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Customer Behavior of Coffee Shop as a Lifestyle in Culture and Creative Industry

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Abstract: There is less research to construct the mathematical model to portray or predict the behavior of customer coffee shop in culture and creative industry. Thus, this study develops a stochastic model which contains atmosphere of the coffee shop, the ideal point of customer's expectation and the real experiment and customer's satisfaction. The empirical data of a real coffee shop will be illustrated for parameter estimation and model validation. The results can applicate for other culture and creative industries.

Keywords: Culture and Creative Industry, Coffee Shop, Stochastic Model

1. Introduction

Culture and creative industries are driving economic growth across the world with their innovation methodologies, including Co-creation and beneficial business models. Culture and creative industries are, therefore, cross-pollinating their ideas within other business sectors, primarily in major urban areas [10]. They break new conceptual ground, and provide the impetus for businesses and organizations to meet the needs of a rapidly changing society dominated [10].

There are various classification systems for defining the cultural and creative industries exist [16]. The most popular definition are from the United Kingdom (UK) Department of Culture Media and Sport (DCMS) which defines the creative industries as 'those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property' [16]. Thus, one of the core values of creative industries is the lifestyle which expresses the links of human culture, society influence in day life.

Lifestyles have been shaped significantly by the emergence of work organizations.

Industrialization and the development of bureaucratic organizations (together with the supporting institutions such as social security systems, education systems etc.) created social groups sharing a social and/or professional background as well as a certain lifestyle. Thus, economic production and the phenomenon of lifestyles have long been linked. It can be express by consumer culture which demonstrates how consumers actively and creatively use narratives and meanings conveyed through brands, products, and service scapes as resources for identity construction [3, 5, 13, 17]. The coffee shop consumption is one of representative demonstration of people lifestyle. People not only drink coffee but also immerse in the atmosphere of shop. Many famous artists have their inspiration inspired by immersing in coffee shops. Thus, this research focuses on the consumer behavior in coffee shop to explore how this creative industry can construct the business model to create economic growth.

This study is organized as four parts. Firstly, the literature such as consumer culture, lifestyle is reviewed in the next section. Secondly, the mathematical model to portray or predict the behavior of customer coffee shop is introduced. This model uses atmosphere of the coffee shop, the ideal point of customer's expectation and the real experiment and customer's satisfaction to predict customer's purchase behavior in coffee shop. Thirdly, the empirical data of a real coffee shop will be illustrated for model parameter estimation. The model validation is shown in fourth part. Finally, the conclusion is made in the fifth part.

2. Literature Review

2.1. Lifestyle and Consumer Culture

Lifestyles represent collectively shared patterns of taste,

perception and behavior.

It is usually seen as rooted in social class and milieu [4]. In Bourdieu [2]'s study of French society, it is shown how social background is linked to taste (clothing, sports, food etc.), attitude and verbal and non-verbal patterns of expression. Studies of lifestyle focus on societal diversity and seek to identify societal sub-groups according to their distinguishable tastes, perceptions and behaviours [18].

Some lifestyle can be revealed in consumer culture. Customers whose lifestyles pursue 'leisure and hobby' have a higher expectation of consume experience [8]. Consumer culture is actually produced, particularly in terms of service scape stagings and ideological framing of identity, can predispose consumers toward certain perceptual and experiential orientations, including their oppositional readings [11]. This shaping effect affirms the importance of attending more closely to the production side of commercial culture and explicating the historical, competitive, and ideological factors that influence the actions and choices of institutionally situated commercial producers [11]. This process can appear in coffee shop consumption.

2.2. Coffee Shop Consumption as a Part of Lifestyle

Consumers pursue coffee consumption and relate it with leisure and hobbies as a lifestyle. They have higher expectation levels of atmosphere towards the consumer experience [8]. A coffee shop's atmosphere creates its culture. Atmosphere has been viewed as a kind of social influence [12] that may occur at both the conscious and unconscious levels [14]. If consumers are influenced by physical stimuli experienced at the point of purchase, then, the practice of creating influential atmospheres should be an important marketing strategy for most exchange environments especially for the coffee shop.

Part of the success of any coffee shop is the culture and atmosphere created in it. The atmosphere of coffee shop can influence whether customers have satisfaction experience or not. Thus, the factor of atmosphere is considered in the behavior model of coffee shop.

3. The Model

The customer experience of coffee shop is from the difference between customer's ideal expectation and their real experiment. If the real experiment is more closed to ideal expectation then customer will feel more satisfaction [7]. Thus, this research is based on the ideal point theory [6] which is the distance between the ideal that customer's expectation and the real experiment. The distance d is following exponential density as $f_D(d|w)$ with the parameter ω.

The customer's satisfaction is influenced by the atmosphere of the coffee shop which includes all the style that customer feels he or she enjoys the drinking moment as a lifestyle. The atmosphere of the coffee shop is denoted as ω.

According to previous research [5, 6, 7], more satisfaction

can predict repeat patronization which is related with consumption volume. Thus the monetary amount that customers spend is considered consumption volume. It is denoted as Y_i which is follows log normal density as $f_Y(y|\tau, \zeta^2)$ with the parameter τ, ς^2.

We consider Abe [1] model, there is correlation between satisfaction and monetary amount. Let log ω and log ς^2 follow multivariate normal distribution with parameter matrix

$$\lambda_0 = \begin{bmatrix} \lambda_\omega \\ \lambda_{\zeta^2} \end{bmatrix}, \ \psi_0 = \begin{bmatrix} \lambda^2_\omega & \lambda_{\omega\zeta^2} \\ \lambda_{\zeta^2\omega} & \lambda^2_\omega \end{bmatrix}.$$

A straightforward approach is to specify the logarithm of ω_j and ς_j^2 and with a linear regression as follows,

$$\begin{bmatrix} log\,\omega_j \\ log\,\zeta_j^2 \end{bmatrix} \equiv \alpha x_j + e_j$$ where index j is added to emphasize

that the rate parameters are for customer j. And e_j follow multivariate normal distribution with parameter (0, ψ_0). x_j is a v×1 column vector that contains V characteristics of customer j. α is a V×2 parameter vector and e_j is a 2×1 error vector that is normally distributed with mean 0 and variance ψ_0. This formulation replaces λ_0 with αx_j. When x_j contains only a single element of 1, this model reduces to the previous no-covariate case.

4. The Empirical Data

The empirical data is collected by a coffee shop which not only sells coffee but also provides space for artistic activity and deal with exhibition of artwork. The consumer data is from September 1, 2016 to Aguste 31, 2017 and includes customers' consumption monetary. The customers' satisfaction is from survey data which is combining with the consumer consumption data. There are two parts of satisfaction measurement. One is to directly ask the overall satisfaction of customer when they make consumption in the coffee shop. Another is to calculate the distance between the expectations before they go to this shop and after they purchase in this shop. The purpose of adopting two measurement of satisfaction is for model validation to compare the results of fitness between ideal point distance (for parameter estimation) and overall satisfaction (for model validation). The total sample sizes are 2785.

4.1. The Parameter Estimation

We divide data into two parts. 1658 is for model parameter estimation. Another part, 1127 is for model validation. The Markov chain Monte Carlo (MCMC) method is used to estimate parameter $\omega, \tau, \varsigma^2$. The measurement of satisfaction in parameter estimation data uses the ideal point distance method which proposed in our model.

4.2. Model Validation

We compare the results between ideal point distance (the size is 1658) and overall satisfaction (the size is 1127).

Because the validation data size is smaller than which of parameter estimation data. Thus, we use random sampling to sample 1127 customers' data from 1658. The result is shown in figure 1.
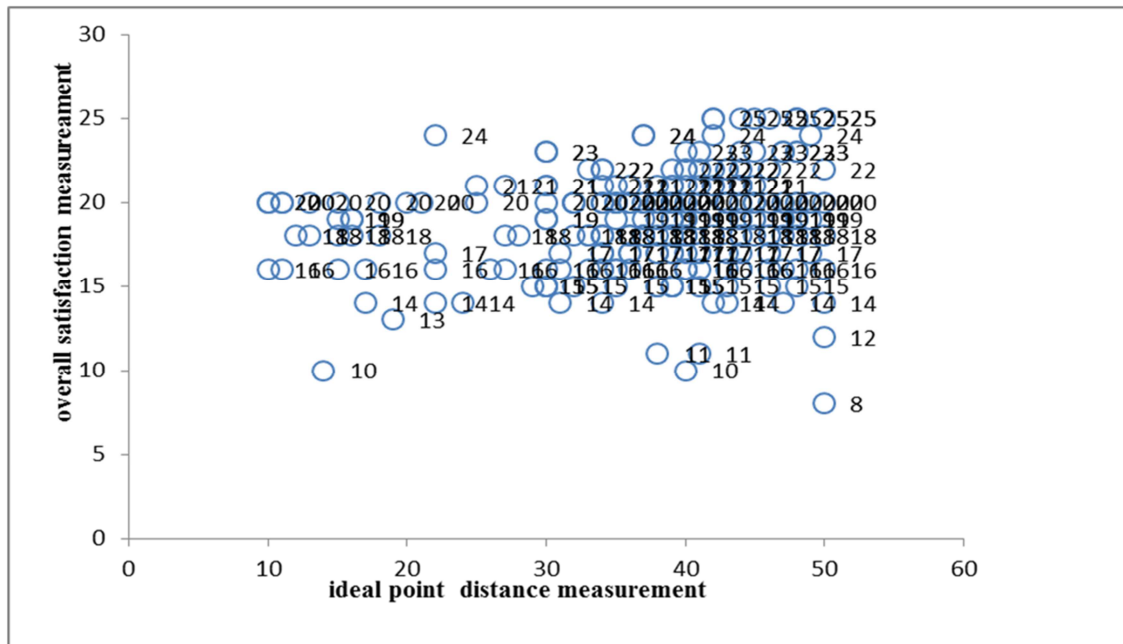
Figure 1. The difference between ideal point distance measurement and overall satisfaction measurement.

In figure 1, the fitness between the ideal point distance measurement and overall satisfaction measurement is 91.89%(it can be shown with the part of the overlapping spot). The rang of scale value of ideal point distance measurement and overall satisfaction measurement are from 10 to 55.6. Thus, it shows good fitness between proposed model and real data.

5. Conclusion

This research uses stomachic model to predict customer coffee shop consumption with customer satisfaction and parameter, atmosphere of the coffee shop. The results show the factor atmosphere will positively impact on satisfaction. And more satisfaction that customers feel, much monetary they will spend. The satisfaction is also influenced by the expectation ideal point and post purchase experiment. The expectation before purchase in coffee shop is form from previous experiments and purchase information.

The mathematic method can be applied for other culture and creative industries to make clear forecasting monetary income and make more linkage with creative and business.

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