Structural Equivalence and Cohesion Can Explain Bandwagon and Snob Effect

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Abstract: Existing studies have shown that highly conspicuous brands are strongly impacted by word of mouth. Bandwagon and snob effects are opposite; however, existing studies have not shown the conditions under which these opposite effects occur. If we assume that they work simultaneously, they would negate each other and become meaningless. Thus, this paper surveys brand-name goods sold in duty free shops and personal networks constituting friends and acquaintances. Results of this social network analysis reveal that people owning many of the same items have no relation with cohesion but have a relation with structural equivalence (SE). In other words, considering the characteristics of a consumer network, (a) the snob effect operates under conditions of cohesion while (b) the bandwagon effect operates under conditions of SE.

Keywords: purchasing behavior, social network analysis, cohesion,
I Introduction

This paper employs social network analysis to identify the type of impact on consumers within a network (as opposed to independent consumers) when exerting purchasing behavior.

Traditional theories of consumer behavior focused on relatively independent individuals and modeled consumer behavior as a process of individual information processing. However, limitations exist to the analyses that can be performed using this model of independent individuals. As living things, humans cannot live alone and both influence and are influenced by the society. Historically, Veblen (1899) posited that consumers consume social utility and are concerned about others’ perception about them rather than private utility gained from products themselves and termed this conspicuous consumption. Leibenstein (1952) quantitatively proved the reason for the development of this conspicuousness, noting a positive externality such that when utility increases the more people own the same product and a negative externality such that when utility decreases with increasing ownership. Leibenstein (1952) termed the former bandwagon effect and the latter snob effect. These effects cannot be analyzed using models of independent individuals.

Thus, this paper analyzes consumer networks and the consumers within them. Leibenstein (1952) explained that both the snob and bandwagon effects occur as more people consume the same good; however, existing studies have not clarified the conditions under which these opposite effects appear. If we suppose that they can appear simultaneously, they would end up negating each other. As explained by Simon (1976) and Takahashi (2015), people cannot find “all alternatives” and “all results of those alternatives” and then
maximize the “value of ownership.” In other words, among all people in the world, one cannot know who owns or does not own the same good. In this paper, the bandwagon effect is defined as an effect that increases in utility the more other people known to a person own the same product; conversely, the snob effect is defined as an effect that decreases in utility under those same conditions. This paper clarifies conditions under which the bandwagon and snob effects come into play within a consumer network as characteristics of that network.

This paper is based on the fact that the consumer’s decision to purchase the products differs depending on whether the others are unknown someones or friends and acquaintances. Identifying differences in conditions where the bandwagon and snob effects occur is possible by introducing relations. Social network analysis is an appropriate method for analyzing relationships, and this paper uses such an analysis to analyze the purchasing behavior of consumers. It primarily analyzes the type of structures formed by

Figure 1. Cohesion and structural equivalence (SE)
actors and ties.\footnote{Granovetter (1973) examined the relation between the strength of network ties and information propagation, suggesting a theory of the strength of weak ties. In this theory, relationship between people have both strong and weak ties, and it is asserted that weak ties strongly affect information propagation than strong ties. Takahashi and Inamizu (2014) noted the theoretical leap made in this theory.}

Burt (1987) surveyed network structures and proposed the idea that structural equivalence (SE) creates more social contagion than cohesion. Cohesion refers to two actors being direct acquaintances, whereas SE implies that “two actors, A and B, in a network have the same relationship with others within that network” (Yasuda, 2001). Figure 1 represents this idea in the form of a graph, using the metrics of cohesion and SE in analyzing a network of consumers.

II Analysis

When exhibiting purchasing behavior, consumers are influenced by others though they likely are not influenced on all products similarly. This is clear from the example of a person purchasing tea who will not defer to the opinions of the same individuals when purchasing a car. Whyte (1954) compared products where consumption is not visible (private goods) with those products where consumption is visible (public goods) and indicated an increasingly strong reference group influence in the latter. Furthermore, Bearden and Etzel (1982) discovered that in comparison with more common products, luxury goods are more strongly influenced by reciprocal interdependence that is not accompanied by the direct exchange of information, such as with conspicuous consumption. They found a strong direct interaction at work via word of mouth in case of a high level of involvement by consumers when a product is expensive. In other words, the degree of influence by others depends on the quality of a good, with greater conspicuousness leading to a greater impact.
Structural equivalence and cohesion can explain bandwagon and snob effect by others for public goods. Brand-name goods are typically those that appear to be used by others conspicuously.

This paper surveys the influence of the relationships of others on buying behavior of public brand-name goods that are highly conspicuous. This survey was conducted twice, first with preliminary interviews and thereafter by the main survey. Studies on word of mouth are often based on the fact that positive information from others promotes purchasing of products, whereas negative information impedes purchases; however, numerous people in the preliminary interviews stated that they “do not want to have the same handbag as their friends.” In other words, the positive information that friends own a certain handbag does not lead to the positive effect of a desire to own the same handbag, which is considered to be due to the snob effect. Conversely, some comments may be attributed to a bandwagon effect where interviewees did not want to lag behind in following a fashion trend and did not want to own something that only a few owned.

This paper surveys the relationship of product ownership of highly conspicuous brand-name goods within a personal network of consumers. The analysis was performed using snowball sampling, with the author as initial informant, of product ownership within a network of consumers. The analysis was performed using UCINET, and the survey questionnaire included the following.

For the purposes of this survey, brand-name goods are those sold in duty-free shops (handbags, belts, shoes, key cases, wallets, train pass holders, business card holders, etc.). What are the names of the brand-name goods you own (as many as you own, though do not include those products you do not use). If you know it, please include the name of the handbag, or, if you don’t know it, the approximate size (large enough to hold A4-size paper, etc.) and shape. Also, please provide the names of those

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Footnote: 2 Standard software for calculating metrics for network analysis is sold by Analytic Technologies.
friends who own brand-name goods.

As this survey utilizes snowball sampling with the author as initial informant, \( n = 66 \) (note that the author’s responses were excluded in the analysis).

The respondents noted all brand-name items\(^3\) they owned, and items with five or more owners were used in the survey. Handbags were differentiated in terms of whether they were sufficiently large to hold A4-size paper and whether they were big or small. The following is a list of surveyed brands and items (23 total).

<table>
<thead>
<tr>
<th>Brand</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prada</td>
<td>bag (big and small)</td>
</tr>
<tr>
<td>Louis Vuitton</td>
<td>bag (epi, small), bag (damie, small), bag (monogram, big and small), wallet, key case, makeup bag, card case, diary</td>
</tr>
<tr>
<td>Gucci</td>
<td>bag (big), shoes, wallet, makeup bag</td>
</tr>
<tr>
<td>Coach</td>
<td>bag (leather, big), wallet, bag (signature, big)</td>
</tr>
<tr>
<td>Salvatore Ferragamo</td>
<td>shoes</td>
</tr>
<tr>
<td>Hermes</td>
<td>bag (big), diary, accessory</td>
</tr>
</tbody>
</table>

## III Result

### 1. In case of cohesion

In Figure 2, actors are represented by small circles, and ties are drawn between actors having the same item, forming an item network. Figure 3 illustrates ties between people that are acquaintances (a personal network). Below is an analysis of these networks.

First, we examine item ownership where there is a relation with cohesion. For the above products, a comparison was made of the proportion of consumers with cohesion with those without cohesion.

\(^3\) This paper uses a structure of product categories > brands > items.
Structural equivalence and cohesion can explain bandwagon and snob effect for those having the same item and those who do not. A chi-squared test on the cross table shown in Table 1 showed a significant trend of not having the same item when a relationship of cohesion exists. The following finding can thus be derived from these facts.

*Finding 1.* A snob effect occurs among people in a relationship of cohesion.
Next, the CONCOR algorithm was used to create a block model to examine the structure of this personal network (Figure 4). The block model places actors with similar relationship structures in proximity to each other. This algorithm is currently frequently used by network analysts (White, Boorman, & Breiger, 1976). Within this block model, consumers belonging to the same block can be considered to have a relation with SE.

Next, let us examine item ownership where there is an SE relation, particularly the proportion of consumers having the same item and those having different items. For example, in the case of ownership of product \(j\) by consumer \(i\),

consumer \(i\)  Prada big bag, Coach wallet, Louis Vuitton key case
consumer \(j\)  Prada small bag, Coach wallet, Gucci shoes

This network has six items with two similar items (a Coach wallet).

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4 CONCOR is an algorithm developed by Breiger, Boorman, and Arabie (1975) for block modeling based on a table layout.
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and four different items (small handbags are defined differently than large; thus, these four are a Prada big bag, a Prada small bag, a Louis Vuitton key case, and Gucci shoes). Table 1 compares people and considers whether a person has the same item, and Table 2 compares items that are owned by people and considers each pair of the same item. Table 2 summarizes each combination of item.

The CONCOR block model indicates SE for people in the same block. We will examine whether differences exist in item ownership in
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Table 2. Item possession (structural equivalence)

<table>
<thead>
<tr>
<th></th>
<th>Different items</th>
<th>Same items</th>
<th>Total</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td>254 (44 pair)</td>
<td>88</td>
<td>342</td>
<td>0.204</td>
</tr>
<tr>
<td></td>
<td>74.27%</td>
<td>25.73%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2</td>
<td>186 (12 pair)</td>
<td>24</td>
<td>210</td>
<td>0.381</td>
</tr>
<tr>
<td></td>
<td>88.57%</td>
<td>11.43%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 3</td>
<td>206 (15 pair)</td>
<td>30</td>
<td>236</td>
<td>0.634</td>
</tr>
<tr>
<td></td>
<td>87.29%</td>
<td>12.71%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 4</td>
<td>86 (6 pair)</td>
<td>12</td>
<td>98</td>
<td>0.857</td>
</tr>
<tr>
<td></td>
<td>87.76%</td>
<td>12.24%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>732</td>
<td>154</td>
<td>889</td>
<td></td>
</tr>
</tbody>
</table>

each of the blocks. The block model is shown in Figure 4, with blocks 1, 2, 3, and 4 shown sequentially.

Density is a network metric indicating the level of cohesion within each block and is the ratio of ties within the network (the number of ties among all people) to the actual number of ties.\(^5\) In other words, it indicates the degree of cohesion in each block. In general, cliques\(^6\) can be found where density is above 0.8. The density of Block 1 is low compared with that of other blocks, making it a network with low cohesion, whereas Blocks 2–4 have significant cohesion. A closer examination of the types of people in each block indicates that Block 1 is a network with low cohesion among friends, Block 2 constitutes friends from university research centers, Block 3 comprises work friends, and Block 4 comprises friends from the same hobby.

\(^5\) Density is \(k/(n(n - 1))/2\), where \(n\) is the number of people comprising a network.

\(^6\) A clique refers to a high-level organization comprising sub-organizations (factions, friends, etc.) and features the informal creation of emotional, close mutual contacts, goals, and interests among its members.
Structural equivalence and cohesion can explain bandwagon and snob effect groups. Blocks 2–4 are networks with the same level of cohesion.

Table 2 shows the total number of people in each block having the same item as well as different items, as was described above. In examining the count of the same items, one can see that more than 25% in Block 1 and less than half in the other blocks have the same item. Block 1 had many with the same item, while blocks 2–4 had few of them.

Belonging to the same block indicates an SE relation; thus, those in Block 1 have an SE relation with little cohesion, and those in Blocks 2–4 have both cohesion and an SE relation.

In Blocks 2–4 having both cohesion and SE relation, few people owned the same item. However, those in Block 1 had the same item with an SE relation and no cohesion. The following can be derived from these facts.

*Finding 2.* A bandwagon effect occurs among those with an SE relation without cohesion.

**IV Conclusion**

This paper examined individual relationships to empirically identify the conditions under which a bandwagon and snob effects occur. More specifically, this paper analyzes buying behavior of consumers in a network where there is both cohesion and SE.

This paper uncovered two findings: highly conspicuous items cause a snob effect among persons who have cohesion (Finding 1) and a bandwagon effect among persons in an SE relation without cohesion (Finding 2). In other words, considering the characteristics of a consumer network, (a) cohesion is a condition for a snob effect while (b) SE is a condition for a bandwagon effect.

This paper analyzed brand-name products with a high level of conspicuousness owned by consumers within a network who were
likely to feel a certain sense of identity due to those products. The results of the analysis revealed that differences exist between the effect of highly conspicuous products, depending on the relationships within a personal network between advance purchasers of the product and those planning to purchase the product in the future. In other words, the fact that person A has brand-name product X may generate a snob effect in person B, where there is a relation with cohesion, and a bandwagon effect in person C, where there is an SE relation without cohesion. These results indicate that the same product can cause both bandwagon and snob effects. The significance of this paper is shown by a consumer externality with conspicuous consumption causing both bandwagon and snob effects as well as by clarifying the conditions under which these effects occur.

However, studies till date have not clarified the circumstances under which the snob and bandwagon effects manifest themselves, but measuring the concepts of cohesion and SE is not possible.

This paper examined brand-name products with a high level of conspicuousness, which naturally create different results than are seen with everyday products with a low level of conspicuousness. Kuwashima (2006) indicated a bandwagon effect among consumers with a relation exhibiting cohesion and SE for products with low levels of conspicuousness. These low levels weaken the snob effect because consumers are not as worried about others due to the lack of conspicuousness, and the bandwagon effect is considered to be similar. In other words, consumers are organized even with items having low levels of conspicuousness, making it important to analyze consumer structures.
References


