismic conditions (Eroglu, Machleit, & Davis, 2001). Previous research has identified a diverse range of stimuli in the S-O-R framework, including social support (Zhang et al, 2014), flow (Gao and Bai, 2014), feelings (Vieira, 2013; Kim and Johnson, 2016), and interaction. This research centers on post characteristics that have a notable influence on customers' intentions to engage in educational information communities.

The organism (O) symbolizes a intermediary stage that connect the S and R, facilitating this interaction. This middle state includes customers' emotional well-being, such as mood, emotions, and mindset, in response to environmental cues. Users transform these external stimuli into valuable information to support decision processes. Thus, in this essay, I categorize the intermediary states into post trust.

The response (R) represents customers' approach or avoidance behaviors, as outlined by Sautter, Hyman, and Lukosius (2004). Approach behaviors encompass favorable reactions from community members, such as likes, comments, and shares. Hence, customer engagement is defined as the response (R) for this research.

2.2 Educational S-Commerce Community

Social media encompasses a suite of computer-mediated applications, established on the ideological and technological bedrock of Web 2.0. It empowers individuals to create and disseminate their content, encompassing information, ideas, thoughts, and knowledge, within networks and online communities (Kaplan and Haenlein, 2010). Social commerce communities serve as an innovative virtual platform facilitating interactions and communications between businesses and customers, rooted in various social media platforms. For example, Wang et al. (2020) emphasized the role of social support in boosting consumer engagement within social commerce communities, while Molinillo et al. (2020) identified specific community factors that drive consumer engagement.

While existing research has predominantly concentrated on brand-centric s-commerce communities, conversely, this study focuses on educational s-commerce communities. In these communities, various businesses, including individual vendors and educational institutions, can showcase their tutoring classes, activities, or other education-related products through posts, with users interacting through the platform. Meanwhile, when purchasing educational products, consumers consider factors like the instructor's reputation

and course quality (Ma, Sharif, & Khong, 2022), indicating higher standards for educational services. Consequently, this study delves into customer behavior within these specialized educational communities, given the unique attributes of education-related offerings.

3. Research Model and Hypothesis

This paper utilizes the Stimulus-Organism-Response (S-O-R) model, initially introduced by Mehrabian and Russell in 1974, as the core framework for assessing the factors that impact customers' inclination to engage and advocate. In this model, three post features argument quality, source credibility and post vividness are as the stimulus (S). Post trust is conceptualized as the organism (O), while customer engagement willingness is designated as the response (R), thereby forming the research model of this study. The research model is depicted in Figure 1.

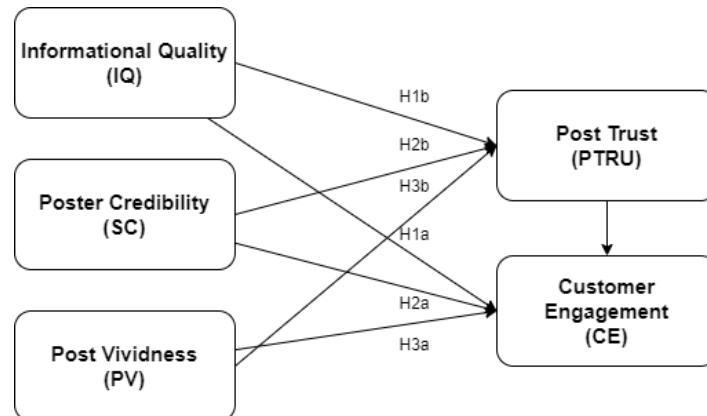


Figure 1: Research Model

3.1 Post Features

Numerous scholarly studies have highlighted that customers' attitudes and behaviors in online communities are influenced by various attributes of posts, such as informational quality, poster credibility and post vividness. Consequently, this paper formulates hypotheses regarding the correlation between these attributes and customer trust.

3.1.1 Influence of informational quality on customer engagement

Petty, Brinol and Priester (2009) defined an argument as a piece of information relevant to assessing the true merits of a position. In this study, the information quality is a comprehensive construct evaluating by the logic, completeness and argument of a post. Lots of previous articles have implies that viewers prefer to believe in the information that is logically presented and well-argued. Meanwhile, Customers heavily rely on informational quality to form attitudes towards messages, especially when uncertain about a blog's credibility. Thus, we hypothesize a link between argument quality and trust in a post.

H1a: Informational quality of posts positively affects customer engagement.

H1b: Informational quality of posts has an indirect impact on customer engagement through post trust.

3.1.2 Influence of poster credibility on customer engagement

Historically, poster credibility has been assessed based on expertise and trustworthiness, indicating the poster's level of knowledge and perceived sincerity, respectively. Pornpitakpan (2004) expanded this concept by adding source likeability as a component. Studies have shown positive associations between poster credibility and factors such as brand community loyalty (Syn and Kim, 2013), health community engagement (McLaughlin, 2016), and advertisement credibility (Morris, Choi, and Ju, 2016). Based on these findings, we propose hypotheses relevant to educational counseling communities.

H2a: Poster credibility of posts positively affects post trust.

H2b: Poster credibility of posts has an indirect impact on customer engagement through post trust.

3.1.3 Influence of post vividness on customer engagement

Vividness refers to how a medium engages individuals' senses, including breadth (the range of senses involved) and depth (the intensity of sensory involvement) (Steuer, Biocca, and Levy, 1995). For instance, video ads are always considered more vivid than image ads and texts ads because they stimulate both visual and auditory senses. Research has demonstrated that vividness captures attention in TV and online ads and boosts click-through rates for banner ads. In the context of brand community posts on Facebook, vivid posts tend to attract more attention than less vivid ones. Therefore, This article proposes the following hypotheses:

H3a: Post vividness positively affects post trust.

H3b: Post vividness has an indirect impact on customer engagement through post trust.

4. Methodology

In order to obtain data, a questionnaire was designed. The measurement scales used for each constructs were all adapted from previous relevant studies. Based on the survey objects of this paper, all the questionnaires are filled by residents living in Hong Kong. After data collecting, twenty number of questionnaires were excluded because of incompleteness and vague answers. Finally, 314 questionnaires are employed for future analysis.

Table 1 displays the basic information of respondents, such as gender, age, and education level. Most part of respondents fell within the 27-40 age range, constituting approximately 71.34% of the sample, which aligns well with the research theme. Around 50% of the participants held a bachelor's degree.

Table 1: Descriptive analysis

		Frequency	Percentage
Gender	Male	121	38.54%
	Female	193	61.46%
Age range	20~26 years old	8	2.55%
	27~40 years old	224	71.34%
	41~60 years old	76	24.20%
	More than 60 years old	6	1.91%
Education level	Below bachelor	144	45.86%
	Bachelor	144	45.86%
	Master or higher	26	8.28%

Table 2: Direct Effect Testing and Mediating Effect Testing

Hypothesis	Path	Path coefficient(PC)	T	P	Results
H1a	IQ -> CE	0.085	1.396	0.163	Unsupported
H2a	PC -> CE	0.089	1.558	0.119	Unsupported
H3a	PV -> CE	0.138	2.296	0.022	Supported
H1b	IQ -> PTRU -> CE	0.012	1.308	0.191	Unsupported
H2b	PC -> PTRU -> CE	0.003	0.414	0.679	Unsupported
H3b	PV -> PTRU -> CE	0.014	1.319	0.187	Unsupported

5. Findings and Discussion

We presented the results of the evaluation of the structural model in Table 2, where the path coefficients (PC) were measured and significant paths were indicated with asterisks in the P-value column. The significance tests for all paths were based on the bootstrap resampling procedure. It can be observed that H3a were supported, while H1a, H2a, H1b, H2b and H3b were not supported. Firstly, among the variables developed based on three characteristic attributes of educational information community posts, it was confirmed that only post vividness (PC = 0.138, T = 2.296) significantly influenced customer engagement directly. However, argument quality (PC = 0.085, T = 1.396) and source credibility (PC = 0.089, T = 1.558) did not have a significant impact on customer

engagement. Secondly, The indirect path through Post Trust all have very low path coefficient ($PC = 0.012$, $PC = 0.003$ and $PC = 0.014$) and not significant p-value, indicating that this indirect effect is not statistically significant.

6. Conclusion and Limitations

This study offers several theoretical advancements. While many factors influencing customer decision-making have been validated in brand, information sharing and health communities, there has been a scarcity of research in educational s-commerce communities. Drawing from the S-O-R model, this paper introduced three independent variables related to post features to investigate their effects on consumer engagement in community activities. Particularly, the significance of post vividness in influencing consumer engagement was established, enhancing the scholarly understanding within the realm of social commerce. The other relationships, whether direct or mediated, do not reach statistical significance, suggesting that Argument Quality and Source Credibility may not be as important for Customer Engagement as the vividness of the posts in the context studied. This could imply that, for this particular dataset and within the model tested, the clarity, imagery, and emotional appeal conveyed in posts (PV) are more influential on CE than the logical soundness of arguments (IQ) or the perceived trustworthiness of the source (PC).

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