Artificial Intelligence Applications on the Influencing Factors of Short Video Marketing on Consumers' Buying Behavior

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Abstract: Live streaming has emerged as an emerging marketing strategy that has a significant impact on consumers' purchasing psychology and behaviour as human society transitions to the mobile Internet era. This is especially true in the wake of the recent epidemic and the domestic consumption stimulation cycle, where live streaming has become a new consumption trend. In this study, a model of the impact of shared recommendations on customers' purchasing decisions is constructed based on two factors: product display vividness and user engagement, which is based on the idea of computer-mediated communication. The findings of the experiment demonstrate that consumer attention is directly influenced by product vividness and user interaction, both of which have a significant impact on consumers' psychosocial distance and emotional intensity, and consequently have a significant influence on consumers' purchasing decisions.

1 INTRODUCTION

Since the dawn of the twenty-first century, humankind has greatly improved material production, information and communication technology (ICT) and mobile Internet technology have advanced quickly, and the role of emerging media in the mobile Internet era has grown in importance in people's daily lives. Statistics show that China has the most Internet users in the world, with close to 1 billion users as of March 2021. Of these, more than half are using mobile devices, and more than 700 million people utilize online shopping sites (Bygstad, 2016).

Consumers are growing weary of the novelty of the e-commerce model and are dissatisfied with the lack of new developments in e-commerce shopping. In order to address the varied wants of consumers, new marketing strategies are required. As a result, creative e-commerce marketing models have emerged as the key to overcoming the industry's development bottleneck.

The premise and model of this study are based on the current theoretical research on live-streaming and in-depth theoretical analysis. This study is an in-depth investigation of the marketing phenomena of live-streaming in the new media in the context of the mobile Internet. Through qualitative interviews, questionnaire surveys, structural equation modelling, and simulation tests, this study explores how the live-streaming marketing technique influences customers' psychology in the new media environment and how this influence ultimately affects consumer behavior.

2 LITERATURE REVIEW

On mobile social commerce platforms like Mushroom Street and Xiaohongshu, there are currently a huge amount of sharing recommendations made by regular users that successfully pique people's interest in purchasing things as well as promoting and selling them. In contrast to conventional e-commerce platforms, it primarily uses videos to present products and provide consumers with pertinent product information as opposed to text descriptions and pictures. Short videos are also used to convey the effects and feelings of using products while fostering a certain level of interactive experience. China's social e-commerce market reached 2 trillion in value in 2019, a notable rise of 71.71% from the previous year; social e-commerce users increased by 17.26% to 713 million, representing a sizable business opportunity (China Internet Association, 2019). The platform's

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activity and product relevance have grown dramatically as a result of the tight user contact, and it is now better able to satisfy the customers' increasingly customized and varied consuming needs (China Social E-Commerce Market Data Report 2019).

2.1 Reinforcement Learning

The boundaries of time and geography have been further dismantled by information interchange and social contact, and people's acceptance, recognition, and engagement in online product recommendations (OPRs), particularly those provided by regular consumers, is growing. In conclusion, social commerce is quickly developing into a scalable and high-growth sector of the m-commerce business, representing an important trend in the future development of e-commerce, thanks to the ongoing optimization and invention of online product suggestions. It is crucial to obtain insight into the psychological conditions and behavioral goals of consumers' online consumption in order to comprehend the efficiency of shared recommendations.

2.2 Natural Language Processing

According to Hajli and Sims (2015), social commerce may also refer to a social platform that came into existence with the rise of Web 2.0 and allows users to create original content and share their experiences. their encounters (Dartmouth College. 2017). This study summarizes and investigates the impact of shared recommendations on consumers' purchase decisions at the psychological level based on the aforementioned theoretical underpinnings and the analysis of the current research situation, then proposes the research model, as shown in the Figure 1. Natural language processing, which is the study of theories and techniques for successful human-computer interaction using natural language, is one of the most challenging problems in the field of artificial intelligence.

2.3 Eye-Movement Experiment

Our focus has always been finite, valuable, and hard to come by. But what makes the present different is that technology advancements have made a dizzying amount of information available that is purposefully meant to grab our attention. It has never been simpler for the general population to attract such high amounts of personal attention via platforms like social media.

Eye tracking methods fall under the category of Neuro-Physiological (NP) approaches, which use oculomotor devices to record people's eye movements in a specific environment. The data from this combination is then used to analyze and discuss the inherent relationship between eye movements and cognitive activity. Around 80% to 90% of external information is acquired through the eyes, and the human brain significantly relies on vision for information processing (Hong, 2020). The direct hypothesis and the eye-brain hypothesis of American psychologists Just and Carpenter both indicate to a direct connection between eye movements and cognition, and cognitive psychology has thus discovered many reliable connections between eye movements and cognition (Ian, 2001).

2.4 Eye Movement Indicator Meaning and Interpretation

In order to understand the peculiarities of participants' information search and browsing activities, gaze - an important aspect of eye movements - is analyzed.

Information processing and gaze are strongly connected. For a brief moment as a person gazes, their eyes are relatively still as their brain extracts information. To analyze reading behavior patterns, page elements, page design recognizability, etc., eye movement metrics, such as gaze duration, number of gaze points, average pupil size, and other common focus metrics, can be employed.

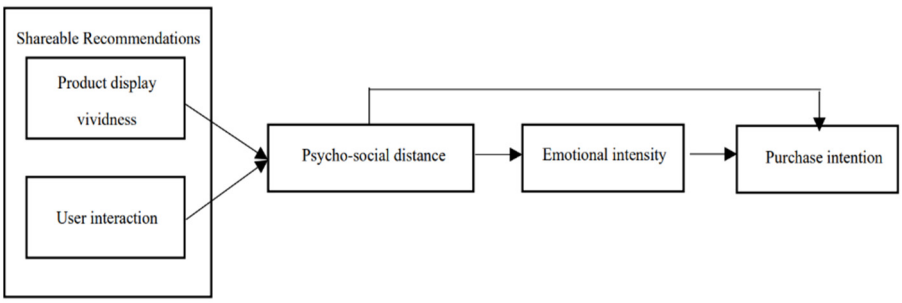

Figure 1: Research Model (Drafted by author).

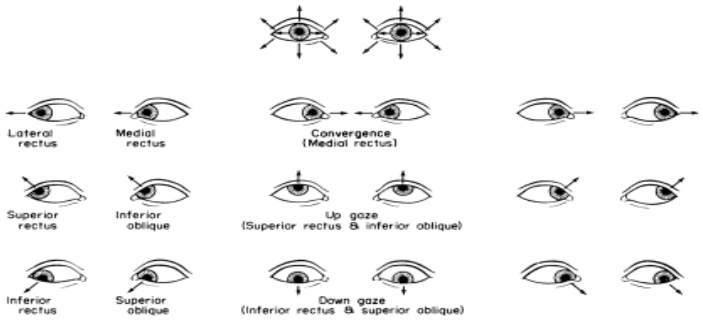

Figure 2: Eye-movement experiment diagram.

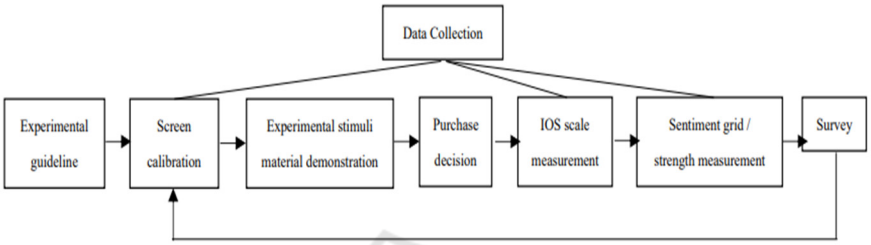

Figure 3: Flow chart of eye tracking scenario experiment (Drafted by author).

2.5 Computer Technology and Consumer's Behavior

With the usage of streaming video and audio, online advertising is starting to resemble television advertising, the most widely used form of media. Consequently, this kind of media may be due to its entertainment value, be more appealing to Generation Y consumers. The article mentions that MSN, Yahoo!, and AOL websites are the most widely used platforms for internet advertising.

Internet users conduct research and add to the data they obtain through conventional advertising. As a result, advertisements that direct viewers to a useful internet resource are more likely to succeed than those that don't. According to the survey, television, radio, magazine advertising, direct mail, and billboard campaigns are those that have been most positively impacted by the Internet.

3 METHODOLOGY

This study is grounded in the marketing theory AIDMA model (attention - interest - desire - memory - action). This study explores how live streaming affects consumer psychology and behaviour in the context of new media, as well as how it works. In particular, the interactivity, entertainment, content, anchor appeal, trust, and fit of live streaming in the new media ecosystem are considered independent variables in this study. Consumer perceptions of a brand's value and buy intention are considered intermediate variables, and actual consuming behavior is considered the dependent variable (Luo, 2013). The eye-tracking experiment's particular data and analyses are included in this thesis along with the hypothesis testing and testing process.

3.1 Methodology Design

Qualitative interviews, questionnaires, and simulated experiments served as the foundation for this study. For analysis and statistical testing to guarantee the study's conclusions are factual and scientific, qualitative interviews, questionnaires, and simulated experiments were employed.

3.2 Eye Movement Experiment Data Collection

The EyeLink 1000 plus creates a separate EDF file with each subject's complete experimental data and saves it on their computer at the conclusion of the eye tracking trial.

The DataViewer software is used to view the eye-movement data files, group the data into time periods for all valid subjects, slice the data into those time periods, create gaze hotspot maps, and export the necessary eye-movement indicators, such as total gaze duration, total number of gaze points, first gaze time, first gaze duration, mean pupil size, and so forth.

Variables	Scale	Scale sources
Psychosocial distance	2	Niu Zhonghui et al. (2010)
Emotional intensity	2	Russell and Weiss (1989)
Purchase intension	4	Dodds et al. (1991)

Figure 4: Survey question extraction and sources (Drafted by author).

	Variables	Unstandardized coefficients		Standard coefficient	-	Sig.	VF
		B	Standard	β Value			
Experimental stimulus	Constant	8.296	1.008		8.231	.000	
Material 1:	Psychosocial distance	-.787.182		-.647	-4.330	.000	1.000
Product display with	R^2			.419			
low vividness	Adjusted R^2			.397			
	D-W value			2.389			
	F value			18.752			
	p			.000			
Experimental stimulus	Constant	8.375	.935		8.960	.000	
Material 2:	Psychosocial distance	-.844	.197	-.663	-4.520	.000	1.000
Product display with	R^2			.440			
high vividness	Adjusted R^2			.418			
	D-W value			2.478			
	F value			20.432			
	p			.000			

Figure 5: Results of regression analysis of consumers' psychosocial distance and their emotional intensity (Drafted by author).

3.3 Hypothesis Testing and Analysis of the Relationship between Psychosocial Distance and Emotional Intensity

The findings that consumer psychosocial distance has a substantial positive effect on affective intensity (1=-0.647, p1=0.0000.001; 2=-0.663, p2=0.0000.001) support the hypothesis H2a. According to the experimental findings, customers' emotional intensity increases with increasing psychosocial distance from them. First, the significance level was met at the =0.001 level and the F-statistic of psychosocial distance in the two experimental contexts with different levels of vividness of product display was p=0.0000.001, indicating that psychosocial distance is sufficient to explain the change in emotional intensity. Third, as a general guideline for covariance assessment, the variance inflation factor (VIF) value created for each predictor variable must be less than 5 [186], and the VIF values were around 2 for both of the various experimental stimulus settings, showing no autocorrelation. The absolute value of the standardised regression coefficient, which has beta values of -0.647 and -0.663 in the two contexts of product display vividness, respectively, represents the degree of effect of the independent variable on the dependent variable. The larger the absolute value of the standardised coefficient, the greater the degree of influence. The Beta values are -0.647 and -0.663 for the two product display vividness scenarios, indicating that psychosocial distance negatively affects affective intensity, and consumers perceive that the effect of psychosocial distance on their affective intensity increases when the product display is more vivid.

4 DISCUSSION

The acceptance of short video marketing, a recently developed marketing strategy, varies depending on the region, the gender, the age, and the income level of the community. It is important for businesses to use unique marketing strategies for various customer segments to increase marketing's focus, which is better

for the growth of marketing initiatives and marketing goals. Therefore, in future research, these elements can be examined as variables (Trope, 2010).

It is worthwhile to investigate which products are more appropriate for short video marketing and which products are more effective through short video marketing because there are many products that can be sold through short video marketing and different products have different characteristics, use cycles, and people (Turvey, 2000). The issue merits investigation. In order to determine the most successful marketing strategies for linked businesses, future study can be divided into product kinds and explore the various effects of various items in short video marketing.

The variable of psychological distance has been studied extensively and there are various views on the dimensional classification of psychological distance. At present, the more accepted dimensional classification in academic circles is divided into three dimensions: temporal, spatial and social.

Prior to summarizing and improving the availability of short-form video marketing, the availability research in the areas of social commerce and online shopping is analyzed. In short-form video marketing scenarios, consumers' purchasing decisions can be influenced by both feature and platform accessibility. According to the prior empirical investigation, platform availability has a greater influence overall in terms of strength. The impact of feature availability, however, is a little weaker. The purpose of computer vision technology is to extract information from objective images, interpret them, and comprehend them by simulating human visual functions on computers. At this time, content monitoring, intelligent logistics, and product picture search are the key contributions of computer vision technology to e-commerce.

Customers are more able to promote their purchase behaviour in the new consumer environment of short-form video shopping due to their increased interest in new forms of technology, communication, and interaction, especially the algorithmic recommendation mechanism of short-form video, which has a higher accuracy of distribution, a benefit that traditional online shopping does not have.

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