The Double Marginal Effect between Established National Brands and Emerging Brands

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Abstract. Based on the double marginal effect model caused by the joint venture of MOUTAI and Luckin, a sequential game model is established to consider whether to joint venture. In the context of the development of the market by various brands, a horizontal difference model is established to explore the optimal decision of the new and old brands to joint venture and the impact on the two brands. The main factors affecting the brand to expand the specific market are investigated. The conclusion shows that the joint venture of the new brand (Luckin) and the old brand (MOUTAI) is a win-win decision, which promotes the understanding of the young people to MOUTAI, broadens the MOUTAI (old brand) in the dynamic main consumer market, improves the sales volume and profit of Luckin, and finally weakens the double marginal effect, improves the living environment of the new and old brands, and improves the viability.

Keywords: joint venture, double marginal effect, horizontal difference model.

1 Introduction

In recent years, new brands have been emerging continuously, but the differentiation between brands is not significant, the products are similar, which makes it difficult for new brands to stand out in the same category, and the competition is becoming increasingly fierce. At the same time, with the continuous development of new brands, old brands that only stick to traditional products have lost their obvious competitive advantage, and the urgent need for innovation of old brands has prompted old and new brands to joint venture as an effective way to improve their own popularity and exposure, and enhance the effect of brand communication.[1] Nowadays, young consumers are gradually becoming the main force of consumption, with huge consumption potential, willing to understand and purchase emerging products. While old brands still have a strong influence in the middle-aged and elderly consumer market, they have gradually lost the young consumer market because they have not been integrated into young people's growing life and consumption concepts, facing survival crisis, they must activate the young consumer market to ensure their long-term development and not be abandoned by the times. According to data, among consumers under 30 years old in China, the consumption of liquor accounts for only 8%, and if we look at the situation of liquor

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consumers in our country, middle-aged and elderly people over 45 years old account for 75%.

Therefore, MOUTAI is in urgent need to develop the young market, improve brand affinity and awareness. New brand innovation ability is strong, more able to cater to the needs of young consumer groups, the old brand has a deeper brand heritage and better product quality, to cater to the needs of middle-aged and elderly consumer groups, in the traditional market more persuasive, joint products generally absorb the advantages of the new and old brands, based on the product foundation of the old brand, inject the creativity and inspiration of the new brand, create a popular product that not only meets the preferences of young consumer groups but also wins the trust of older consumer groups. At the same time, the old brand often carries the feelings of a generation, while the new brand often has a unique creativity, the combination of the new and old brands will also bring joint products to cater to the mass market, which are loved and chosen by more people [1].

In conclusion, existing research has not involved (cooperative game of joint collaboration). This article adopts a simple model of horizontal differences in the industrial organization, considering a "linear city" of length 1, and constructs a sequential game model of old brands (MOUTAI) and new brands (Luckin). It explores the impact of the cooperation decision of old and new brands on the game equilibrium, which has important theoretical significance and practical value for expanding the market and extending the life length of the brand through brand cooperation.

2 Consider the Game Model of Brand

2.1 Problem Description

As the No.1 liquor brand in China, MOUTAI's product value (brand value) can be classified as prop value in economic scenarios. Many businesses harness social media influencers to promote their brands to target audiences.[2] This symbolic value plays an important role in buying decisions, as it can satisfy people's pursuit of unique, high-quality products and is associated with concepts such as success, enjoyment and dignity. By choosing MOUTAI, consumers can demonstrate their economic strength and social status and obtain the recognition and praise they expect. Both have a considerable influence in their respective markets. Luckin has tens of thousands of offline branches, with high convenience for brand purchase, sufficient contact points and sufficient mobile marketing ability.[3] Because the old brand (MOUTAI) tends to be a monopolistic enterprise in the Chinese liquor market, in this model, the old brand (MOUTAI) is considered the monopolist, with its main consumers being middle-aged people. Because the new brand (Luckin) also tends to be a monopolistic enterprise in the Chinese coffee fast-food market, in this model, the new brand (Luckin) is also considered the monopolist, with its main consumers being young people. It can be seen that Luckin's strategy set S1 = {cooperate, not cooperate}; MOUTAI's strategy set S2 = {cooperate, not cooperate}.

2.2 Model Analysis

Under different combinations of Luckin and MOUTAI, the game will produce different results, and the game subjects can choose strategies:

(1) MOUTAI produces MOUTAI coffee itself

(2) MOUTAI does nothing

(3) MOUTAI cooperates with Luckin to produce MOUTAI coffee

For Luckin:

(1): Accept cooperation with MOUTAI

(2): Reject cooperation with MOUTAI

Specifically, there are four possible outcomes in this situation:

(1) New brand (Luckin) cooperates, old brand (MOUTAI) cooperates;

(2) New brand (Luckin) cooperates, old brand (MOUTAI) does not cooperate (MOUTAI);

(3) New brand (Luckin) does not cooperate, old brand (MOUTAI) cooperates, and MOUTAI relies on itself to produce MOUTAI coffee;

(4) New brand (Luckin) does not cooperate, old brand (MOUTAI) does not.

Establishment of the horizontal difference model for two monopolistic enterprises in the same market.

2.3 Model Establishment

A simple model of horizontal difference is established. Consider a "linear city" with a length of 1 (as shown in Figure 1). Consumers are evenly distributed along the city. There are two stores, namely MOUTAI and Luckin, located at both ends of the city, selling materially identical goods. The location of Luckin is x=0, and the location of MOUTAI is x=1. The transportation cost of consumers for each unit of distance is t (this cost includes the time value of consumers). They have unit demand; they consume 0 or 1 units of the goods. For example, in June 2019, UNIQLO UNIQLO joint KAWS cooperation joint T-shirt was snapped up as soon as it was sold in China. The influence of brand familiarity on the brand joint effect is essentially the adjustment of consumers' historical consumption experience. If they have had the experience of using UNIQLO and KAWS products, then these people will rely on the original brand cognition and emotion when making decisions, and will not be too much disturbed by the outside world, so they are more confident than those who lack product use experience [4].

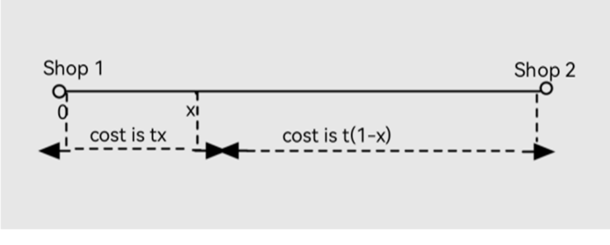

Fig. 1. "Linear City"

The parameters and variables involved in this article are shown in Table 1:

Table 1. The parameters and variables

Model parameters	Meaning of symbol
t	The cost of transport per unit distance for consumers
x	Location of consumers
p1	The price of intermediate products provided by MOUTAI to Luckin (including the price close to cost and certain co-branding fee p6)
p2	The price Luckin charges to consumers
p3	The production cost of MOUTAI is less than p1 (because p1 includes the cost of the wine and a certain co-branding fee).
p4	The sales price of MOUTAI's MOUTAI Coffee
p5	The cost of purchasing coffee raw materials from MOUTAI is not less than p1 (because the funds required to restart the new production chain and packaging advertising costs are more than those spent by directly partnering with existing resource brands).
p6	Co-branding fee paid by Luckin to MOUTAI
p7	The total cost of MOUTAI's self-produced and self-sold MOUTAI coffee is greater than p1, which is equal to p3 + p5.

2.4 Model Analysis

Assume that after the event, the investment has been completed. Set in the market of 0-1. The total price of Luckin Coffee for the consumer with the coordinate x is p2 + tx, and the consumer utility is U = 1-p2 - tx. Because according to microeconomics, when U > 0, the consumer will choose to buy, so when x is (0, (1 - p2) / t), it will buy, and x is (0, 1). So the value range of x is 0 < (1 - p2) / t < 1, and the value range of p2 is 1-t < p2 < 1. It can be seen that π Luckin = (p2 - p1) · D = (p2 - p1) · (1 - p2) / t. In order to maximize π Luckin, the first derivative is 0, and the derivative is: π 'Luckin = (1 - 2p2 + p1) / t. When p2 = (1 + p1) / 2, π Luckin reaches its maximum value. For MOUTAI, π MOUTAI1 = p1 · D = p1 · (1 - p2) / t, and the derivative is π 'MOUTAI1 = 1⁄2t - p1/t. When the derivative is 0, p1 = 1⁄2, p2 = 3/4, and π MOUTAI1 = 1/8t.

Assume that before the event, before agreeing to the transaction, MOUTAI makes its own MOUTAI Coffee. In the 0-1 market, the consumer utility is U = 1 - p4 - tx > 0, because p4 is in the range of [0, 1], so D is in (0, 1). Because π MOUTAI2 = (p4 - p7) · D. In order to maximize π MOUTAI2, its derivative = 0, so p4 = 1/2 + 1/2 p7. At this time, π MOUTAI = (1/2 - 1/2 p7) · D = $(1/2 - 1/2\ p7)^2$ · 1/t, because p7 > p1 = 1/2, so lim π MOUTAI2 = 1/16t and p7 → 1/2. Because π MOUTAI1 = 1/8t, so π MOUTAI1 > π MOUTAI2, MOUTAI chooses to cooperate with Luckin. The above is the impact of profit.

3 The Game Choice of the Two New and Old Monopolies

3.1 Game Process

In a "linear city" of length 1 (as shown in Figure 1), consumers are uniformly distributed along the city. Assuming that Luckin and MOUTAI are the monopoly enterprises in their respective fields, the cost required to maintain the original market is 1/2t. Both parties aim to expand each other's markets. Although the result of this cooperation has a minimal immediate impact on the change in both markets, it greatly explores more potential users. Since this game is a short-term game, the basic cost of maintaining the market for both brands remains unchanged. In the parlance of game theory, cooperative games are games in which players are allowed to communicate and make binding commitments with one another.[5]

From this, we can see from Table 2:

(1) The game payoff for the new brand (Luckin) to cooperate is: -1/2t + 1/8t = -3/8t, and the game payoff for the old brand (MOUTAI) to cooperate is also: -1/2t + 1/8t = -3/8t.

(2) The game payoff for the new brand (Luckin) to cooperate is: -1/2t, and the game payoff for the old brand (MOUTAI) not to cooperate (i.e., to maintain its monopoly) is: -1/2t.

(3) The game payoff for the new brand (Luckin) not to cooperate is: -1/2t, and the game payoff for the old brand (MOUTAI) to cooperate is: -1/2t + 1/16t = -7/16t.

(4) The game payoff for the new brand (Luckin) not to cooperate is: -1/2t, and the game payoff for the old brand (MOUTAI) not to cooperate is: -1/2t.

Table 2. Game Process of Luckin and MOUTAI

		MOUTAI	
		cooperate	not to cooperate
Luckin	cooperate	(-3/8t,-3/8t)	(-1/2t,-1/2t)
	not to cooperate	(-1/2t,-7/16t)	(-1/2t,-1/2t)

3.2 Game Conclusion

As can be seen from the game process, the strategy combination s=(cooperation, cooperation) is a Nash equilibrium, so the new and old brands should cooperate more in the process of developing the market. The joint venture of the new and old brands is actually to achieve the effect of "1+1>2". The new and old brands link together, draw on each other's strengths, seek profits and avoid losses, and both brands can achieve better communication effects, learn from each other's advantages, make up for their own shortcomings, achieve good brand marketing effects, improve product quality and public recognition of the brand, increase brand exposure, and enhance brand advantages.[1] Developing new products and adapting to demand is an inevitable choice in occupying the market. The main consumers of coffee are young people, while MOUTAI's soy sauce characteristics represent a high-end image, mainly consumed by people who are older and have experience. The "soy sauce latte" allows MOUTAI to adapt to the new trends of young and personalized, expanding the consumption crowd and scenarios of products. Luckin Coffee, on the other hand, leverages MOUTAI's brand image to enhance the level of its own products.[6]

4 Conclusion and Outlook

This article constructs a sequential game model considering the co-branding of new brand (Luckin) and old brand (MOUTAI) based on the horizontal difference model, and draws the following conclusions: The co-branding of MOUTAI and Luckin (on September 4, 2023) not only will not suppress the sales of their own brands, but also encourages young consumers who are not familiar with MOUTAI to purchase, thus boosting MOUTAI's profits. Numerous designer luxury brands have been interested in creating co-branding partnerships with the fast-fashion retailer.[7] For MOUTAI, it is necessary to integrate with the young mainstream consumer group under the context of the replacement of consumer main force. In the young marketing integration into the young people's circle, it is important to grasp the hearts of the future consumer main force.

For Luckin, the co-branding helps to promote new products and increase brand awareness by using co-branding marketing to boost new product sales. The target customers break through the circle, allowing middle-aged and elderly people to try coffee and connecting the high-end group of MOUTAI fans to try new things. It also helps the group who cannot afford MOUTAI to achieve MOUTAI freedom, ultimately achieving the goal of increasing product sales.

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