# CATEGORIZATION FLEXIBILITY AND SCHEMA INCONGRUITY EFFECT ON NEW PRODUCT EVALUATIONS

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# CATEGORIZATION FLEXIBILITY AND SCHEMA INCONGRUITY EFFECT ON NEW PRODUCT EVALUATIONS

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Dissertation Abstract

Pınar Yıldırım, "Categorization Flexibility and Scheme Incongruity Effect on New Product Evaluations"

This study is designed to explore the effects of category based transfer and schema incongruity on the categorization and evaluation of new products.

Employing the drink "cider" as the hypothetical new product to be introduced to Turkish market, the first part of the experiment investigated the effects of providing a category label to the categorization of cider. The subjects are shown advertisements to either activate soft drink category or alcoholic drink category schema. Although the hypothetical cider in our study contains three percent alcohol, the number of participants who categorized cider as a soft drink increased significantly after seeing the soft drink label. The same significant relationship is also observed for alcoholic drink label group. When evaluating the performance expectations from cider, the soft label group used information from both soft drink and alcoholic drink categories whereas the alcoholic label group employed information mainly from alcoholic drink category.

The second part of the experiment investigated the effects of incongruent versus congruent information on attitude formation and purchase intention. Participants who are exposed to incongruent information revealed significantly lower attitude and purchase intention scores than participants exposed to congruent information. Incongruent information also diluted participants' performance expectations. The findings were discussed in terms of category-based transfer and schema incongruity literature.

## Tez Özeti

Pınar Yıldırım, "Ürün Kategori Esnekliği ve Şema Uyumsuzluğunun Yeni Ürün Değerledirmesine Etkileri"

Bu çalışmanın amacı kategori temelli transfer (category based transfer) sürecinin ve şema uyumsuzluğunun (schema incongruity) yeni ürünlerin kategorizasyonu ve değerlendirmesine olan etkilerini araştırmaktır.

Araştırmada analiz edilen hayali yeni ürün, "cider" olarak adlandırılan ve Türkiye'de satılmayan bir tür elma şarabıdır. Araştırmanın ilk bölümünde yeni ürünü tanıtıcı reklamlarda bir kategori ismi sağlamanın "cider"in tüketici zihnindeki kategorizasyonunu nasıl etkileyeceği araştırılmıştır. Deney katılımcılarına, gösterilen reklamlar, tüketici zihninde ya soğuk meşrubat ya da alkollü içecek kategorisini aktive edecek şekilde tasarlanmıştır. Reklamlarda içeceğin yüzde 3 alkol içerdiği belirtilmesine rağmen soğuk meşrubat kategori ismi gösterildikten sonra "cider"i soğuk meşrubat olarak kategori eden katılımcılar önemli oranda artmıştır.

Araştırmanın ikinci bölümünde tüketicilere kategorizasyon kararlarıyla tutarlı bilgi sunmaya karşın tutarsız bilgi sunmanın etkileri incelenmiştir. Uyumsuz bilgi sunulan katılımcıların, uyumlu bilgi sunulanlara kıyasla ürüne karşı daha olumsuz bir tutum geliştirdiği ve satın alma niyetinin daha düşük olduğu gözlemlenmiştir. Uyumsuz bilgi aynı zamanda ürünün performans beklentilerini de bozmuştur. Araştırma sonuçları kategori temelli transfer ve şema uyumsuzluğu literatürü ile bağlantılı olarak yorumlanmıştır.

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CONTENTS

# CHAPTER 1

## INTRODUCTION

Categorization has been an important research stream in consumer behavior. The ways that consumers categorize products has major implications in various areas in marketing. Product positioning, product evaluation and choice, brand extension, product development, product packaging, responses to new products are just to name a few. There is an extent literature stemming from cognitive psychology that shed light on how consumers understand, organize and interpret products.

The categorization process can be defined as the method of studying how consumers organize their thinking about specific product alternatives (Gutman 1982). It is regarded as one of the most basic functions of human beings.

On a more abstract level Smith and Medin (1981) defines categorization as a function which involves determining whether a specific instance is a member of a concept or a particular concept is a subset of another. To acknowledge the categorization concept is to acknowledge, "concepts are essentially pattern-recognition devices, which means that concepts are used to classify novel entities and to draw inferences about such entities" (Smith and Medin, 1981, p. 8).

According to Mervis and Rosch (1981), a category is formed when two or more separate objects or events are labeled under the same name or perform the same action on different objects.

Evidently, category formation is based on perception. If we perceive the objects as similar we will categorize them similarly as well (Pothos and Chater 2002). Schyns, Goldstone and Thybout (1997) argue that there is a two way interaction between categorization and perception. New object features will arise in time that transform the categories to be more diagnostic and as new features emerge, the perception of the categorized objects also change. It can be concluded that the same cognitive processes are prevalent both in perceptual organization and in some aspects of categorization (Pothos and Chater 2002).

Research on new product categorization assert that in order to learn about new products consumers use the information already stored in memory (Moreau, Markman and Lehmann 1999; Yamauchi and Markman 2000; Gregan- Paxton, Hibbard, Brunel, Azar 2002). Schyns (1998) suggest that like object recognition categorization comprises of matching object information with already existing schemas in memory.

Both the marketing and psychology literature analyze how people organize knowledge in memory and how they interpret and group novel items (Cohen and Basu 1987; Loken and Ward 1990). When consumers classify a new product under a category, they employ a process called analogy based knowledge transfer. They transfer the information that already exists for that particular category to the new product and give meaning to the new product in the light of this information.

## Research Objectives

Most of the categorization research on new products focus on how consumers perceive, learn about, and form preferences about new products that do not fit into

any existing category or have characteristics that can be attributed to several different categories (Moreau, Markman and Lehmann 2001a; Moreau, Lehmann, Markman 2001b; Gregan- Paxton, Hibbard, Brunel, Azar 2002; Ozanne, Brucks, Grewal 1992; Sujan 1985). This research tries to explain what happens when a new product fits into one category but advertisements manipulate it to be categorized as another? Can a new product that will automatically be regarded as belonging to a certain category, be directed to a different category by providing label and consistent information about that designated category? How will consumers make sense of that new product and how do they evaluate it?

Another objective of this research is to understand what happens when consumers are exposed to congruent versus incongruent attributes about the new product? In a (2x2) experimental design this present dissertation examines cider as the unit of study, and aims to analyze the categorization process, evaluation and preference of the new products when congruent versus incongruent attributes are presented. While doing so, it examines categorization from two perspectives. It attempts to integrate analogy based knowledge transfer research with schema incongruity studies.

The dissertation will be organized as follows: First theoretical work on categorization from different domains will be presented. Second, categorization research in consumer behavior literature will be reviewed, followed by a special emphasis on new product categorization. Third, research study will be described. Finally findings will be discussed with their managerial and theoretical implications.

# CHAPTER 2

## THEORETICAL BACKGROUND

Mervis and Rosch (1981) state that categorization literature deals with six basic issues which are: (1) Arbitrariness of categories: Why do people form categories? Is it automatic and initially arbitrary or is it on purpose, done for problem solving? (2) Equivalence of category members: Are all category members equal, do they all share the similar attributes or are some of them more representative of a category than others? (3) Determinacy of category membership and representation: What are the terms and necessities to be defined as a member of a certain category? Are the boundaries well defined or fuzzy? (4) The nature of abstraction: How much abstraction is sufficient? Are individual exemplars necessary or are higher construal level abstractions needed? (5) Decomposability of categories into elements: Does a plausible explanation exist when objects are decomposed into their elementary features? (6) The nature of attributes: What is the nature of attributes? Are they considered as separable or integral? How they are modeled and in which way they are combined?

In this study we will first present previous research gathered from different domains to encompass the areas underlined by Mervis and Rosch (1981). We will start with “why” and “how” categories are formed.

## Functionality of Categories

Rosch (1978) suggests that there are two basic principles for the formation of categories. The first principle indicates that the task of category systems is to get maximum information about our environment while using our finite resources as frugal as possible. Individuals want to get maximum information that will enable them a better understanding of the outer world while they spend as little cognitive effort as possible. It is a heuristic which consumers opt to use in decision making as well, when they are faced with situations that require excessive cognitive processing (Shiv and Fedorikhin1999). It also helps to reduce the dissimilarities among stimuli and organize them around behaviorally and cognitively consistent groups (Rosch 1978). When the stimuli seems irrelevant or the task of organizing seems confusing, individuals are less likely to put cognitive effort for categorization.

The second principle is based on the notion that we as humans are in need of structured information to make sense of the perceived world. Categories map the perceived world structure better than arbitrary and unpredictable attributes. Making sense of the world is made possible either by the mapping of categories to given attribute structures or by the definition or redefinition of attributes to render a given set of categories appropriately structured (Rosch 1978). According to Bruner, Goodnow and Austin (1956) and Lingle, Altom and Medin (1987) by categorizing objects and events our information processing efficiency and cognitive stability are improved. Such organized knowledge structures help us to make sense of novel items/events, so that we can make use of the guiding commonalities instead of

irrelevant uniqueness when drawing inferences about attributes and making evaluative judgments (Cohen and Basu 1987).

## The Formation of Categories

According to Mervis and Rosch (1981) categorization can be performed by labeling distinct objects or events with the same name or performing the same action on different objects. Category coherence acknowledges that certain categories provide a better understanding of the outer world than others. So, it is important to understand what kind of perceptual or external factors influence our categorization process.

The likelihood principle suggests that sensory input will be grouped with other most probable distal objects or events consistent with it (von Helmholtz 1962). The simplicity principle on the other hand postulates that the perceptual system is organized around not the most likely but the simplest sensory input (Pomerantz and Kubovy 1986). The need for simplicity can be defined as a basic drive to encode the outer world with as little redundancy as possible (Pothos and Chater 2002). Tversky (1977) mentions that similarity acts as an organizing principle that helps individuals to classify objects, form concepts and make generalizations. Some stimuli such as faces, countries, personalities are better represented by qualitative features (attributes) rather than dimensional representations (computation of metric distance between points). Recall performance as well as recognition performance are mainly determined by organization of information to be remembered. Several studies indicate that taxonomically organized lists are better recalled than lists of unrelated words (Bower, Clark, Lesgold & Winzenz 1969; Cofer 1967; Puff 1970).

Taxonomic categories which are also called natural categories are formed on the basis of naturally occurring relationships between objects and their features (Barsalou 1983; Felcher, Malavia and Gill, 2001). Birds, trees, vehicles can be given as examples of taxonomic categories. (Barsalou 1983; Loken and Ward 1987). Similarity in the number of physical attributes is the main determinant in forming taxonomic categories. For example birds as a natural category, share the same physical attributes as wings, feathers, beak and two legs. An animal named to have two legs and wings will be most likely to be categorized as birds rather than another animal with two legs such as kangaroo. Taxonomic categories can also be applied to marketing settings. Past research suggests that consumers use taxonomic categories such as beverages, cameras, and automobiles, in which products share many physical features, to organize information about alternatives in their environment (Bettman & Sujan, 1987; Meyers-Levy & Tybout, 1989; Sujan & Dekleva, 1987). Also Rosch (1975) asserts that most of objects encountered in nature have attributes that are highly correlated with one another. The physical attributes of having wings and having two legs are correlated. This correlation is expended to everyday objects such as cars. The curb weight and luxuriousness of cars are correlated (Nedungadi and Hutchinson, 1985). Product categories are formed by taxonomic categories in nature and consumer goods manufacturers, retailers and market researchers measure market share in terms of taxonomic categories. (Felcher, Malaviya, McGill 2001).

However, as Barsalou (1983) suggests sometimes "people construct ad hoc categories to achieve goals". He indicates that products can also be categorized in order to fulfill a certain goal. Constructing the category of "things to sell at a garage sale" can be instrumental in achieving the goal of selling unwanted possessions. Things to take to a camping trip, things to eat on a diet, are examples of goal derived

categories. In some situations goal-derived categories are more useful in evaluating and making comparisons. If you have a goal of losing weight, you may choose to eat yogurt or steamed vegetables or fruits, all belong to different taxonomic categories, for dinner. Although goal derived categories differ from natural categories in that ad hoc categories violate the correlational structure of the environment and are not well established in the memory, they provide a wider perspective to marketers. When Kellogg launches Special K- bar as a low calorie snack, it is not competing in regular snack category but in diet products category which may include low fat yoghurts, fruits and so on.

Felcher et al. (2001) note that the boundary between taxonomic categories and goal-derived categories may sometimes be hazy. They argue that although in most situations taxonomic categories are sufficient measures to understand consumer goals, marketers are beginning to realize the importance of goal realization in consumer choice and begin to develop new measures such as "share of wallet" to see how well they are doing compared to competitors belonging to multiple taxonomic categories.

According to Cohen and Basu (1987) categories are functional and may be shaped according to personal goals, values, and the need to behave in specific ways. Feature based rules are not the only means to define categories. Clear instances of a category may serve as a discrimination criterion instead of (or complementary with) the feature based rules. Cohen and Basu (1987) define a three dimensional classification in category representation: (1) Classical view, (2) Prototype/probabilistic view, and (3) Exemplar view.

The classical view assumes that mental representations of categories consist of summary lists of features or properties that individually are necessary and

collectively sufficient to determine category membership. This requires all members to be equally representative and implies that in order to learn a category, conceiving its defining attributes would be sufficient (Cohen and Basu 1987). For example triangle category meets these criteria. All triangles are closed geometric forms with three sides and interior angles that sum up to 180 degrees. To make sure if something is a triangle, one has only to check for these three properties, and if any one of the three is missing, one does not have a triangle. However it is not easy to define that kind of clear-cut properties for all the members of a category. The classical view may seem as not very helpful in defining marketing related cases.

This present study intends to discover if the clear-cut rules defined in classical view are prevalent for alcoholic beverages. More specifically, this study aims to discover whether the fact that a beverage contains alcohol can be assumed as the only defining attribute to automatically put this beverage into alcoholic drink category or providing labels and information in another direction will help consumers form their categorization decisions in the direction of the label, in our case as a soft drink.

Probabilistic or prototype view holds that categories are "fuzzy" or ill-defined and that categories are organized around a set of properties or clusters of correlated attributes that are characteristic or typical of category membership (Rosch 1975). The fuzzy set theory, postulate that no clear boundaries exist between members and nonmembers of a set (Mela and Lehmann 1995; Varki, Cooil and Rust 1997; Wedel and Steenkamp 1991, Viswanathan and Childers 1999). Thus, the probabilistic view rejects the notion of defining features as in classical view. Membership in probabilistic categories is naturally graded, rather than all or none, and the better or more typical members have more characteristic properties than the

poorer ones. This gradedness in categorization asserts that some products are not easy- to- define members in a category and have weaker links with that category. It is also easy to see that the probabilistic view may lead to unclear cases. Any one example may have several typical properties of a category but not so many that it clearly qualifies for category membership.

Barsalou (1983) addresses graded structure and well established category representation in memory as two central properties of natural categories. Graded structure can be examined from three aspects. First, some instances are better examples of a category than others. For example "orange juice" is a better example of "juice" category than "pommegrade juice". This aspect of graded structure applies to all natural categories (Barsalou 1983). Typicality is defined as the degree to which an instance is perceived to represent a category. The members of categories which are considered most prototypical are those with most attributes in common with other members of the category and least attributes in common with other categories (Rosch and Mervis 1975). However some items' category membership cannot be determined very easily. The second aspect of graded structure is the presence of these unclear items. It is harder to decide whether "chicken" falls into bird's category. The third aspect of graded structure is related to non members of a category. Non members vary in their degree of similarity to a certain category. Some items can easily be called dissimilar while some items are regarded as more similar to a category. "Penguins" take longer to reject as birds than does "cats".

The categorization of a product according to the fuzzy set approach is realized by asking respondents to assess the category membership at the attribute level by using a likert scale. When determining which cars belong to the economy car class, respondents are asked "in terms of mileage how good an example of an

economy car is X?" on a ten point scale ranging from a very bad example to a very good example (Viswanathan and Childers 1999). Different from crisp set approach where all attributes are assessed only as possessing an attribute (shown as value 1) or not (shown as value 0), the fuzzy set approach enables the researcher to see the degrees of membership differences. If one brand of car gets m=10 on gas mileage and the other gets m=7, differences in overall perception and evaluation of the two different car brands can be attributed to this difference. However if a crisp set-feature based approach is adopted and respondents are asked whether a car brand is economic in gas mileage or not, both brands will receive a (1) and differences in evaluation will be attributed to other features (Viswanathan and Childers 1999). To illustrate marketing aspects of fuzzy set measures they analyze alcoholic beverages as superordinate category and beer as subordinate category, some differences occurred in terms of attribute level relationships and gradedness in a category class. For superordinate alcoholic beverage category "expense" and "fit with evening plans" come out as attributes that have relatively strong impact on category membership while for beer, only the attribute "fit with evening plans" appear to have a strong impact.

In this dissertation two of the research questions are "How will consumers decide whether cider serves as an alcoholic drink or a soft drink?" and "What kind of benefits should consumers expect from cider?" The literature on fuzzy set theory asserts that gradedness in category membership is constructed based on product attributes. In our study, a gradedness structure exists for cider as for the alcoholic label group. The hypothetical cider brand in the study contains 3 percent alcohol which is similar to beer and less than wine. In alcoholic drink category it will not have a high membership score in terms of alcohol amount it contains. However cider

possesses attributes of both soft drink and alcoholic drink. Depending on the label and attribute information given in the advertisements, consumers are expected to take into account other attributes of cider and form an overall judgment on a higher, global level that may result cider to be categorized as soft drink.

Finally, Viswanathan and Childers (1999) point out to a distinction between the concept of probability assignment and fuzzy categories and assert that probability assignment and gradedness do not symbolize the same concepts. For example given two bottles of water in a desert, you are informed that one bottle, bottle A, has a membership of 0.91 in the set of potable water. From this information it can be concluded that it is quite similar to drinkable water. Bottle B however, has a probability of 0.91 that the water is potable. That means in 91 percent of the trials it can be consumed safely but there is a 9 percent probability that it may contain something poisonous. This situation will completely change your choice and your evaluation of the two different bottles of water.

Exemplar view asserts that concepts are represented by exemplars rather than by an abstract summary (Hintzman 1986; Medin and Schaffer 1978, Cohen and Basu 1987, Pothos and Chater 2002). Sujan (1985) differentiates an exemplar from a prototype such that exemplars are defined as good examples of a category and prototypes are defined as abstract images that possess the attributes most commonly associated with a category.

According to exemplar view exemplars are defined as a set of known instances of a concept. These known instances are stored in memory, and when faced with a new stimulus, classification or recognition is based on the degree of similarity between that stimulus and the stored exemplars. Correct classification of the previously unseen instances is achieved by generalization effects. Individuals

develop a tendency to generalize the novel stimulus to what they have been exposed before. New instances are assigned to different categories in terms of their similarity to the members of previously formed categories (Pothos and Chater 2002).

People simply make use of particular instances that come to mind in a given situation. The exemplar view preserves the variability of instances in the category, whereas a prototype is a type of average over the instances of the category. In both situations classification is achieved through similarity, in exemplar view similarity to already stored (known) instances and in prototype view similarity to prototypes (Mervis and Rosch 1981).

Representativeness is a salient factor enabling people learn and develop categories. Past research indicates that some exemplars of a category are more representative than others (Mervis and Rosch 1981; Kahneman and Tversky 1972). According to Kahneman and Tversky (1972) representativeness is mainly determined on two criteria: Firstly on its degree of similarity in the fundamental features to its parent population, secondly on its degree to which it exhibits the prominent features of the process by which it is compromised of. Mervis and Rosch (1981) indicate that whether an item is representative within a category affects all the substantial variables in psychological research. They listed these major variables as: speed of processing, order and probability of exemplar production, natural languages, asymmetry in similarity ratings and learning and development.

Speed of processing indicates how fast subjects can name [an exemplar] in a[category name]. Several studies state that response times are shorter for representative exemplars than non representative exemplars. (E.E. Smith 1978; Hampton 1979; Rosch et al. 1976, Mervis and Rosch 1981)

Order and probability of exemplar production shows how frequently an exemplar is referred when mentioning a certain category. It also indicates when asked to depict an exemplar of a product category whether a certain object comes to mind and pictured, drawn, said aloud etc. first (Mervis et al. 1976; Mervis et al 1981; Erreich and Valian 1979).

Natural languages are equipped with mechanisms for a better statement of gradients of representativeness. The term “true” or “technically” enables to depict a degree of representativeness within a category. For example “a sparrow is a true bird” is a plausible statement but “a penguin is a true bird” does not sound so reasonable. When you change the phrases to “a penguin is technically a bird”, it sounds plausible but “a sparrow is technically a bird” does not (Lakoff 1973; Mervis and Rosch 1981).

Asymmetry in similarity ratings shows the degree of representativeness between members. More representative members are more likely to serve as a basis for comparison (Tversky and Gati 1978; Rosch 1975a). For example in terms of fast growth and economic development it is more common to compare far east countries with China and say “Malaysia is more like China” than say” China is more like Malaysia”.

For learning and development of categories representativeness is a prominent factor. “Category membership is established first for the most representative exemplar and last for the least representative exemplars”(Mervis and Rosch 1981, pg 97-98). There is a correlation between the correct classification of the objects and the degree of distortion of the exemplar from the prototype pattern. When a novel object is classified for the first time, the probability of correct classification is reversely correlated with the degree of distortion of the exemplar (for the set of exemplars that

a person has encountered). (Posner and Keele 1968; Homa and Vosburg 1976). Encountering with the most representative exemplar enables the person to form a category membership more easily than encountering with only non representative exemplars (Mirman 1978).

## Categorization Research in Marketing

Research on categorization originates from two different domains. (1) natural sciences such as botany, zoology, ornithology and (2) social sciences such as developmental psychology, cognitive psychology, philosophy, linguistics and anthropology. So far we tried to summarize the basic concepts, and approaches of categorization research mainly studied within cognitive psychology domain. Consumer behavior researchers benefited from this body of knowledge to further extend these findings into marketing settings. In this section the implications of categorization research in marketing field will be examined in detail. Also hypotheses will be presented with reference to the reviewed literature.
We will start with "product classification" as it is one of the major research areas in marketing and review categorization literature relevant to product classification.

Categorization literature indicates that objects can be grouped at varying levels of specificity. In marketing setting this specificity is used to classify products. According to Rosch, Mervis, Gray, Johnson and Boyes-Braem (1976) natural objects are categorized as superordinate, basic level and sub-ordinate categories. These hierarchical levels are formed by the number and types of attributes associated with them. According to Sujan and Dekleva (1987) there is one basic level of inclusiveness whereby we group objects readily and effortlessly. Rosch (1978, p. 22)

denote that "basic level forms the cornerstone of a taxonomy." At the basic level of categorization, maximum parsimony is exerted and only a few but distinct categories are formed. Categories formed this way possess numerous attributes and they largely differentiate from other categories at the same level (Sujan and Dekleva 1987). In order to increase the distinctiveness of categories, they can be defined in terms of prototypes or prototypical instances. When categories are defined in this manner, they embrace the most representative items inside and leave out the least representative ones (Rosch 1978). That means basic level category objects possess more shared-within than shared-between attributes. Product type level is the basic level of categorization for products.

Meyers-Levy and Tybout (1989) took Rosch's classification to marketing settings. They use a three level hierarchy where superordinate category is placed at the top. They posit that members of superordinate categories differ from each other on major attributes and they have few similar features in common. Moving down from top to bottom, a large number of new attributes are added to the objects residing at the basic level categories. At basic level shared within attributes in groups increase while shared between attributes decrease. The attributes at basic level categories are considered to signal the greatest discrimination between categories. Moving down to the very bottom, at the subordinate level, objects share a large number of features and can be differentiated on either a single or small number of attributes (Meyers-Levy and Tybout 1989). Different studies provide further support to Rosch's classification. Sujan and Dekleva (1987) define product classes, product types and brands belonging to superordinate, basic and sub ordinate categories respectively. For instance cars as product class are put into superordinate category where sports cars or family cars are defined as product type categories and placed in a less

inclusive basic level category. Various brands of sports cars constitute sub level categories. Sport cars and family cars may belong to distinct subcategories while different brands of sport cars may belong to the same subcategory because of sharing many attributes. According to this approach, when products are categorized at the product class level, it is hard to deduce much about the product itself. Only a few characteristics can be named for a mp3 player such as “plays music”, “easy to carry” and “accommodates hundreds of songs”, whereas categorization at the product type level leaves room for a more detailed description and even evaluation of the product. For example an Apple iPod has 160 GB storage, enables you to browse your songs by playlist, share your photos and watch videos etc. Also categorization at the product type level enables discriminant inferences to be made about contrasting product types. However categorizing at the brand level may induce some, even if small, increase in the attributes describing the product. (“stylish”, “cheap”, etc.) As a result, when products are categorized at more specific levels, the number of attributes associated with that level increases. The amount of increase is larger when moving from the product class to the product type level than moving from the product type to the brand level (Sujan and Dekleva 1987).

Meyers-Levy and Tybout (1989) also used a Rosch type hierarchy when they categorize beverage as superordinate level object (attributes associated with the category are liquid, thirst quenching and good with food), soft drink and fruit juice as basic level category objects (some of the attributes associated with soft drink are cold, carbonated and preservatives and some attributes associated with fruit juice are fruit and all natural) and all natural soft drink (attributes healthy and unusual) and diet cola (attributes diet and artificial sweetener) as sub ordinate level objects under basic level soft drink category.

Loken and Ward (1990) used a similar two degree hierarchy when examining the relationship between typicality and attitude for superordinate level and subordinate category levels. They acknowledged superordinate level as product type and subordinate level as brand type categorization. They considered types of restaurants and modes of transportation as "superordinate categories" whereas; fast food restaurants and airlines were considered as subordinate categories. "Cars" were a superordinate or product class category, while "sport cars" were a less inclusive product type category and "BMW Z4" was named as specific brand level category.

## Typicality and Representativeness

Typicality has important implications in marketing as it influences product's classification, recall, and preference (Rosch and Mervis 1975; Loken and Ward 1987, 1990).

Loken and Ward (1987) proposes that when category members possess qualities that enable them to be perceived as more typical, they gain some advantages for a number of cognitive tasks in consumers' minds. Mervis and Rosch (1981) show that more typical instances of a category will be named first in free recall of category instances, will be classified faster and with fewer errors than less typical instances. Also typical instances will be learned more quickly and they will serve as a reference point when consumers make comparisons with other instances in that category. The main concern of typicality studies is to find out the factors that determine typicality.

Barsalou proposed that (1985) there are three factors that determine the degree of typicality in a category. Family resemblance is defined as how similar is an

exemplar to other members in the category and how dissimilar to members of contrast categories. The second factor that determines typicality is the degree that the product possesses attributes instrumental in achieving the goal served by the category (ideal attributes). And the third one is category members' frequency of instantiation which is defined as consumers' own judgment of the number of times the instance has come across the consumer as a member of the category. Barsalou (1985) found strong correlations between perceived typicality and family resemblance scores in natural categories, but no significant relationship exists for goal derived categories. Ideal attributes and frequency of instantiation are found to be significant with typicality for both natural and goal-derived categories.

Rosch and Mervis (1975) had stated that typicality is a function of its family resemblance. That means typicality can be defined in terms of the attributes the exemplar shares with other members of the category and how many members of the category share those attributes. A family resemblance measure is developed by Rosch and Mervis (1975). An illustration from Ward and Loken (1986) is used to demonstrate how the measure is computed. In the example there are four products in a category. Each product has three attributes and there are six different attributes which are represented by letters A, B, C, D, E and F. The four products are shown as ABC, BCD, ADE, and AFG. First each attribute is weighted by the number of products in the category that possess it. Then the weights of each of the product's attributes are summed to compute an overall family resemblance score. The more the product possesses attributes that are shared by other category members, the higher its family resemblance score will be.

| | | ABC | BCD | ADE | AFG |
|---|---|---|---|---|---|
| | A | 3 | | 3 | 3 |
| | B | 2 | 2 | | |
| | C | 2 | 2 | | |
| Attribute | D | | 2 | 2 | |
| | E | | | 1 | |
| | F | | | | 1 |
| | G | | | | 1 |
| Overall Family Resemblance Score | | 7 * | 6 | 6 | 5 |

Fig. 1 Resemblance score computation adopted from Ward and Loken (1986).

However this procedure may yield different results for natural and goal derived categories. When Ward and Loken (1986) studied “snack food” and “shampoo” categories, the correlation between family resemblance scores and product’s rated typicality varied between the two categories. A high correlation (0.87) existed for snack food category however no significant correlation is found for shampoo category. For typicality studies it is important to design the study to reveal the common attributes of a category rather than unique ones. The researcher can add attributes to category members if the attributes deemed as important are not mentioned. Also it should be noted that consumers may rate the typicality of a brand not based on family resemblance to other brands but by the extent that the brand has attributes which helps them fulfill their goals.

In order to overcome these limitations Loken and Ward (1987) suggested an alternative procedure. This alternative procedure aims to measure the extent to which members of a product or brand category possess the "salient" attributes influential in purchase decisions. In order to reveal the modal salient attributes of an object subjects are asked to list all the attributes of a product that will influence them to *buy* that product and not to buy that product. Then subjects are asked to rate the likelihood that each member of a category has each salient attribute. The brand's attribute structure score is computed by calculating the average or summed ratings across all subjects, for each brand and each salient attribute.

Nedungadi (1990) investigates the underlying attributes that influence categorization of a car, the level of gas mileage a car should have to be considered an economy car and how can firms develop their positioning and brand image strategies to be established in a category that will better help them to be recalled, recognized and preferred (Nedungadi 1990).

## Effects of Categorization Judgments on Information Processing, Product Evaluation and Choice

Another group of studies examine the effect of categorization on information processing, evaluation, and choice (Sujan 1985; Sujan and Dekleva 1987; Meyers-Levy and Tybout 1989). Past research show that categorization has a strong effect on evaluation (Sujan 1985; Moreau, Markman and Lehman 2001) and when processing information about products, categorization comes before evaluation. Other studies posit category identification and evaluation are intertwined (Cohen and Basu 1987).

A different group of studies focus on the effect of product categorization on consumer choice in retail settings. These studies investigate products organized around taxonomic versus goal derived categories, complementary versus supplementary product assortments, the congruency between consumer's internal versus retailer's external categories and how these different product bundlings affect perceived product variety, product coherence and customer satisfaction. Poynor and Diehl (2007) have analyzed how product choice is affected when product sets are organized around taxonomic versus goal based categorizations. They suggest that organizing product assortments whether as goal derived or taxonomic categories has an impact on consumer choice because consumers adopt different information processing strategies in each situation. In taxonomic categories each product in a given category would be grouped around shared attributes and depart from products of other categories on dissimilar attributes, so consumers' focus will be on this dissimilarity when processing information. In goal derived categories products do not share structural similarities but rather are organized according their usefulness in attaining a goal. When trying to reach a decision among alternatives of different goal-derived categories, consumers will try to find a commonality that they can make a comparison. Poynor and Diehl (2007) found support for their hypothesis that participants exposed to goal derived categories perceive greater similarity between the members of their choice and consideration sets compared to participants exposed to taxonomic categories. Also participants who chose from goal derived categories exhibit higher levels of psychological cohesion among alternatives than participants who chose from taxonomic groups.

In another study van Herpen, Diehl and Poynor (2007) examined the effect of categorizing products as complements on consumer decision making and choice.

They found out that complementary products can make the shopping experience more troublesome as they may confuse and distract the consumers from the target product and thus increase decision time and cognitive effort required although consumers do not acquire more information about the products during the process. However complementary products can induce positive affect that supplementary products can not as complementing target product with others will enhance its visualization (Dahl and Hoffler 2004) and suggest new uses. Van Herpen et al. (2007) confirm that participants appraised the complementary assortments as more attractive compared to supplementary products and they enjoyed the shopping experience more.

Ülkümen, Chakavarti and Morwitz (2010) studied whether being exposed to narrow versus broad categories in one context affects the evaluations and decisions in another unrelated context. Ülkümen et al. (2010) suggest that consumers' information processing style will change depending on whether they are exposed to broad versus narrow categories. Narrow categories imply there are fewer attributes to take into account whereas broad categories will induce consumers to consider a higher number of attributes in decision making. If a consumer group fruits only on the sweetness dimension, only a few, broad dimensions can be formed. However if the consumer takes into account other dimensions such as color and size, many narrow categories will arise. Consumers being exposed to narrow categories are primed or cued to think that multiple dimensions are acceptable not only for the current decision but also for subsequent decisions. In addition they will be more likely to do additional search and look for non-salient information. In contrast, when consumers are exposed to broad categories formed with only one or a few dimensions, they will not feel the urge to engage in complex cognitive processing.

Thus they will not consider higher number of dimensions in subsequent decisions and settle with the salient information easily available to them (Ülkümen at al. 2010).

Mogilner, Rudnick and Iyengar (2008) show that providing categories to less knowledgeable consumers to help their purchase decisions have a positive effect on consumers' satisfaction. Mogilner et al. (2008) conducted a field study in a supermarket chain and asked shoppers who just left the magazine aisle to complete a satisfaction survey. Shoppers rated their perceptions of the variety offered in the magazine section and how satisfied they are with their shopping experience. Findings indicate that, it is not the number of magazine options but the number of categories to group the magazines that has a significant effect on the perceptions of variety which in turn led to higher customer satisfaction. However if the consumers are familiar with the product category this positive effect decreases.

Consumers' satisfaction with product assortments and perceived variability of products are also affected by the congruency between consumers' internal categorization and retailer's external lay out (Morales, Kahn, McAlister & Broniarczyk 2005). Past research asserts that consumers' perceptions of the variety of the products sold at retail sites directly influences their attitudes toward that site, their probability of shopping again and in some cases their attitude towards the product selected from the assortments (Arnold, Oum & Tigert, 1983; Broniarczyk, Hoyer, & McAlister 1998). Internal structure refers to the sub categories consumers group products and external structure refers to the classification system of the retailer, it defines the sub categories retailers group products (Morales et al. 2005). Morales et al. (2005) conclude that consumers who are more familiar with a product category have a better developed internal schema, have higher expectations from the store or web site in terms of congruency and exhibit higher levels of satisfaction if

congruency between internal schema and external lay out exists. In contrast when there is incongruency in store lay out familiar customers become more frustrated and the degree of perceived variety decreases significantly. As unfamiliar consumers don't have a pre defined schema no such effects on perceived variety are observed. Morales et al (2005) also show that when consumers are unfamiliar to the product and internal schema is new and weakly constructed, a shopping goal replaces internal schema in evaluating perceived variety. Participants with given a shopping goal reported more overall product variety. Furthermore when there is a fit between the goal and external structure consumers perceive less overall variety but more of what they actually want to buy. In contrast when there is an incongruency consumers perceive more overall variety but less of the product they want to buy.

## Categorization of New Products

The last research stream to be examined which constitutes the main focus of this dissertation is the role of categorization on new product evaluation. Most of the categorization research on new products examines how consumers perceive, learn about, and form preferences about really new products that have both similarities and dissimilarities to existing product categories (Moreau, Markman and Lehmann 2001a; Moreau, Lehmann, Markman 2001b; Paxton, Hibbard, Brunel, Azar 2002; Ozanne et al. 1992).

There is an extant literature about really new products (RNPs). RNPs are highly innovative products that create entirely new categories and new markets (Gregan –Paxton, Hibbard, Brunel and Azar, 2002). Rather than fitting into existing categories, they either widely expand a category or create their own (Moreau,

Markman and Lehmann 2001). They require the organizations as well as the consumers to think and act distinctively (Lehmann 1997). Technological products such as MP3 players, I phones, I pads can be given as examples of really new products. The unit of study in this research is "cider". Although cider has been sold in Europe or in US for many years, no such product exists in Turkish market. Out of the 350 people who participated to this study only five of them have heard and tasted cider before. Also it is chosen as the subject of study as it lies on the border of different categories and can be attributed to either soft drink or alcoholic drink category depending on the cues used in marketing communication activities.

Analogical learning theory helps researchers to understand the process of how consumers use their existing knowledge to make sense of and learn about new products. Analogy is simply defined as the information transfer from a familiar domain (base) to a new domain (target) in order to make sense of this new domain (Gentner 1983; Gregan-Paxton et al. 2002). "An i-Pad is like a PC" denotes a mapping from PC to i-Pad. i-Pad is the domain being scrutinized and PC is the domain that acts a basis of knowledge for the comparison. Thus i-Pad is called the target and PC is called the base.

Analogy occurs in three stages: Access, transfer and mapping. Analogy uses similarities between the base and the target, utilizing the commonalities to generate inferences. These inferences then facilitate understanding of the novel product. (Gregan Paxton et. al 2002). According to Clemens and Gentner (1991) an important point in analogy use is that communalities are relation based rather than attribute based. The essential idea in an analogy is the relational structure between the units of study not the proportion of shared versus nonshared features (Gentner 1983). For example in a simple arithmetic analogy of 3:6::2:4, it is not important how many

similar features does 3 share with 2. What is important is the relationship “twice as great as” that stands between 3 and 6. An accurate relational structure is possible only if a robust distinction can be made to distinguish which attributes will be mapped.

When making domain comparisons Gentner (1983) lists 3 types of different comparisons. First one is “literal similarity” which comparisons are made on the basis of both object-attributes and relational predicates. The number of mapped predicates is higher than the number of nonmapped predicates. For example a statement like “The X12 star system in the Andromeda galaxy is like our solar system” can be interpreted as the X12 star shares the same attributes; yellow, medium sized etc. like our sun. It can also be inferred that X12 planets share some relational characteristics with our solar system such as X12 planets revolve around the X12 star as in our system (Tversky 1977; Gentner 1983).

Second one is “analogy” where only relational predicates with no or few objects attributes are mapped from base to target. The statement “The hydrogen atom is like our solar system” implies inferences mainly of the relational structure. The nucleus does not possess the same attributes with the solar system (e.g. it is not yellow or the same size with the sun) but the same relational structure of planets revolving around the sun can be observed with electrons revolving around the nucleus.

The third type of comparison Gentner (1983) describes is “abstraction”. In an abstraction the base domain is a relational structure. Object nodes such as sun or planet are replaced with generalized physical entities. According to Gentner (1983) the difference between an analogy and an abstraction is that there are no unmapped predicates in an abstraction.

In an analogy when you change one of the relations in the mappable system at least one other relation is effected and changed as well. This interrelated system is an indicator of systematicity where lower order predicates are influenced by higher order predicates. When mappable system is able to promote mutually interconnecting relationships, the predicates of this mappable system have a higher chance of transferring from the base to the target. According to Gentner (1983) causal descriptions are preferred over static spatial descriptions in a theory of analogy but causal descriptions alone are not sufficient to define an analogy. Analogies should also be able to operate without any restriction of specific content as an analogy formed only by causal relations may limit the comprehensiveness of the analogy. Gentner (1983) also points out that using only "appropriate" abstractions for an analogy would be a mistake because appropriateness is not the right term to define an analogy. "Appropriate" is not a clear definition and also, analogies may also map inappropriate abstractions.

In the beginning of this section it is mentioned that most of the new product categorization research focus on novel products that fit into two different categories at the same time. Different from the previous studies, this research analyzes a new product that can automatically be categorized into alcoholic drink category. Cider is chosen as the new product in this research as it is not sold and merely known in Turkish market. The hypothetical cider brand contains 3 percent alcohol, an attribute that seems sufficient to categorize it as an alcoholic drink. This dissertation studies the effects of providing label and relevant information about soft drink category in order to direct consumers to that designated category and away from more likely (alcoholic drink) categorizations. Can a new product that will be categorized into a particular category without any supervision made believe that it belongs to another

category? What is the effect of providing a label in categorization process and performance evaluations?

We also attempt to analyze the effect of providing congruent versus incongruent information on attitude formation and purchase intention after the new product is categorized in consumers' mind. Two different advertisements one picturing cider as a soft drink and the other picturing cider as an alcoholic drink are used for manipulation. In a 2 (soft ad/alcoholic ad) x 2 (congruent information/ incongruent information) experimental design the hypothesis are tested.

# CHAPTER 3

# HYPOTHESES

Recent studies in categorization investigate the use of categories in making inferences about new instances (Gregan-Paxton 1999; Murphy and Ross 1994; Thomas 1998). Research in knowledge transfer proposes that knowledge from a known, existing category is transferred to an unknown target in three stages: access, mapping and transfer (Gentner 1989; Moreau, Markman and Lehmann 2001). In the first stage a familiar category has been accessed in consumer's mind, then properties of that category are mapped onto properties of the target item by one-to-one correspondence. In the last stage once the mappings are constructed, additional information about accessed category is transferred to the target item with the initial mappings serving as pathways for the additional knowledge (Moreau, Markman and Lehmann 2001). Marketers can affect categorization based transfer if they provide a "category label" that proposes the new product's category membership. Providing a category label prompts consumers to make more extensive mappings than no label is presented.

A category label enables consumers to perceive the product as a whole (Gestalt-like situation) with the attributes set by the category. It will direct attention onto the features within the category while distorts attention to the features of other categories (Medin and Schaffer 1978; Murphy and Rose 1994). Because of really new products' obscure nature, when facing with a RNP consumers most probably will not be able to facilitate relevant knowledge structures from memory. A label will

provide a surface correspondence between the new product and the base product so that consumer will transfer the knowledge from base to the novel product (Gregan-Paxton et al. 2002). Thus the first two hypotheses are:

Hypothesis 1: When faced with a new product, consumers will categorize the new product in the direction of the cue provided in the advertisement and away from other more likely categorizations.

Also consumers are expected to have higher degrees of category confidence once they are provided with a label. So, second hypothesis is proposed:

Hypothesis 2: When consumers are cued with a label, there will be an increase in their categorization confidence scores.

Category labels act as a factor in predicting the type of inferences made about missing information that causes feature similarity to be disregarded. (Gelman and Markman 1986). When a plausible category label is present, extensive mappings and knowledge transfer from the familiar category to the unfamiliar item are more likely to occur. When exposed to the category label, subjects are expected to induce extensive knowledge transfer based on the cued category. So when a novel product is associated to an existing schema through analogy, the comparable features between the base domain and the new product are specified and the attributes of the new product are organized accordingly (Gregan-Paxton et al. 2002). Also if the analogy helps the consumer to perceive the new product as an addition to the familiar domain, it induces positive affect. However, if the new product requires the

consumer to form an entirely new knowledge structure no such affect is observed (McQuarrie and Mick, 1996)

In this study the participants exposed to soft drink (alcoholic drink) label are expected to categorize cider as a soft drink (alcoholic drink), and then transfer the attributes of soft drinks (alcoholic drinks) to cider. Thus the expected benefits from cider are anticipated to be in line with soft drink (alcoholic drink) category. This leads to the following hypothesis.

Hypothesis 3: Consumers' performance expectations of the new product will be in line with the performance of the products that they think belong to the same categorization.

If consumers cannot achieve analogy based transfer with certainty their ability to make more extensive mappings from base to the target domain may be impaired. Analogy based transfer consists of three stages: access, mapping and transfer. When faced with a new product, access is the stage where a familiar category has been accessed from the memory (Gentner 1989; Gregan and Paxton 1997). It won't be wrong to assume that if subjects are not certain about which category to access, this situation may inhibit their ability to map and transfer the information from the base category to the new target. That is, if they are not confident with their categorization decisions they may have more difficulty in constructing the performance expectations for the new product. Moreau et al. (1999) suggested that consumers' preferences for the new product will be affected by their expectations from that new product. That means higher expectations will lead to higher preferences or lower expectations will lead to lower preferences. In this study it is posited that if

consumers are not certain about the performance expectations of the new product, it will lead them to have lower preferences.

Thus the fourth hypothesis is proposed:

Hypothesis 4a: Lower degrees of categorization confidence for the new product will result in less favorable brand attitude.

Hypothesis 4b: Lower degrees of categorization confidence for the new product will result in lower levels of purchase intention.

Studies in cognitive psychology and in consumer behavior elucidate how processing and evaluative judgments can be affected by the level of congruity between products and their related product category schemas (Meyers-Levy and Tybout 1989; Cohen and Basu 1987; Sujan 1985). Previous research analyzes the effects of a match or a mismatch between the product and stimulated category schema. When there is a match, evaluations are based on the product category schema affect. When there is a mismatch, piecemeal processing is adopted. Consumers evaluate each piece of information separately. Affect is comprised piecemeal by assembling the affect associated with the product's specific attributes (Fiske and Pavelchak 1986, Sujan 1985). In real life, it is not possible to categorize new products only as complete match or complete mismatch between a product and category schema. They possess attributes both congruent and incongruent with a general product category. As Rosch et al. (1976) suggest *"*category boundaries are not necessarily definite*"* (p. 109).

Schema incongruity is defined as the situation where a mismatch occurs between product's attributes and the activated schema (Meyers-Levy and Tybout 1989) Peracchio and Tybout (1996) used schema incongruity in a similar manner

when they describe it as the discrepancy between the new information and person's expectations.

Mandler (1982) states that the level of incongruity is defined by the degree of ease that these mismatches can be resolved. Moderate incongruities are the ones that require less effort and give a sense of accomplishment when resolved. Meyers-Levy and Tybout (1989) propose that moderate incongruity initiates a certain level of cognitive processing and increases arousal which in turn cause consumers to evaluate the product more favorably. Ozanne, Brucks and Grewal (1992) define moderate incongruity as the situation where not all but most of the initial information received by the consumer is consistent with an already established category prototype. Extreme incongruities on the other hand are harder to resolve, takes more time, requires more cognitive effort to process and induce negative effect. In order to operationalize incongruency Meyers-Levy and Tybout (1989) employed Rosch's (1978; Rosch et al. 1976) classification of natural objects. As mentioned earlier Rosch (1978) defined a three level hierarchy for the categorization of natural objects. Categories are named as; superordinate categories, basic categories and sub ordinate categories residing from top to bottom respectively.

Meyers-Levy and Tybout (1989) categorize beverage as superordinate level object (attributes associated with the category are liquid, thirst quenching and good with food), soft drink and fruit juice as basic level category objects (some of the attributes associated with soft drink are cold, carbonated and preservatives and some attributes associated with fruit juice are fruit and all natural) and all natural soft drink (attributes healthy and unusual) and diet cola (attributes diet and artificial sweetener) as sub ordinate level objects under basic level soft drink category. They investigate whether consumers will evaluate a product more positively when schema congruity

is moderate than when there is complete schema incongruity or complete schema congruity. First they informed the participants about a new drink, describing it either as a new beverage (superordinate category), or a soft drink (basic category). Moderate incongruity was realized either by beverage/high preservative or soft drink/all natural conditions. Extreme incongruity was represented by beverage/all natural condition. They assume that when faced with a schema incongruity consumers will descend to the next lower levels in the hierarchy to surpass the incongruity. There is a direct link between the next lower level structure and activated schema in the associative network. For moderate incongruities, gaining access to that link with moderate effort is possible. Consumers in moderate incongruity condition are expected to move one step down; for example from beverage superordinate category to soft drink basic category as "has preservative" is an attribute associated with soft drink category. Extreme incongruity on the other hand requires much more effort to dissolve. Consumer has to descend multiple levels, as the next level in line is not adequate to form a representation of the observation. Consumers have to move two levels down from beverage superordinate category to reach all natural soft drink sub-category. Extreme incongruity is expected to generate more negative evaluations than moderate incongruity. Meyers-Levy and Tybout (1989) proposed that moderate schema incongruity will cause more positive product evaluations than extreme incongruity and find support for this hypothesis for nondogmatic individuals.

Based on these findings we suggest that schema incongruity induces negative product evaluations. People do not like obscure and complicated objects but prefer the ones that offer predictability and satisfy their expectations (Mandler 1982). According to Rosch (1978) the main motive for forming categories is the need to

make sense of the perceived world. It is proposed that congruent information offers a more structured world view and enables predictability whereas incongruent information causes confusion and makes resolution hard to achieve.

In this study the operationalization of congruency/incongruency was realized differently than that of Meyers-Levy and Tybout (1989). Pretest participants indicated the attributes they thought were congruent and incongruent for soft and alcoholic drinks. High scores indicated incongruity. Healthy attribute received the highest score within the other incongruent attributes for alcoholic drinks and nutritious received the highest score for soft drinks. In terms of Meyers-Levy and Tybout's operationalization it can be assumed that these two incongruent attributes cannot be resolved by moving down one level in the hierarchy. Soft drinks and alcoholic drinks are the basic categories of beverage superordinate category and it is hard to relate healthy attribute to any of the alcoholic drinks in sub ordinate category. As for nutritious although it seems possible to relate it to a sub category of soft drinks, for example to "fruit juice", this contradicts with the fact that cider contains alcohol and generally accepted attributes of soft drinks may not be eligible for such a beverage. It is posited that these two attributes will cause extreme schema incongruity. Thus Hypothesis 5 and 6 are proposed:

Hypothesis 5: After the new product is categorized in consumers' mind consumers presented with an incongruent attribute will have

a) Lower degrees of attitude toward the brand
b) Lower degrees of purchase intention than consumers presented with a congruent attribute.

Hypothesis 6: After the new product is categorized in consumers' mind presenting consumers with an incongruent attribute will cause them to lower their attitude toward the brand and purchase intention scores.

Past research suggests that incongruency between information received about a product and product category expectations affects information processing of individuals (Sujan 1985; Ozanne et al. 1992; Peracchio and Tybout 1996). According to Ozanne et al.(1992) consumers seek for a level of certainty in their judgments in order to make sense of the world around them. If they believe their judgments are not accurate their resultant evaluations will reflect this inaccuracy. Mervis and Rosch (1981) state that the accuracy of classification is greater for representative members of a category than less representative members. Peracchio and Tybout (1996) studied the effect of extreme versus moderate versus low incongruity in product evaluation and found that extreme incongruity caused the greatest difficulty in understanding and categorizing the product, followed by moderate and low incongruity. Ruys, Dijksterhuis and Corneille (2008) extended congruity and its effect on categorization to social categorization settings and demonstrated that, social categorization occurred faster and more accurately when the participants evaluations of certain stereotypes are congruent with the given attributes (for example unattractive foreigners, unattractive prostitutes, attractive fellow-citizens and attractive brides) than they are incongruent (attractive foreigners, attractive prostitutes, unattractive fellow-citizens and unattractive brides).

As a result it is proposed that an incongruent attribute may cause confusion in categorization decisions and thus affect categorization confidence. Once

consumers' categorization decisions are diluted, this will consequently affect their performance expectations. Thus Hypothesis 7 and 8 are proposed:

Hypothesis 7: Consumers' categorization confidence for the new product will decrease as an incongruent attribute is introduced.

Hypothesis 8: Presenting consumers with an incongruent attribute that did not match with their categorization decisions will cause them to lower their performance expectations.

# CHAPTER 4

# RESEARCH DESIGN AND METHODOLOGY

## Product

Cider is the product chosen as the unit of analysis in this study. Cider is defined both as “an alcoholic drink made from apples” and also as “juice from crushed apples used as a drink or to make vinegar”. It is chosen as the new product in this study because it is not sold in Turkish market and it is most likely that vast majority of Turkish consumers never heard of cider before. Indeed when asked if they had heard of cider before more than 99 percent of the participants in the study said they hadn’t. This lack of familiarity ensures that subjects will have no existing representations of cider and evaluate it solely on the information given by the advertisements. Cider is also chosen as the object of the study as it lies on a thin line between a soft drink and an alcoholic drink. As it can be understood from the two different definitions in the dictionary, in some countries cider is sold as a carbonated soft drink (Japan, Korea, and Pakistan) whereas in others it is sold as an alcoholic drink, the alcohol percentage varies from 2 percent to 8.5 percent. (England, Germany, France, Ireland, Finland). In some countries it is sold both as a soft drink and also as an alcoholic drink (US, Mexico). Cider cannot be automatically categorized as a soft drink or as an alcoholic drink and yet knowledge from these two categories can be used to form an initial representation of the new product. This characteristic of cider eases the

manipulation and makes the communication efforts more efficient and their effects more viable.

The fictional cider brand in our study contains 3 percent alcohol which is similar to the amount in light beer. This percentage is chosen specifically to ensure that cider contains a noticeable degree of alcohol but not too much that will make it impossible to be categorized as a soft drink.

## Participants and Method

Three hundred and fifty undergraduate and graduate students of various disciplines (advertising, management, finance) from a major university participated in the study. 51 percent of the participants were male and 49 percent were female. As graduate students were also recruited, the age interval of the participants ranged from 20 to 42.

The study was designed to test the hypotheses that when consumers encounter a product they have never seen before, they will use the label information provided in the advertisements which inform them about the nature of the product to form their categorization judgments. Categorization confidence will increase with the introduction of the label as opposed to no label is presented. After the new product is categorized in consumers' mind, if consumers are presented with an information that is incongruent with their categorization decisions, this ambiguity will cause them to lower their (1) attitude and (2) purchase intention towards the new product. Also consumers who are presented with incongruent attribute information will have lower degrees of brand attitude and purchase intention scores compared to the scores of consumers who are presented with congruent information. On the other hand, consumers who are exposed to new information that reinforces their categorization

decisions will increase their brand attitude and purchase intention scores towards the new product.

All the hypotheses in the study were tested with a single experiment. In order to test the hypotheses category label and information congruity were manipulated with a 2 (soft label- alcohol label) x 2 (congruent information – incongruent information) between groups design.

Eight different print ads were created to test the hypotheses. In order to determine the design and copy of the ads several pretests were run.

## Pretests

The first pretest was conducted to explore the attributes consumers associate with soft drinks and alcoholic drinks. Some product attributes are more desired by consumers and have stronger associative links with a certain product category. In order to manipulate cider as a soft drink or an alcoholic drink, it was important to use the right attributes both in the design of the advertisements and in the survey.

40 pretest subjects were asked to indicate the attributes they thought were relevant to (1) soft drinks, and to (2) alcoholic drinks as well as the attributes they considered not related to (1) soft drinks, and (2) alcoholic drinks. In the beginning of the pretest, subjects were told that the term soft drink covers all carbonated drinks, all kinds of fruit juices, ice tea and similar drinks, all types of mineral water and ayran. They were also asked to describe the occasions and places in which they would prefer a soft drink and an alcoholic drink. Refreshing, delighting, thirst quenching, gives me energy, tastes good, good with meals, healthy, good for digestion, eases the stomach came up as the most frequently mentioned attributes for

soft drinks. One subject quoted *"I drink soft drinks when I am thirsty and don't want to drink water".* Another subject told *"... as soft drinks have lots of variety, they are suitable for every meal"*

*"*Nutritious*"* and "prevents hunger" were found to be the attributes not related with soft drinks. As for alcoholic drinks, "relaxing", "helps socializing", "helps me to overcome my anxiety", "entertaining", "gives pleasure" were the most frequently given descriptions. "Healthy" was indicated by the vast majority of the participants as an attribute not related to alcoholic drinks. As for the second question asking where to drink these two types of beverages, participants indicated that soft drinks were good with fast food and with meals in general, were more suitable to drink during day time with friends, preferred at the cafes, helps you cool off in hot weather and on the beach. Alcoholic drinks were mentioned to be better at parties, when going out with friends at night, on romantic occasions with the loved one and on celebrations. One participant revealed *"they (alcoholic drinks) help me to have more fun. I laugh more, I dance more".* Another participant told "*… I like to have alcoholic drinks at a romantic dinner with my wife, some place near Bosphorus".* Some other participant stated that alcoholic drinks could not be consumed at every place.

As a third and final question the respondents answered what they would tell if they were to run a print ad for a soft drink and another ad for an alcoholic drink. The last question aimed to better understand what type of attributes they associate with these beverages and whether the lines in the ads would give out their opinions. Most of the taglines created for soft drinks emphasized on the refreshing aspect of soft drinks. Most of the respondents came up with taglines similar to "refresh yourself" or "the cool refreshing taste". The taglines for alcoholic drinks accentuate the

entertaining side of alcoholic drinks as “enjoying a party with friends” was a common theme in the taglines.

After the researcher analyzed the answers of the pretest, and classified attributes as the ones belonging to soft drinks and the ones belonging to alcoholic drinks, a second judge who was an associate professor in marketing coded the answers and came up with confirming results (Interjudge reliability 96 percent).

A second pretest is conducted to 22 subjects asking them to rate several attributes in terms of how well that attribute defines soft drinks and alcoholic drinks. The attributes found to be related with soft and alcoholic drinks in the first pretest were included in the list as well as the attributes added by the researcher. The same attribute was evaluated both for soft drinks and for alcoholic drinks by participants. The attributes were: (1) refreshing, (2) healthy, (3) helps socializing, (4) nutrient, (5) fun, (6) cooling, (7) gives pleasure (8) prevents hunger, (9) thirst quenching. The attributes nutrient and prevents hunger were assumed to be irrelevant with both type of drinks by the researcher and were added to see how subjects would rate their congruency. Paired t-test results demonstrate significant differences between soft drinks and alcoholic drinks in all the attributes listed except for refreshing. T-test results are shown in Table 1 and Table 2.

Table 1. Paired Samples Descriptive Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | soft_cooling | 4,23 | 22 | ,685 | ,146 |
| | alco_cooling | 3,14 | 22 | 1,283 | ,274 |
| Pair 2 | soft_healthy | 3,18 | 22 | 1,097 | ,234 |
| | alco_healthy | 1,59 | 22 | ,959 | ,204 |
| Pair 3 | soft_socializing | 1,95 | 22 | ,575 | ,123 |
| | alco_socializing | 3,95 | 22 | 1,214 | ,259 |
| Pair 4 | soft_nutrient | 2,36 | 22 | 1,093 | ,233 |
| | alco_nutrient | 1,41 | 22 | ,590 | ,126 |
| Pair 5 | soft_fun | 2,91 | 22 | 1,019 | ,217 |
| | alco_fun | 4,27 | 22 | 1,202 | ,256 |
| Pair 6 | soft_refreshing | 3,82 | 22 | ,795 | ,169 |
| | alco_refreshing | 3,23 | 22 | 1,343 | ,286 |
| Pair 7 | soft_pleasure | 3,00 | 22 | ,816 | ,174 |
| | alco_pleasure | 4,09 | 22 | 1,306 | ,278 |
| Pair 8 | soft_hunger | 2,45 | 22 | ,963 | ,205 |
| | alco_hunger | 1,77 | 22 | ,922 | ,197 |
| Pair 9 | soft_quenches_thirst | 3,50 | 22 | 1,225 | ,261 |
| | alco_thirst | 2,14 | 22 | ,990 | ,211 |

Table 2. Paired Samples Test Results

| | | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | | | |
| Pair 1 | soft_cooling - alco_cooling | 1,091 | 1,306 | ,278 | 3,918 | 21 | ,001 |
| Pair 2 | soft_healthy - alco_healthy | 1,591 | 1,501 | ,320 | 4,971 | 21 | ,000 |
| Pair 3 | soft_socializing - alco_socializing | -2,000 | 1,309 | ,279 | -7,165 | 21 | ,000 |
| Pair 4 | soft_nutrient - alco_nutrient | ,955 | 1,046 | ,223 | 4,282 | 21 | ,000 |
| Pair 5 | soft_fun - alco_fun | -1,364 | 1,706 | ,364 | -3,750 | 21 | ,001 |
| Pair 6 | soft_refreshing - alco_refreshing | ,591 | 1,436 | ,306 | 1,930 | 21 | ,067 |
| Pair 7 | soft_pleasure - alco_pleasure | -1,091 | 1,540 | ,328 | -3,322 | 21 | ,003 |
| Pair 8 | soft_hunger - alco_hunger | ,682 | 1,359 | ,290 | 2,354 | 21 | ,028 |
| Pair 9 | soft_quenches thirst- alco_thirst | 1,364 | 1,136 | ,242 | 5,631 | 21 | ,000 |

## Experiment Design and Dependent Variables

After the pretests eight different print ads were created. (i) soft drink-without label, (ii) soft drink-with label, (iii) soft drink- congruent info, (iv) soft drink-incongruent info, (v) alcoholic drink-without label, (vi) alcoholic drink-with label, (vii) alcoholic drink-congruent info , (viii) alcoholic drink-incongruent info . The information gathered from the pretests was used in designing the ads. The pictures and wordings chosen for the ads were based on the findings from the pretests.

A final third pretest (n= 55) revealed no significant difference between the eight advertisements in terms of subjects evaluation of the ad, attitude toward the ad, and perceived effectiveness of the ad. (Repeated measure ANOVAS; all p's > 0.05 )

The dependent variables tested in the experiment were: perceived categorization of cider, category confidence, performance expectations from cider, attitude towards cider and purchase intention. Category label and information congruity were manipulated with a 2 (soft label- alcohol label) x 2 (congruent information – incongruent information) between groups design. Each of the four groups was shown three ads sequentially. Depending on the manipulation (soft drink/ alcoholic drink) the first ad either showed (1) a picture of friends eating lunch at a place which resembles a university cafeteria with the ad copy reading "friendship moments with cider" and below "enjoy the meals with refreshing taste of apple" or (2) a sketch of people, with a girl dressed for the night at the center, having fun at a place which resembles a night club and the ad copy reading "entertaining moments with cider" and below " have fun with the pleasurable taste of apple". Both ads also displayed a picture of two cider bottles. The bottle picture was chosen carefully as the bottle used in cider ads meant to be as androgen as possible to resemble both soft

drink bottles and alcoholic drink bottles at the same time or yet not to resemble any one of them.

Another important statement displayed in both ads was the information that cider "contained 3 percent alcohol" written with a relatively smaller font at the very bottom of the all ad prints. This information aimed to made categorization task more difficult for the soft drink group and to have a better understanding of the label effect that would be provided in the upcoming advertisement. The fact that a beverage contains alcohol can be thought as crucial in consumers' perception towards that beverage and on their categorization decisions. It can be suggested that if a beverage contains alcohol it will automatically be categorized as an alcoholic drink. What happens when information given in advertisements tells that this specific beverage contains alcohol but it is a soft drink? Will consumers form their categorization decisions according to initial and in this case prevailing information or the label provided afterwards? Previous studies indicate that providing a cue will lead the consumers in the direction of the cue and away from other possible categorizations. This study extends this hypothesis further and proposes that consumers will categorize the product as suggested by the label and in the presence of other not only possible but also more likely to occur categorizations. Our hypothesis suggests that when faced with a new product consumers will categorize the new product in line with the label given in the advertisement and away from other more likely categorizations. After the second ad, where an explicit soft drink label is shown for the soft drink group, categorization decisions are expected to provide support for this hypothesis.

Another issue that is related with the first hypothesis is the differences in category classification. The soft drink label manipulation group enables us to explore

the boundaries of category classification for beverages. As mentioned earlier in the dissertation, three different categorization classifications can be specified in categorization literature: (1) classical view, (2) probabilistic/prototype view and (3) exemplar view (Loken and Ward 1987). The classical view suggests that an object should possess a list of certain attributes in order to be classified as a member of a certain category. These certain attributes are necessary in order to determine the category membership. The membership requires strict rules and it is all or none, it is either a member or not a member, there is no graded structure in membership. Probabilistic view asserts that there aren't any clear-cut rules in defining categories but rather categories are organized around a set of correlated attributes (Rosch1975). Membership in probabilistic categories is naturally graded. There are better or more typical members which possess more characteristic properties than the poorer ones.

If a majority of participants in soft drink category categorize cider as an alcoholic drink because it contains alcohol regardless of the soft label information provided in the advertisements that means that classical view is more appropriate in classification as an automatic categorization process based on a defining attribute is realized. (if it has alcohol it should be an alcoholic drink). However if a significant part soft drink group participants define cider as a soft drink that indicates that the categories are not clear cut but fuzzy. (it has alcohol but it is a soft drink). This time probabilistic view is more suitable in defining the categorization process.

Experiment

The respondents were handed out a single questionnaire at the beginning of the experiment. First ad was shown for 30 seconds and after the first ad the respondents were asked to make their categorization decisions. Adapted from Moreau et al. (1999) perceived categorization was measured by asking participants which section

of the supermarket (soft drink section or alcoholic drink section) they would look for if they were buying cider.

Later categorization confidence was measured on a two item, seven point scale (Iyengar and Leppen, 2000). Participants were asked how confident they were on their categorization decision (1- not confident at all, 7- very confident) and whether they felt that they were well-informed about the decision (1- not informed at all, 7- very well informed).

After completing a filler task, second advertisements were shown. The ad designs were exactly the same with the previous ones only this time a label was introduced. Depending on the manipulation either the label "Cider your *new soft drink*" or "Cider your *new alcoholic drink"* was written with relatively bigger fonts under the cider bottle pictures. The other features of the ads remained the same. Participants asked once again to complete the categorization and categorization confidence questions.

In this part of the study, subjects were also asked to fill out performance expectation questions. The results of the first two pretests were used in the operationalization of the performance expectation items. Performance expectation measure initially consisted of 8 items which aimed to understand subjects' evaluations of cider. The items intend to explore the kind of benefits subjects expect from cider, where and in which occasions they would consume cider. This information will strengthen the understanding of whether cider is categorized as a soft drink or as an alcoholic drink. Performance expectation items are shown in Table 3 below. The items are evaluated on a 7 point scale ranging from I disagree completely (1) to I completely agree (7). The initial scale consisted of 8 items.

Table 3. Performance Expectation Items

| |
|---|
| (1) I drink cider to quench my thirst |
| (2) I drink cider at a party |
| (3) I drink cider on the beach under the sun |
| (4) I drink cider to reduce my anxiety |
| (5) I drink cider when I want something healthy |
| (6) I drink cider when I go out at night with my friends |
| (7) I drink cider when I eat fast food |
| (8) It is not weird for me to drink cider when I walk on street. |

Items number (1), (3), (5), and (7) intend to measure soft drink performance and items number (2), (4), (6) and (8) aim to measure alcoholic drink performance. When scale reliability scores (cronbach alphas calculated separately for soft drink and alcoholic drink performance expectation measures) were calculated the results showed that omitting item number (3) for soft drink scale and item number (8) for alcoholic drink scale would yield higher reliability scores. So the final performance expectation measures consisted of 3 items for each category. For soft drink category these items were (cronbach's alpha = 0, 69):

-I drink cider to quench my thirst

-I drink cider when I want something healthy

-I drink cider when I eat fast food.

For alcoholic drink category the items were listed as (cronbach's alpha =0, 75)

-I drink cider at a party

-I drink cider to reduce my anxiety

-I drink cider when I go out at night with my friends

In order to check the hypotheses that attitude towards cider and purchase intention scores increase/decrease when congruent/incongruent new attribute is introduced, each of these scales were measured two times; before and after the third ad which displayed the congruent/incongruent information. Attitude towards cider was measured on a six item seven point scale adapted from MacKenzie, Lutz & Blech (1986). The respondents were asked whether cider was attractive (7) or not attractive (1); very interesting (7) or not at all interesting (1); very good (7) or very bad (1); favorable (7) or unfavorable (1); nice (7) or not nice (1); appealing (7) or unappealing (1).

Purchase intention is measured by asking participants whether they would buy cider or not on a 7 point scale. (7- Definitely Buy, 1- Definitely Not Buy)

After the participants completed attitude towards product and purchase intention questions they were given a second filler task about their TV programme choices before moving on to the third ad.

In the last part of the experiment participants in the soft drink condition/alcoholic drink condition saw a third ad which showed a congruent attribute or an incongruent attribute of a soft drink/alcoholic drink depending on the manipulation. The congruent attribute chosen for soft drink was “quenches thirst” and it was expressed as “when you want to quench your thirst”. The incongruent attribute used was “nutrient”. The ad in this condition read “when you want something nutritious”. As mentioned earlier the attribute nutritious came up as an irrelevant attribute for a soft drink in pretests. As for alcoholic drink condition the congruent attribute selected was “helps socializing”. The ad in this condition read “when you want to socialize”. For the incongruent condition “when you want something healthy” was used in the copy of the ad. This time in order to see the

effect of new attributes more clearly, the ads had a simpler design. There was only one picture in the ads, the one depicting the cider bottles and the ad copy only revealed the label information "Cider your new alcoholic/soft drink", the attribute information and the statement that cider contains 3 percent alcohol.

However it should be noted that attribute congruency defined that way was based on its congruency with ad label/ info provided in the advertisements. It is not the congruency between the category indicated by the participant and the category label. A congruency score to measure the congruency between the category indicated by the participant and the category label shown in the advertisements was also calculated. It is assumed that after seeing the second ad participants formed their categorization decisions. Categorization decision given after seeing the second ad featuring the label was measured by a variable named as "categorization 2". An attribute is considered *congruent* only if the participant categorized cider as shown by the category label in the second ad, that is if cider is categorized consistent with the ad manipulation, and if the attribute information shown in the third advertisement is congruent with the participant's categorization decision (which also means information is congruent with the category indicated by the category label and ad information). In other words categorization 2 score must be consistent with the category label/ad information and the attribute displayed must be consistent with the category label shown. For example if a participant who is in soft ad/soft label group categorized cider as a soft drink and exposed to soft drink congruent "when you want to quench your thirst" attribute then this attribute is defined as congruent. Or a participant who is in alcohol ad/alcohol label group categorized cider as an alcoholic drink and exposed to alcoholic drink congruent "when you want to socialize" attribute then it is also called a congruent attribute. In all other conditions attributes

are considered incongruent. For example if a soft ad/soft label group participant categorized cider as an alcoholic drink after seeing the second ad or an alcohol ad/alcohol label group participant categorized cider as a soft drink, these participants were automatically considered as being exposed to an incongruent attribute in the third ad. Category decisions indicated after the third ad were not taken into consideration in accounting for congruency effects.

The respondents filled out their categorization decisions, confidence in categorization, performance expectation, attitude toward cider, and purchase intention scales for the last time. All three ads were shown about 30 seconds each and the whole experiment took approximately 20 minutes.

## Covariates

### Consumer Innovativeness as covariate

Consumer innovativeness is an important factor in the evaluation of the new products as it facilitates consumers' adoption of the new products. Innovativeness is defined as how open and receptive an individual is to new experiences and to process new stimuli (Golsmith 1984; Leavitt and Walton 1975). Midgley and Dowling (1978) defined consumer innovativeness as the degree to which an individual can take innovation decisions unaffiliated from his/her social environment. Im, Bayus and Mason (2003) indicated a positive relationship between innate innovativeness and new product adoption behavior. Holak and Lehmann (1990) differentiate between early and late adopters on four dimensions and these two groups differ significantly in terms of their purchase intention towards new products. Cestre and Darmon (1997)

showed some product features are more important for early adopters than late adopters in the evaluation of new products. Thus consumer innovativeness is added as a covariate and in order to test consumer innovativeness a 6 item, 7 point scale adapted from Mannign, Bearden and Madden (1995) was used. The items were evaluated as (7- I completely agree and 1- I completely disagree). The items were; (1) Prior to purchasing a new brand, I prefer to consult a friend that has experience with the new brand, (2) I often seek out information about new products and brands, (3)I like to go to places where I will be exposed to information about new products and brands, (4) When I am interested in purchasing a new service, I do not rely on my friends or close acquaintances that have already used the new service to give me information as to whether I should try it, (5) When I go shopping, I find myself spending little time checking out new products and brands, (6) I like magazines that introduce new brands. Items 1 and 5 were reverse scored. (consumer innovativeness scale reliability = 0,76).

Familiarity as a covariate

Familiarity is considered to have an important effect on categorization of new products. Previous studies indicated a significant relationship between familiarity and affect (Alba and Mormorstein, 1987; Brucks, 1985). Other studies posit that knowledge has an effect on the content of thinking (Alba an Hutchinson 1987). Rao and Monroe (1988) stated that information used in the evaluation of product quality depends on consumers' familiarity with the product. Unfamiliar consumers possess little information on product attributes and a less developed schema so they can not employ intrinsic information when evaluating a product. As the familiarity with the

product increases so does their ability to use intrinsic information. Reliance to extrinsic information decreases for moderate familiar consumers form a more developed schema in their memory. High familiarity on the other hand induces a different effect. Consumers with high familiarity possess a market-based knowledge about the product class, and they combine this extrinsic knowledge together with the intrinsic knowledge to form an overall quality judgment (Rao and Monroe 1988). Mandler (1992) and Peracchio and Tybout (1996) suggest that the level of knowledge possessed by the individual determines the amount of resources devoted to resolve the incongruities about an activated category schema. There are different views on category expertise and its effect on information processing styles.

Sujan (1985) assert that there is a significant relationship between expertise within a product category and information processing style. Expert consumers adopt a category based affective process in evaluation when the attribute information is congruent with the product category information. If the attribute information is incongruent they use piecemeal processing that is they evaluate new information on an attribute by attribute basis. Other studies posit that when individuals possess limited knowledge they receive the incoming information in a structured and orderly fashion and are not capable of forming interconnections between the elements (Alba and Hutchinson 1987; Peracchio and Tybout 1996). Also the affect they develop to the product features is moderate as they can generate limited issue related thought. In contrast knowledgeable individuals are capable of forming complex interconnected relations and produce strong affect towards product features. The incongruent information can be accommodated much more readily and effortlessly (Peracchio and Tybout 1996). On the other hand Fiske and Taylor (1991) suggest that schema inconsistent knowledge has more effect on individuals who have little information

about the activated category. The individuals who are experts or have sufficient information to elaborate on the activated category are able to notice and use both schema congruent and incongruent information. All these previous studies indicate the importance of familiarity in information processing and product evaluation of new products. Thus familiarity is added as a covariate.

A two item 7- point numeric format is used to measure familiarity (Machleit, Allen, and Madden 1993). The respondents are asked whether they were (7- familiar, 1- unfamiliar; 7- knowledgeable, 1- not knowledgeable) with alcoholic drinks and soft drinks. (familiarity scale reliability = 0,80).

Religious beliefs as a covariate

Attitude towards a product is strongly affected by affect-laden associations that are linked to the category that the product belongs to (Mandler 1982). The participants who did not consume alcohol because of their religious beliefs may have formed such a negative affect-laden association with cider as cider contains alcohol, and inclined to base their evaluations on this negative affect. In order to measure this effect participants were asked whether they consume alcohol in their daily lives and if they don't to indicate the reason. The options were presented as a) I don't like its taste b) Because of my religious beliefs and c) Other. The participants who selected the "other" option were further requested to elaborate on the reason.

# CHAPTER 5

# DATA ANALYSIS AND FINDINGS

## Hypotheses Testing

### Categorization

Participants completed the categorization and categorization confidence measures three times.

The first time was after seeing the first ad that appeared without any label and the second time was after viewing the second ad with the explicit soft or alcoholic label depending on the manipulation. The results gathered from the first two advertisements support the first hypothesis.

Of those participants who were exposed to advertisements depicting cider as a soft drink without showing any label, sixty-three percent categorized cider as an alcoholic drink as opposed to thirty-seven percent of the subjects who categorized it as a soft drink. After the second ad where an explicit soft drink label is shown, the percentage of the participants who categorized cider as an alcoholic drink reduced to forty-two percent and the percentage of subjects who categorized it as a soft drink increased to fifty-eight percent.

For the participants who were exposed to advertisements depicting cider as an alcoholic drink without showing any label, seventy-two percent categorized cider as an alcoholic drink, compared to twenty-eight percent who categorized it as a soft drink. After the second ad which displayed an alcoholic label, the percentage of the

participants categorizing cider as an alcoholic drink rose to ninety-six percent while the percentage of participants who categorized cider as a soft drink fell to four percent.

Table 4. Percentages for Soft and Alcoholic Categorizations Before and After the Labels

| | Soft ad_no label Cat_ 1 | Soft ad_soft label Cat_ 2 |
|---|---|---|
| Alcoholic_cat | 63% | 42% |
| Soft_cat | 37% | 58% |

| | Alco ad_no label Cat_1 | Alco ad_alco label Cat_2 |
|---|---|---|
| Alcoholic_cat | 72% | 96% |
| Soft_cat | 28% | 4% |

Pearson's chi square test was run to see whether there was a statistically significant relationship between subjects' categorization decisions and the labels provided in the advertisements.

For subjects who are exposed to soft drink advertisements, the results are shown in Table 5 and Table 6:

Table 5. Crosstabulation Results for Soft Drink Group

| | | | Categorization | | |
|---|---|---|---|---|---|
| | | | soft | alcoholic | Total |
| Label_Shown | No | Count | 63 | 107 | 170 |
| | | Expected Count | 80,8 | 89,2 | 170,0 |
| | | % within Label_Shown | ,4 | ,6 | 1,0 |
| | | % within Categorization | ,4 | ,6 | ,5 |
| | | % of Total | ,2 | ,3 | ,5 |
| | | Std. Residual | -2,0 | 1,9 | |
| | Yes | Count | 100 | 73 | 173 |
| | | Expected Count | 82,2 | 90,8 | 173,0 |
| | | % within Label_Shown | ,6 | ,4 | 1,0 |
| | | % within Categorization | ,6 | ,4 | ,5 |
| | | % of Total | ,3 | ,2 | ,5 |
| | | Std. Residual | 2,0 | -1,9 | |
| Total | | Count | 163 | 180 | 343 |
| | | Expected Count | 163,0 | 180,0 | 343,0 |
| | | % within Label_Shown | ,5 | ,5 | 1,0 |
| | | % within Categorization | 1,0 | 1,0 | 1,0 |
| | | % of Total | ,5 | ,5 | 1,0 |

Table 6:Chi-Square Test Statistics Results for Soft Drink Group

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 14,796 | 1 | ,000 | ,000 | ,000 |
| Continuity Correction | 13,976 | 1 | ,000 | | |
| Likelihood Ratio | 14,907 | 1 | ,000 | ,000 | ,000 |
| Fisher's Exact Test | | | | ,000 | ,000 |
| N of Valid Cases | 343 | | | | |

For subjects who were exposed to advertisements depicting cider as an alcoholic drink, the results are shown in Table 7 and Table 8.

Table 7. Crosstabulation Results for Alcoholic Drink Group

| | | | Categorization | | |
|---|---|---|---|---|---|
| | | | soft | alcoholic | Total |
| Label_Shown | No | Count | 46 | 119 | 165 |
| | | Expected Count | 25,7 | 139,3 | 165,0 |
| | | % within Label_Shown | ,3 | ,7 | 1,0 |
| | | % within Categorization | ,9 | ,4 | ,5 |
| | | % of Total | ,1 | ,4 | ,5 |
| | | Std. Residual | 4,0 | -1,7 | |
| | Yes | Count | 6 | 163 | 169 |
| | | Expected Count | 26,3 | 142,7 | 169,0 |
| | | % within Label_Shown | ,0 | 1,0 | 1,0 |
| | | % within Categorization | ,1 | ,6 | ,5 |
| | | % of Total | ,0 | ,5 | ,5 |
| | | Std. Residual | -4,0 | 1,7 | |
| Total | | Count | 52 | 282 | 334 |
| | | Expected Count | 52,0 | 282,0 | 334,0 |
| | | % within Label_Shown | ,2 | ,8 | 1,0 |
| | | % within Categorization | 1,0 | 1,0 | 1,0 |
| | | % of Total | ,2 | ,8 | 1,0 |

Table 8. Chi-Square Test Statistics Results for Alcoholic Drink Group

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 37,592 | 1 | ,000 | ,000 | ,000 |
| Continuity Correction | 35,764 | 1 | ,000 | | |
| Likelihood Ratio | 41,740 | 1 | ,000 | ,000 | ,000 |
| Fisher's Exact Test | | | | ,000 | ,000 |
| N of Valid Cases | 334 | | | | |

As it can be observed from the Pearson chi square scores above, the findings revealed significant results thus supported Hypothesis 1. [$X^2(1) = 14.79$ p=.00 for soft drink group and $X^2(1) = 37.59$ p=.00 for alcohol group]. As previously discussed,

providing a label to a new product enables the consumers to use the category indicated by the label to form the target representation of the new product. Furthermore, for the group exposed to soft ad, although the information that cider contains alcohol was given, and that a more likely categorization option was assumed to be present, a significant portion of the participants categorized cider as a soft drink after seeing the ad with the soft drink label. Thus it can be concluded that consumers will categorize the new product in the direction of the explicit label provided in the advertisement and away from other more likely categorizations when they encounter with a new product.

As mentioned earlier in this dissertation, participants were exposed to a third ad showing either a congruent or incongruent attribute. They were then asked about their categorization decisions. It was observed that some of the participants changed their categorization decisions after seeing the third ad. Another chi-square analysis was run to further analyze this change. Whether the participant changed his/her categorization decision after the third ad and attribute congruency were used as categorical variables for the chi square test in order to see if a relationship exists between the two. The findings revealed significant results.

Table 9. Crosstabulation Results for Categorization Change

| | | | Congruency | | |
|---|---|---|---|---|---|
| | | | congruent att | incongruent att | Total |
| Changed_cat | changed | Count | 18 | 47 | 65 |
| | | Expected Count | 34,6 | 30,4 | 65,0 |
| | | % within Changed_cat | ,3 | ,7 | 1,0 |
| | | % within Congruency | ,1 | ,3 | ,2 |
| | | % of Total | ,1 | ,1 | ,2 |
| | | Std. Residual | -2,8 | 3,0 | |
| | did not change | Count | 165 | 114 | 279 |
| | | Expected Count | 148,4 | 130,6 | 279,0 |
| | | % within Changed_cat | ,6 | ,4 | 1,0 |
| | | % within Congruency | ,9 | ,7 | ,8 |
| | | % of Total | ,5 | ,3 | ,8 |
| | | Std. Residual | 1,4 | -1,5 | |
| Total | | Count | 183 | 161 | 344 |
| | | Expected Count | 183,0 | 161,0 | 344,0 |
| | | % within Changed_cat | ,5 | ,5 | 1,0 |
| | | % within Congruency | 1,0 | 1,0 | 1,0 |
| | | % of Total | ,5 | ,5 | 1,0 |

Table 10. Chi-Square Test Statistics Results for Categorization Change

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) | Point Probability |
|---|---|---|---|---|---|---|
| Pearson Chi-Square | 20,940 | 1 | ,000 | ,000 | ,000 | |
| Continuity Correctionb | 19,696 | 1 | ,000 | | | |
| Likelihood Ratio | 21,373 | 1 | ,000 | ,000 | ,000 | |
| Fisher's Exact Test | | | | ,000 | ,000 | |
| Linear-by-Linear Association | 20,879 | 1 | ,000 | ,000 | ,000 | ,000 |
| N of Valid Cases | 344 | | | | | |

The results indicate that attribute congruency had a significant effect on whether the participant would change his/her categorization decision. Of those subjects who changed their categorization decisions twenty-eight percent were exposed to congruent information compared to a majority of seventy-two percent who were exposed to incongruent information. Further analysis was conducted for soft label and alcoholic label groups separately.

Table 11. Crosstabulation Results for Soft Label Group

| | | | Changed_Cat | | |
|---|---|---|---|---|---|
| | | | changed | did not change | Total |
| Congruency | congruent_att | Count | 2 | 50 | 52 |
| | | Std. Residual | -2,2 | 1,0 | |
| | incongruent_att | Count | 27 | 98 | 125 |
| | | Std. Residual | 1,4 | -,6 | |
| Total | | Count | 29 | 148 | 177 |

Table 12. Chi-Square Test Statistics Results for Soft Label Group

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 8,449 | 1 | ,004 | | |
| Continuity Correction | 7,203 | 1 | ,007 | | |
| Likelihood Ratio | 10,475 | 1 | ,001 | | |
| Fisher's Exact Test | | | | ,003 | ,002 |
| Linear-by-Linear Association | 8,401 | 1 | ,004 | | |
| N of Valid Cases | 177 | | | | |

Table 13. Crosstabulation Results for Alcohol Label Group

| | | | Changed_Cat | | |
|---|---|---|---|---|---|
| | | | changed | did not change | Total |
| Congruency | congruent_att | Count | 3 | 88 | 91 |
| | | Std. Residual | -3,6 | 1,8 | |
| | incongruent_att | Count | 32 | 48 | 80 |
| | | Std. Residual | 3,9 | -2,0 | |
| Total | | Count | 35 | 136 | 171 |

Table 14. Chi-Square Test Statistics Results for Alcohol Label Group

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | 35,231 | 1 | ,000 | | |
| Continuity Correctionb | 33,013 | 1 | ,000 | | |
| Likelihood Ratio | 39,277 | 1 | ,000 | ,000 | ,000 |
| Fisher's Exact Test | | | | | |
| N of Valid Cases | 171 | | | | |

The results also indicate that the incongruency effect is observed in both soft drink and alcoholic drink label groups.

## Categorization confidence

Hypothesis 2 predicts that category confidence will increase as a label is introduced. A one-way repeated measures ANOVA was performed to measure categorization confidence and the results supported this hypothesis. Category confidence scores increased significantly after the second ad. ($M_1$= 5.44 vs. $M_2$= 5.91; $F_{(1, 349)}$ =37.90; p= .000)

Table 15. Descriptive Statistics for Category Confidence

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Cat_Conf_1 | 5,44 | 1,278 | 350 |
| Cat_Conf_2 | 5,91 | 1,259 | 350 |

Table 16. Test Results for Repeated Measures ANOVA

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| categorization conf | Sphericity Assumed | 37,956 | 1 | 37,956 | 37,897 | ,000 |
| | Greenhouse-Geisser | 37,956 | 1,000 | 37,956 | 37,897 | ,000 |
| | Huynh-Feldt | 37,956 | 1,000 | 37,956 | 37,897 | ,000 |
| | Lower-bound | 37,956 | 1,000 | 37,956 | 37,897 | ,000 |
| Error (categorization conf) | Sphericity Assumed | 349,544 | 349 | 1,002 | | |
| | Greenhouse-Geisser | 349,544 | 349,000 | 1,002 | | |
| | Huynh-Feldt | 349,544 | 349,000 | 1,002 | | |
| | Lower-bound | 349,544 | 349,000 | 1,002 | | |

Also Hypothesis 7 suggests that when consumers are presented with an incongruent attribute after they form their categorization judgments, their categorization confidence will decrease. The third advertisement displayed an incongruent attribute of either a soft drink or an alcoholic drink for the incongruent manipulation group. However, as mentioned earlier in the study the incongruency measure used in the analyses was calculated differently. An attribute is considered as incongruent if 1) It is incongruent with the category label or the information provided in the ads and 2) Participants' categorization decisions after the second ad (Categorization 2) do not match with the category label provided in the second ad.

Participants' confidence scores were measured after the third advertisement for the last time. Another one way repeated measures ANOVA was performed to test this hypothesis. Findings revealed that confidence in categorization scores decreased

significantly after the incongruent attribute were introduced ($M_2$= 5.87 versus $M_3$= 5.53; $F_{1, 159}$= 9.951; p= .002).

Table 17. Descriptive Statistics for Category Confidence

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Cat_Conf_2 | 5,87 | 1,279 | 160 |
| Cat_Conf_3 | 5,53 | 1,346 | 160 |

Table 18. Test Results for Repeated Measures ANOVA

| | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| cat_conf_change | Sphericity Assumed | 7,848 | 1 | 7,848 | 8,910 | ,004 |
| | Greenhouse-Geisser | 7,848 | 1 | 7,848 | 8,910 | ,004 |
| | Huynh-Feldt | 7,848 | 1 | 7,848 | 8,910 | ,004 |
| | Lower-bound | 7,848 | 1 | 7,848 | 8,910 | ,004 |
| Error (cat_conf_change) | Sphericity Assumed | 80,152 | 91 | ,881 | | |
| | Greenhouse-Geisser | 80,152 | 91 | ,881 | | |
| | Huynh-Feldt | 80,152 | 91 | ,881 | | |
| | Lower-bound | 80,152 | 91 | ,881 | | |

## Performance Expectations

Hypothesis 3 predicts that consumers' performance expectations of the new product will be in line with the performance of the other products that they think belong to the same category.

In order to test this hypothesis the three item scales constructed to measure soft and alcoholic drink performance expectations were used. After seeing the second ads with explicit labels respondents were asked to indicate their performance scores.

Two paired samples t-test were conducted. One for participants who categorized cider as a soft drink, and another one for participants who categorized cider as an alcoholic drink after the second ad.

Subjects who categorized cider as an alcoholic drink indicated significantly higher scores for alcoholic drink performance expectations (M= 3.78) than soft drink performance expectations (M=2.65). (t=-8.394, p<.00).

Table 19. Performance Expectations of Participants Who Categorized Cider as an Alcoholic Drink

| | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| soft_perf_2 | 2,658 | 236 | 1,4986 | ,0976 |
| alco_perf_2 | 3,784 | 236 | 1,6237 | ,1057 |

Table 20. Paired Samples T-Test Results

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - alco_perf_2 | ,4222 | 2,1073 | ,2057 | 2,053 | 104 | ,043 |

Although subjects who categorized cider as a soft drink reported higher scores for soft drink performance expectations (M= 3.18) than alcoholic drink performance expectations (M=2.99), this difference is not significant (p>.05). Thus we can conclude that hypothesis 3 was partially supported.

Table 21. Performance Expectations of Participants Who Categorized Cider as a Soft Drink

| | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| soft_perf_2 | 3,184 | 105 | 1,4411 | ,1406 |
| alco_perf_2 | 2,990 | 105 | 1,5138 | ,1477 |

Table 22. Paired Samples T-Test Result

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - alco_perf_2 | ,1937 | 1,9649 | ,1917 | 1,010 | 104 | ,315 |

## Attitude toward the brand and Purchase intention

Hypothesis 4 predicted that lower levels of category confidence would induce lower levels of attitude toward the brand and purchase intention scores. Results from the data supported these hypotheses. First, two correlation analyses were run for category confidence, attitude toward the brand and purchase intention scores. Attitude toward the brand and purchase intention scores were measured twice, first after the second ad and then after the third ad.

Table 22. Correlations Table for Category Confidence 2, Attitude toward the Brand 2, and Purchase Intention 2

| | | Cat_Conf_2 | Att_twd_br_2 | Purch Intention 2 |
|---|---|---|---|---|
| Cat_Conf_2 | Pearson Correlation | 1 | ,145** | ,087 |
| | Sig. (1-tailed) | | ,003 | ,053 |
| | N | 350 | 348 | 350 |
| Att_twd_br_2 | Pearson Correlation | ,145** | 1 | ,715** |
| | Sig. (1-tailed) | ,003 | | ,000 |
| | N | 348 | 348 | 348 |
| PurchIntention_2 | Pearson Correlation | ,087 | ,715** | 1 |
| | Sig. (1-tailed) | ,053 | ,000 | |
| | N | 350 | 348 | 350 |

The symbol (**) indicates that correlation is significant at the 0.01 level.

Table 23. Correlations Table for Category Confidence 3, Attitude toward the Brand 3, and Purchase Intention 3

| | | Cat_Conf_3 | Att_twd_br_2 | PurchIntention_3 |
|---|---|---|---|---|
| Cat_Conf_3 | Pearson Correlation | 1 | ,184** | ,125** |
| | Sig. (1-tailed) | | ,000 | ,010 |
| | N | 348 | 347 | 348 |
| Att_twd_br_3 | Pearson Correlation | ,184** | 1 | ,756** |
| | Sig. (1-tailed) | ,000 | | ,000 |
| | N | 347 | 349 | 349 |
| PurchIntention_3 | Pearson Correlation | ,125** | ,756** | 1 |
| | Sig. (1-tailed) | ,010 | ,000 | |
| | N | 348 | 349 | 350 |

The symbol (**) indicates that correlation is significant at the 0.01 level.

Then the median scores were calculated for category confidence measures. The median score was used as a cutoff point to bisect the scores as category confidence high and category confidence low. Category confidence scores which

were higher or equal to 6 were regarded as high and scores lower than 6 were regarded as low.

Independent samples t-tests were run to compare the attitude and purchase intention scores of high category confidence subjects versus low category confidence subjects after seeing the second and third ad. Findings from the two tests revealed significant results:

Table 24. Descriptive Statistics of Low versus High Category Confidence for Attitude toward the Brand 2 and Purchase Intention 2 Scores

| Cat_Conf_2 | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Att_twd_br_2 | cat_conf_2_low | 107 | 3,47 | 1,22 | ,118 |
| | cat_conf_2_high | 241 | 3,88 | 1,42 | ,091 |
| Purchase Intention_2 | cat_conf_2_low | 109 | 3,83 | 1,95 | 0,19 |
| | cat_conf_2_high | 241 | 4,24 | 2,07 | 0,13 |

Table 25. Independent Samples Test Results

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| Att_twd_br_2 | Equal variances assumed | 4,265 | ,040 | -2,602 | 346 | ,010 |
| | Equal variances not assumed | | | -2,754 | 233,606 | ,006 |
| Purch Intention_2 | Equal variances assumed | 1,609 | ,205 | -1,753 | 348 | ,081 |
| | Equal variances not assumed | | | -1,790 | 219,641 | ,075 |

As mentioned earlier in this dissertation in the second part of the experiment participants were exposed to the advertisements that featured the categorization label and asked to report their categorization confidence and attitude and purchase

intention scores. The results gathered from this second ad indicated that the level of categorization confidence did have a significant effect on attitude towards cider on purchase intention. Subjects with higher confidence levels denoted higher scores for attitude towards cider than subjects with low confidence. ($M_{high}$=3.88 versus $M_{low}$=3.47, t=-2.602, p< .05).

The purchase intention scores of high confidence subjects are higher than the purchase intention scores of low confidence subjects, ($M_{high}$ = 4.24 versus $M_{low}$= 3.83) this relationship is marginally significant (p=0.075).

In the last part of the experiment a third ad was shown. Depending on the manipulation the ad featured either a congruent or incongruent attribute of soft or alcoholic drinks. Participants were asked again to indicate categorization confidence, attitude toward cider and purchase intention scores. This time all the findings revealed significant results. Subjects with higher confidence scores indicated higher levels of attitude toward cider and purchase intention scores than subjects with low confidence scores (For attitude toward the brand; $M_{low}$=3.547 versus $M_{high}$=3.928, t=-2.203, p<.05, for purchase intention; $M_{low}$=3.58 versus $M_{high}$=4.03, t=-2.077, p<.05).

Table 26. Descriptive Statistics of Low versus High Category Confidence for Attitude toward the Brand 3 and Purchase Intention 3 Scores

| Cat_Conf_3 | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Att_twd_br_3 | cat_conf_3_low | 118 | 3,58 | 1,85 | ,170 |
| | cat_conf_3_high | 230 | 4,03 | 1,97 | ,130 |
| Purchase Intention_3 | cat_conf_3_low | 117 | 3,55 | 1,51 | 0,14 |
| | cat_conf_3_high | 230 | 3,93 | 1,53 | 0,10 |

Table 27. Independent Samples Test Results

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| Att_twd_br_3 | Equal variances assumed | ,200 | ,656 | -2,077 | 346 | ,010 |
| | Equal variances not assumed | | | -2,120 | 249,477 | ,035 |
| Purch Intention_3 | Equal variances assumed | ,142 | ,707 | -2,203 | 345 | ,028 |
| | Equal variances not assumed | | | -2,214 | 236,797 | ,028 |

The fifth hypothesis suggests that consumers presented with an incongruent attribute will have lower brand attitude and purchase intention scores than consumers presented with a congruent attribute.

To test the fifth hypothesis independent samples t-test was conducted. Significant results were observed both for attitude toward the brand ($M_{congruent}$= 3.99 versus $M_{incongruent}$= 3.65; t= 2.04; p< .05) and for purchase intention ($M_{congruent}$= 4.13 versus $M_{incongruent}$= 3.67; t= 2.181; p< .05).

Table 28. Descriptive Statistics for Incongruent and Congruent Attribute Results

| Congruency | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Att_twd_br_3 | congruent | 141 | 3,99 | 1,50 | ,128 |
| | incongruent | 208 | 3,65 | 1,54 | ,107 |
| Purchase Intention_3 | congruent | 117 | 4,13 | 1,93 | 0,163 |
| | incongruent | 230 | 3,67 | 1,94 | 0,134 |

Table 29. Independent Samples Test Results

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | |
|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) |
| Att_twd_br_3 | Equal variances assumed | ,593 | ,442 | 2,043 | 347 | ,042 |
| | Equal variances not assumed | | | 2,052 | 305,458 | ,041 |
| Purch Intention_3 | Equal variances assumed | ,286 | ,593 | 2,181 | 348 | ,030 |
| | Equal variances not assumed | | | 2,182 | 301,285 | ,030 |

The sixth hypothesis proposes that after consumers' form their categorization judgments, if they are presented with an attribute that is incongruent with their categorization decisions, their brand attitude and purchase intention scores will decrease. In order to test the hypothesis, a repeated-measures ANOVA was performed on attitude toward the brand and purchase intention scores after the second and third advertisements. The results were significant for purchase intention ($M_2$= 4.12 versus $M_3$= 3.67; $F_{1, 208}$= 20.912; p= .000) but although the scores for attitude toward the brand decreased after the incongruent attribute is introduced ($M_2$= 3.73 versus $M_3$= 3.67), the result is not significant; p> .05.

Table 30. Attitude toward Brand Descriptive Statistics of Participants Exposed to Incongruent Attribute

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Att_twd_br_2 | 3,73 | 1,358 | 207 |
| Att_twd_br_3 | 3,67 | 1,532 | 207 |

Table 31. Repeated Measures ANOVA Results for Attitude toward Brand

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| att_twd_br | Sphericity Assumed | ,473 | 1 | ,473 | 1,180 | ,279 |
| | Greenhouse-Geisser | ,473 | 1 | ,473 | 1,180 | ,279 |
| | Huynh-Feldt | ,473 | 1 | ,473 | 1,180 | ,279 |
| | Lower-bound | ,473 | 1 | ,473 | 1,180 | ,279 |
| Error (att_twd_br) | Sphericity Assumed | 82,665 | 206 | ,401 | | |
| | Greenhouse-Geisser | 82,665 | 206 | ,401 | | |
| | Huynh-Feldt | 82,665 | 206 | ,401 | | |
| | Lower-bound | 82,665 | 206 | ,401 | | |

Table 32. Purchase Intention Descriptive Statistics of Participants Exposed to Incongruent Attribute

| | Mean | Std. Deviation | N |
|---|---|---|---|
| PurchIntention_2 | 4,12 | 2,071 | 209 |
| PurchIntention_3 | 3,67 | 1,939 | 209 |

Table 33. Repeated Measures ANOVA Results for Purchase Intention

| Source | | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| purch_int | Sphericity Assumed | 20,691 | 1 | 20,691 | 20,912 | ,000 |
| | Greenhouse-Geisser | 20,691 | 1 | 20,691 | 20,912 | ,000 |
| | Huynh-Feldt | 20,691 | 1 | 20,691 | 20,912 | ,000 |
| | Lower-bound | 20,691 | 1 | 20,691 | 20,912 | ,000 |
| Error (purch_int) | Sphericity Assumed | 205,809 | 208 | ,989 | | |
| | Greenhouse-Geisser | 205,809 | 208 | ,989 | | |
| | Huynh-Feldt | 205,809 | 208 | ,989 | | |
| | Lower-bound | 205,809 | 208 | ,989 | | |

One of the main purposes of this study was to understand the effect of congruent versus incongruent information on attitude formation and purchase intention of new products that have been recently categorized in consumers' mind. However there may be other factors that affect attitude formation and purchase intention for novel products. In the analysis in addition to message congruency, gender was used as an independent variable and consumer innovativeness and religious belief were used as covariates.

Religious belief as a covariate

In the survey respondents were also asked whether they consumed alcohol in their daily lives or not. If the respondent answered negatively to that question, he/she was asked to indicate the reason as either a) I don't like its taste, or b) because of my religious beliefs, or c) other.

Alcohol consumption measure was coded as (0) if the respondent indicated that he/she did not consume alcohol and (1) if the answer is positive. If he/she responded negatively to alcohol consumption question and acknowledged the reason as because of his/her religious beliefs, the variable is coded as 1. This dummy variable was then used as the third covariate of the model.

In the first phase of the study 200 subjects had been recruited. A multivariate variance analysis (MANCOVA) was performed on the dependent variables attitude toward cider and purchase intention as these two variables are conceptually correlated. A Pearson correlation analysis verified that these two variables are correlated. MANCOVA was also chosen to prevent Type I errors (Field, 2009).

Table 34. Correlations Table for Attitude toward Brand 2 and Purchase Intention 2

| | | Att_twd_br_2 | PurchIntention 2 |
|---|---|---|---|
| Att_twd_br_2 | Pearson Correlation | 1 | ,715** |
| | Sig. (2-tailed) | | ,000 |
| | N | 348 | 348 |
| PurchIntention_2 | Pearson Correlation | ,715** | 1 |
| | Sig. (2-tailed) | ,000 | |
| | N | 348 | 351 |

The symbol (**)indicates that correlation is significant at the 0.01 level.

Table 35. Correlations Table for Attitude toward Brand 3 and Purchase Intention 3

| | | Att_twd_br_3 | PurchIntention 3 |
|---|---|---|---|
| Att_twd_br_3 | Pearson Correlation | 1 | ,756** |
| | Sig. (2-tailed) | | ,000 |
| | N | 349 | 349 |
| PurchIntention_3 | Pearson Correlation | ,756** | 1 |
| | Sig. (2-tailed) | ,000 | |
| | N | 349 | 351 |

The symbol (**)indicates that correlation is significant at the 0.01 level.

The findings obtained from MANCOVA yield significant results. Both gender and message congruency had significant main effects on attitude toward cider ($F_{gender\ 4, 344} = 10.705$; $p=0.01$; $F_{congruency\ 4, 344} = 4.469$; $p < .05$), and purchase intention ($F_{gender\ 4, 344} = 3.625$; $p < .005$; $F_{congruency\ 4, 344} = 4.075$; $p < .005$). The results indicate that if we ignore message congruency, the gender of the participant alone did have an effect on the attitude towards brand and purchase intention. Also if we ignore the gender of the participant, message congruency alone had an effect on attitude toward cider and purchase intention. However no interaction effects were observed between gender and message congruency for any of the dependent variables. This result tells us that the effect of message congruency on attitude and

purchase intention was not different for male and female participants. Both male and female subjects showed similar results on their attitude and purchase intention scores when exposed to congruent and incongruent messages.

Analysis also revealed significant covariate effects. Consumer innovativeness had a significant effect as a covariate both on attitude ($F_{4,344}$= 12.033; p= .001) and purchase intention ($F_{4, 344}$=12.814; p=.000) and so does religion effect ($F_{4,344}$= 19.701; p= .000) and ($F_{4,344}$= 44.367; p= .000) respectively.

Table 36. MANCOVA Test Results

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Corrected Model | Att_twd_br_3 | 101,646 | 5 | 20,329 | 9,766 | ,000 |
| | PurchIntention_3 | 219,285 | 5 | 43,857 | 13,687 | ,000 |
| Intercept | Att_twd_br_3 | 258,094 | 1 | 258,094 | 123,993 | ,000 |
| | PurchIntention_3 | 238,659 | 1 | 238,659 | 74,479 | ,000 |
| inno_total | Att_twd_br_3 | 27,934 | 1 | 27,934 | 13,420 | ,000 |
| | PurchIntention_3 | 48,922 | 1 | 48,922 | 15,267 | ,000 |
| religion_effect | Att_twd_br_3 | 41,009 | 1 | 41,009 | 19,701 | ,000 |
| | PurchIntention_3 | 142,168 | 1 | 142,168 | 44,367 | ,000 |
| gender | Att_twd_br_3 | 22,283 | 1 | 22,283 | 10,705 | ,001 |
| | PurchIntention_3 | 11,615 | 1 | 11,615 | 3,625 | ,058 |
| congruency | Att_twd_br_3 | 9,291 | 1 | 9,291 | 4,464 | ,035 |
| | PurchIntention_3 | 13,058 | 1 | 13,058 | 4,075 | ,044 |
| gender * congruency | Att_twd_br_3 | ,011 | 1 | ,011 | ,005 | ,941 |
| | PurchIntention_3 | ,118 | 1 | ,118 | ,037 | ,848 |
| Error | Att_twd_br_3 | 711,884 | 342 | 2,082 | | |
| | PurchIntention_3 | 1095,896 | 342 | 3,204 | | |
| Total | Att_twd_br_3 | 5826,750 | 348 | | | |
| | PurchIntention_3 | 6529,000 | 348 | | | |
| Corrected Total | Att_twd_br_3 | 813,530 | 347 | | | |
| | PurchIntention_3 | 1315,181 | 347 | | | |

Religious beliefs had a significant effect on attitude towards the brand and purchase intention. This result somehow can be predicted. It is highly possible that individuals who don't consume alcoholic beverages because of their religious beliefs will have less favorable evaluations towards alcoholic drinks and will be less inclined to buy them. In order to better understand the factors affecting attitude formation and purchase intention of cider a new variable which will provide more elaborate insights was needed. Familiarity to alcohol was added as a covariate to the model. A new questionnaire which was the same as the previous one with an addition of familiarity to alcohol measure was distributed to 156 students in the second phase of the study. Again the results were analyzed using MANCOVA. Congruency again had a significant main effect for both attitude towards the brand ($F_{6,}$ 150= 18.441; p< .005) and purchase intention ($F_6$, 150= 17.539; p< .005). Gender was significant for attitude toward the brand ($F_6$, 150= 9.923; p< .005) but the main effect of gender on purchase intention dissipated when familiarity to alcohol was introduced to the model (p> .005). Familiarity to alcohol yielded insignificant results both for purchase intention and attitude toward the brand. (Both p's > .05).

Religion effect was significant for purchase intention ($F_6$, 150= 44.049; p< .005) but nor for attitude toward the brand (p> .005). Consumer innovativeness was significant both for attitude toward the brand ($F_6$, 150= 15.844; p< .005) and purchase intention ($F_6$, 150= 40.260; p< .005).

Table 37. Descriptive Statistics of MANCOVA Model including Familiarity Covariate

| | congruency | gender | Mean | Std. Deviation | N |
|---|---|---|---|---|---|
| Att_twd_br_3 | congruent | female | 3,91 | 1,365 | 42 |
| | | male | 4,40 | 1,564 | 24 |
| | | Total | 4,09 | 1,448 | 66 |
| | incongruent | female | 3,27 | 1,266 | 48 |
| | | male | 3,71 | 1,435 | 42 |
| | | Total | 3,48 | 1,358 | 90 |
| | Total | female | 3,57 | 1,344 | 90 |
| | | male | 3,96 | 1,508 | 66 |
| | | Total | 3,73 | 1,425 | 156 |
| PurchIntention_3 | congruent | female | 4,55 | 2,015 | 42 |
| | | male | 4,96 | 2,116 | 24 |
| | | Total | 4,70 | 2,045 | 66 |
| | incongruent | female | 3,94 | 1,884 | 48 |
| | | male | 4,38 | 2,186 | 42 |
| | | Total | 4,14 | 2,031 | 90 |
| | Total | female | 4,22 | 1,959 | 90 |
| | | male | 4,59 | 2,162 | 66 |
| | | Total | 4,38 | 2,049 | 156 |

Table 38. MANCOVA Model Test Results including Familiarity Covariate

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Corrected Model | Att_twd_br_3 | 39,394 | 6 | 6,566 | 3,555 | 0,003 |
| | PurchIntention_3 | 110,713 | 6 | 18,452 | 5,092 | 0 |
| Intercept | Att_twd_br_3 | 82,309 | 1 | 82,309 | 44,572 | 0 |
| | PurchIntention_3 | 69,451 | 1 | 69,451 | 19,164 | 0 |
| inno_total | Att_twd_br_3 | 15,844 | 1 | 15,844 | 8,58 | 0,004 |
| | PurchIntention_3 | 40,26 | 1 | 40,26 | 11,109 | 0,001 |
| total_fam_alco | Att_twd_br_3 | 1,446 | 1 | 1,446 | 0,783 | 0,378 |
| | PurchIntention_3 | 0,047 | 1 | 0,047 | 0,013 | 0,909 |
| religion_effect | Att_twd_br_3 | 3,578 | 1 | 3,578 | 1,937 | 0,166 |
| | PurchIntention_3 | 44,049 | 1 | 44,049 | 12,155 | 0,001 |
| congruency | Att_twd_br_3 | 18,441 | 1 | 18,441 | 9,986 | 0,002 |
| | PurchIntention_3 | 17,539 | 1 | 17,539 | 4,84 | 0,029 |

Table 38. continued

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| gender | Att_twd_br_3 | 9,923 | 1 | 9,923 | 5,373 | 0,022 |
| | PurchIntention_3 | 4,965 | 1 | 4,965 | 1,37 | 0,244 |
| congruency * gender | Att_twd_br_3 | 0,165 | 1 | 0,165 | 0,089 | 0,766 |
| | PurchIntention_3 | 0,105 | 1 | 0,105 | 0,029 | 0,865 |
| Error | Att_twd_br_3 | 275,15 | 149 | 1,847 | | |
| | PurchIntention_3 | 539,973 | 149 | 3,624 | | |
| Total | Att_twd_br_3 | 2489,583 | 156 | | | |
| | PurchIntention_3 | 3641 | 156 | | | |
| Corrected Total | Att_twd_br_3 | 314,543 | 155 | | | |
| | PurchIntention_3 | 650,686 | 155 | | | |

Hypothesis 8 proposed that when consumers evaluate a new product if they were presented with an incongruent attribute that was incoherent with their categorization decisions, they will lower their performance expectations. It is important to remind that incongruency implied here is either the incongruency between the label provided in the first and second ads and the attribute shown in the third ad or it is the condition where subject's categorization decision does not match with the label and ad info.

This hypothesis is partially supported. Two paired samples t-test were run to test this hypothesis. One for soft categorization group which involved participants who categorized cider as a soft drink after the second ad, and another one for alcoholic drink group which was comprised of participants who categorized cider as alcoholic drink after seeing the second ad. Each group's soft drink and alcoholic drink performance expectations after seeing the second ad and third ad was measured. The results for the soft category group revealed that subjects' performance expectations had not changed significantly for soft drink performance after seeing the

third ad. ($M_{soft\_2}$=3.23 versus $M_{soft\_3}$=3.36; p >.05) and although the expectations decreased for alcoholic drink performances ($M_{alco\_2}$=2.98 versus $M_{alco\_3}$=2.83) , this change was not significant (p>.05).

Table 39. Performance Expectation Statistics for Participants in Soft/ Incongruency Condition

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | soft_perf_2 | 3,23 | 46 | 1,40 | ,206 |
| | soft_perf_3 | 3,36 | 46 | 1,41 | ,208 |
| Pair 2 | alco_perf_2 | 2,98 | 46 | 1,52 | 0,22 |
| | alco_perf_3 | 2,83 | 46 | 1,47 | 0,21 |

Table 40. Paired Samples Test Results for Soft / Incongruency Condition

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - soft_perf_3 | -0,130 | 1,67 | 0,247 | -0,529 | 45 | ,599 |
| alco_perf_2 -alco_perf_3 | 0,146 | 1,91 | 0,275 | 0,530 | 47 | ,599 |

The results for alcoholic categorization group revealed significant results. After viewing the third ad, the performance expectations of cider as an alcoholic drink decreased significantly ($M_{alco\_2}$=3.57 versus $M_{alco\_3}$=3.10; t=4.402; p =0.00) while the performance expectations of soft drink increased ($M_{soft\_2}$=2.46 versus $M_{soft\_3}$=2.96; t=-3.968; p =0.00).

Table 41. Performance Expectations Statistics for Participants in Alcohol/Incongruency Condition

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | soft_perf_2 | 2,46 | 149 | 1,32 | ,108 |
| | soft_perf_3 | 2,96 | 149 | 1,53 | ,126 |
| Pair 2 | alco_perf_2 | 3,57 | 150 | 1,67 | 0,136 |
| | alco_perf_3 | 3,10 | 150 | 1,53 | 0,125 |

Table 42. Paired Samples Test Results for Alcohol/Incongruency Condition

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - soft_perf_3 | -0,497 | 1,53 | 0,125 | -3,968 | 148 | ,000 |
| alco perf_2 - alco_perf_3 | 0,471 | 1,31 | 0,107 | 4,402 | 149 | ,000 |

Congruency Condition

The same tests were conducted for the participants in congruency condition. Participants who were in soft drink activated schema group, who categorized cider as a soft drink and exposed to soft drink congruent information increased their soft drink performance expectation scores significantly ($M_{soft\_2}$= 3.19 versus $M_{soft\_3}$= 3.51; t=-3.237; p< 0.05) while their alcoholic drink performance expectations remained the same ($M_{alco\_2}$=3.04 versus $M_{alco\_3}$=3.09; p> 0.05).

Table 43. Performance Expectation Statistics for Participants in Soft/ Congruency Condition

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | soft_perf_2 | 3,19 | 69 | 1,55 | ,186 |
| | soft_perf_3 | 3,52 | 69 | 1,54 | ,186 |
| Pair 2 | alco_perf_2 | 3,04 | 69 | 1,50 | 0,179 |
| | alco_perf_3 | 3,10 | 69 | 1,44 | 0,174 |

Table 44. Paired Samples Test Results

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - soft_perf_3 | -0,324 | 1,03 | 0,124 | -2,605 | 68 | ,011 |
| alco_perf_2 alco_perf_3 | -0,053 | 0,84 | 0,101 | -0,528 | 68 | ,599 |

As for the participants who were in alcoholic drink activated schema group, who categorized cider as an alcoholic drink and exposed to alcoholic drink congruent information, their performance expectations from cider did not change significantly after viewing the congruent attribute. ($M_{soft\_2}$= 2.34 versus $M_{soft\_3}$= 2.22; p> 0.05 and $M_{alco\_2}$=3.86 versus $M_{alco\_3}$=3.98; p> 0.05).

Table 45. Performance Expectation Statistics for Participants in Alcohol/ Congruency Condition

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | soft_perf_2 | 2,35 | 115 | 1,44 | ,134 |
| | soft_perf_3 | 2,23 | 115 | 1,29 | ,120 |
| Pair 2 | alco_perf_2 | 3,86 | 114 | 1,55 | 0,145 |
| | alco_perf_3 | 3,99 | 114 | 1,58 | 0,148 |

Table 46. Paired Samples Test Statistics for Alcohol/Congruency Condition

| | Paired Differences | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | | | |
| soft_perf_2 - soft_perf_3 | 0,119 | 1,28 | 0,119 | 0,999 | 114 | ,320 |
| alco_perf_2 - alco_perf_3 | -0,228 | 1,30 | 0,122 | -1,010 | 113 | ,315 |

# CHAPTER 6

# DISCUSSION, IMPLICATIONS AND LIMITATIONS

## Discussion of Results

### Categorization

Data provided support for the hypothesis that when consumers are faced with a new product, they will categorize the new product in the direction stated by the label even if a more likely categorization exists. Previous studies demonstrated the importance of providing a label in the categorization of new products when two plausibly equal categories are present (Moreau et al. 1999; Gregan-Paxton et al.2002).

The significant relationship between soft drink label and soft drink categorization decision carries a different meaning in our study. The hypothetical cider brand in this research contains three percent alcohol which is an adequate amount to put cider into alcoholic drink category automatically. Despite this fact, providing a soft drink label enabled a significant number of subjects to change their categorization decisions and categorize cider as a soft drink. It can be observed from the results that, of all the subjects who were exposed to soft drink advertisements, sixty-three percent of them categorized cider as an alcoholic drink as opposed to thirty-seven percent of participants who categorized it as a soft drink before soft drink label was shown. After the label, the percentage of participants who categorized cider as an alcoholic drink decreased to forty-two, and the percentage of soft drink categorizers increased to fifty-eight.

This result denotes that it is possible for an alcoholic drink to be categorized as a soft drink if provided by right cues. It can be argued that a degree of typicality exists as suggested by probabilistic view in terms of how well an example is cider as a soft drink. For further research the degree of representativeness of this particular cider (contains three percent alcohol) in the soft drink category can be investigated.

The same significant relationship is also observed in alcoholic drink activated schema group which confirmed the results of previous research on category label. Out of all the subjects who saw the alcoholic advertisement seventy-two percent categorized it as an alcoholic drink as opposed to twenty-eight percent who categorized it as a soft drink. After the label is shown however, the percentage of alcoholic drink categorizers increased to ninety-six percent while soft drink categorizers reduced to only four percent. Thus, this result demonstrated once more how presenting a label in the advertisements leads consumers in the direction of the label.

Another conclusion that can be drawn from these findings is categorizing cider as a soft drink although it contains alcohol corresponds better to the probabilistic view in categorization classification which asserts categories are not clear cut but ill defined than classical view which has strict rules on category membership (Cohen and Basu 1987). Specifically, it is asserted in this dissertation that, in order to explain how consumers form their categorization decisions for alcoholic beverages, probabilistic view ( it has alcohol *but* it is a soft drink) has more explanatory power than classical view (it has alcohol so it *should be* an alcoholic drink).

## Categorization confidence

Data provided support for the hypothesis that as consumers are cued with a label, their categorization confidence scores will increase. Providing a label to consumers helped them to gain more confidence on their categorization decisions. In order to perform analogy based transfer, individuals first have to access to an existing category to make extensive transfers from that domain (Gentner 1989; Moreau et al. 1999). A higher degree of category confidence indicates that the access is assured and mappings from base category can be exerted.

## Performance expectations

Hypothesis 3 suggested that consumers' performance expectations of the new product will be in line with other products in that category. This hypothesis is supported only for subjects who categorized cider as an alcoholic drink. In that group, subjects based the performance expectations on their categorization decisions (cider is an alcoholic drink) and evaluated the performance of cider similar to other alcoholic drinks. As analogy based transfer suggests, when subjects were given a category label, they could make more extensive mappings from the base category to the target category. Subjects accessed to the familiar alcoholic drink domain by the help of the category label and transferred knowledge from that domain to the target (cider). (Gentner 1983; Gentner and Markman 1997; Moreau et al. 1999).

The participants who categorized cider as a soft drink reported no significant difference in cider's expected performance as a soft drink versus as an alcoholic

drink. It seems that while comprising the performance evaluation of cider, there is a thin line between product expectations and no single category is more prominent than the other.

The reason of this outcome can be attributed to the phrase "contains three percent alcohol" used in all ads, including the first one. This statement may have acted as a second label (alcoholic drink) and enabled knowledge transfer from alcoholic drink category as well. Past research posits that when individuals are given two plausible category labels and explicit mappings from each category they will effectively use the information from both categories. They will generate a higher level of understanding about the new product and base their performance evaluations on these two plausible categories (Moreau et al. 1999). Alcoholic drink was not given as a label for the soft ad group but "contains three percent alcohol" statement might have functioned as a second label and although subjects categorized cider as a soft drink, they might have used the knowledge from both domains for extensive mapping and in generating performance expectations. It may be reasonable to do so, as cider also provides the benefits of an alcoholic drink because it contains alcohol. As a result, it is highly possible that soft drink group participants combined the benefits of soft drinks and alcoholic drinks in equal levels to construct their performance expectations from cider.

Hypothesis 8 which tested the incongruency effect in performance expectations was partially supported. When presented with nutritious attribute, the soft label manipulation subjects did not lower their expectation scores. However alcohol label group subjects revealed a significant decrease in their alcohol performance scores when exposed to healthy attribute. The negative effect of

incongruency pervading to performance expectations can be observed for alcoholic label group but not for soft label group. A possible explanation for the result may be the fact that incongruency level of nutritious attribute might have not been powerful enough to prompt participants reevaluate their performance expectation scores. On the contrary healthy attribute might have a stronger incongruency effect that caused participants to lower their expectations from cider as an alcoholic drink.

Another explanation for these findings might be that participants had considered nutritious attribute as a moderate incongruity within the activated soft drink schema. It was assumed at the beginning of this study that nutritious and a soft drink that contained alcohol could not be considered as moderate congruity because alcoholic drink and soft drink were different basic categories, and contains alcohol belongs to alcoholic drink basic category whereas nutritious belongs to soft drink sub category. An incongruency caused by a soft drink that is nutritious and has alcohol can not be resolved by moving down a step in categorization hierarchy but a "cross category" change is needed. However the findings from the research brought out the possibility that participants might have thought differently. They might have tried to resolve the incongruency by activating an alternative schema at the next lower subordinate level as suggested by Meyers-Levy and Tybout (1989) without considering the alcohol content (a soft drink that has nutritious vitamins in it). Another theoretical support for this view may arise from Mervis and Rosch's (1981) alternative strategies explained to resolve incongruent information. As suggested by Mervis and Rosch (1981) there are three different resolutions to explain how individuals react when confronted with incongruent information: (1) assimilation (it's just another soft drink) (2) subtyping (it's a soft drink that is nutritious) and (3) activation of an alternative schema (it's not a soft drink; it is more of an energy

drink). In this study participants might have adopted the subtyping strategy and evaluated cider as “a soft drink that is nutritious”. However both of these explanations also require the soft drink group to evaluate cider as more favorably than the extreme incongruity alcoholic drink group because they both suggest moderate incongruity leads to more positive evaluations than extreme incongruity. Further analyses on the attitude toward cider and purchase intention scores of soft and alcoholic drink groups revealed this was not the case in our study and that no significant difference the scores of soft drink and alcoholic drink incongruency groups. Further research may shed light on the factors that caused this unexpected pattern for performance expectations.

The same analysis conducted for congruency groups revealed another important finding. For soft congruency group, after quench your thirst attribute was presented, performance expectation scores of cider as a soft drink increased. It is highly possible that a soft drink congruent attribute caused this group to form a stronger representation of cider as a soft drink and reflect it to their performance expectations. No such effect was observed for alcoholic congruent group probably because different from the soft drink group who were exposed to a soft drink that had alcohol; no contradicting information was presented to them. They could easily place cider to alcoholic drink category and form a stronger representation of cider in earlier stages.

## Attitude Toward the Brand and Purchase Intention

Data provide support for Hypothesis 4a and Hypothesis 4b which suggested that lower degrees of category confidence will lead to lower levels of brand attitude and purchase intention. That means regardless of how they categorize cider (either as alcoholic drink or soft drink) participants who have lower confidence in their categorization decisions will have less favorable evaluations of cider as an alcoholic drink or a soft drink and will be less willing to buy it.

The seventh hypothesis emphasized the same relationship when it suggested categorization confidence would decrease when an incongruent attribute is introduced. Data supported this hypothesis also. When attributes nutritious and healthy were shown to the soft label and alcoholic label groups respectively, categorization confidence scores dropped significantly.

As mentioned earlier in this study, consumers base their preferences on the performance expectations of the new product (Moreau et al. 1999; Moreau et al. 2001). Consumers form their attitudes and give their purchase decisions based on how the product will function. If the consumers can not relate the new product with an existing category, analogy based transfer does not occur which means constructing extensive mappings about the performance of the product will not be possible. If consumers cannot understand what the product is, they also cannot understand how it will function. And if they cannot understand how it will function they simply do not like it. Previous studies in categorization research assert that people don't like ambiguity and unpredictability and they form categories because categorization enables them to have a more structured and organized world view and allow predictability (Rosch 1978; Rosch et al. 1976; Cohen and Basu 1987; Murphy

and Ross 1994). When participants cannot rely on their categorization decisions, categorization cannot act as a heuristic to allow predictability and eliminate uncertainty. This induces negative affect towards the product. The participants who experienced incongruity about cider reflected this incongruity and frustration to their category decisions, confidence scores and product evaluations.

Hypothesis 5 suggested that consumers presented with an incongruent attribute will have lower degrees of attitude toward the brand and lower degrees of purchase intention scores than consumers presented with congruent attribute. Findings supported this hypothesis. Incongruent situations created the same negative effect as low category confidence as both of these variables implied uncertainty and unpredictability whereas congruent attributes justified subjects' previous evaluations. Soft drink categorizers who saw quench your thirst line in the ad reported higher attitude toward the brand and purchase intention scores than soft drink categorizers who were exposed to when you want something nutritious line. Also alcoholic categorizers, who viewed when you want to socialize line in the ad, indicated higher scores of attitude and purchase intention than other alcoholic drink categorizers who saw when you want something healthy line.

As Mandler (1982) stated people develop a more favorable attitude towards objects that conform to their expectations and allow predictability. When extreme incongruity exists, as in our case, it can be resolved only through substantial changes in the activated schema. If the substantial changes do not occur, incongruity remains unsolved and generates disappointment and uncertainty. This situation induces a negative affect toward the product (Peracchio and Tybout 1996).

Participants in soft label-soft categorization group who were given when you want to quench your thirst statement indicated higher attitude and purchase intention

scores than subjects in soft label-soft categorization or soft label –alcoholic drink categorization who were exposed to the when you want something nutritious statement. As mentioned earlier quench thirst is a more defining attribute for a soft drink than nutritious is for a soft or alcoholic drink.

Participants who were exposed to soft label information categorized cider either as a soft drink or an alcoholic drink. In soft label-incongruent condition all the participants were exposed to when you want something nutritious statement. In other words participants who categorized cider as an alcoholic drink were also presented this statement. As nutritious was evaluated as an incongruent attribute both for soft and alcoholic drinks in pretests, it satisfied the incongruency condition for both category groups.

The alcoholic drink categorization- incongruency group consisted of participants who either displayed the alcoholic drink label and categorized cider as an alcoholic drink or who were displayed alcoholic drink label and categorized cider as a soft drink. All of these participants were shown when you want something healthy statement as the incongruent attribute. However this time healthy does not count as an incongruent attribute for the soft drink category group so these six participants' evaluations were not taken into consideration when measuring the incongruency effects.

The results of the MANCOVA model, was in line with these previous analyses to measure attitude and purchase intention. Congruency came up as a significant factor in attitude formation and purchase intention. Gender was another significant factor. Male participants held a more positive attitude towards cider and were more willing to buy it than female participants. Innovativeness emerged as a significant factor as well as religious beliefs in attitude formation and purchase

intention for cider. Consumers who scored high on consumer innovativeness score evaluated cider more favorably and were more willing to buy it. Participants who indicated they did not consume alcohol because of their religious beliefs revealed lower attitude and purchase intention scores. When familiarity covariate was added to the model, it did not yield significant results. One possible explanation might be the fact that familiarity with an alcoholic drink does not necessitate the same knowledge requirements as it does for technological products in product evaluation. Familiarity with alcohol may have an effect on product taste evaluations, for example if the participants had tasted cider. It could also have an effect when more brand specific attributes were analyzed for example if the participants were asked about the attributes of certain brands or to define the best brands but these variables were irrelevant in our study.

Adding familiarity as a covariate to the MANCOVA model revealed interesting findings. First of all it made the congruency effect more clear. However the effect of gender on purchase intentions and the effect of religious beliefs on attitude toward cider disappeared. Gender had no effect on purchase decisions of cider but in attitude formation. Religious beliefs on the other hand had an effect on purchase intentions but interestingly not on attitude. It can be assumed from these findings that that when it comes to attitude formation gender is the determinant factor. Male participants developed a more positive attitude towards cider. Whether a consumer is female or male is more effective in attitude formation than whether he or she is conservative or more liberal. However when it comes to purchase decisions religious beliefs is the determinant factor. This time not the gender of the consumer but how conservative he/she is on alcohol consumption influences his/her purchase decisions.

The sixth hypothesis was partially supported. That means when nutritious attribute is introduced for soft label incongruent group their attitude towards cider fell down slightly but not significantly ($M_2$=3.75 versus $M_3$=3.60 p>.05). Alcohol label incongruent group showed an interesting pattern, attitude scores rose after healthy attribute was shown ($M_2$=3.71 versus $M_3$=3.77), but this increase was not significant p>.05.

However, purchase intention scores revealed a significant decrease after the introduction of the incongruent attribute. Negative incongruency effect prevails for purchase intention but not for attitude toward brand. One possible reason might be participants formed a generic view of cider in low involvement fashion but the incongruency revealed itself more distinctively in their overall purchase decisions. This view can be supported with the findings of the second MANCOVA model. Total familiarity variable was included in that model, and religious beliefs yielded significant results for purchase intention but not for attitude toward the brand. Religious beliefs had affected purchase intention but not attitude formation.

## Theoretical Implications

This present study makes significant contributions to categorization based transfer and schema congruity literatures. It integrates these two different streams of research into one study and finds significant results for each of them.

First of all this study extends the limits of categorization based transfer literature which suggests providing a label to new products leads consumers in the direction of the cue and away from other plausible categorizations. So far all the new products that have been analyzed were products that could possibly fit into several

categories simultaneously. Our unit of study however was a product that could readily fit into one basic category, not several plausible categories at the same time. Cider could easily be considered as a light alcoholic drink, but the categorization boundary was pushed by providing another label. The aim was to see whether categorization flexibility exists for a drink that contains alcohol. In other words the aim was to understand whether a different categorization can be achieved for cider instead of the alcoholic beverage categorization that was assumed to occur unsupervised and effortlessly. This study successfully proved that by providing a label and necessary cues, consumers can be prompted to categorize a new product in the direction of the cue rather than the automatically formed unsupervised categorization.

This dissertation also extends the works of Moreau et al. (1999; 2001) which initiate an examination of how consumers use the information from both domains when exposed to two plausible categories. This study provides confirmatory evidence that when two plausible categories exist, consumers integrate the knowledge from both domains in forming the performance expectations of a new product. The participants in our study which belonged to soft drink schema activated group and categorized cider as a soft drink, reported equal levels of performance expectations from cider both as a soft drink and an alcoholic drink. Alcoholic drink schema activated group on the other hand reported significantly higher performance expectations from cider as an alcoholic drink than as a soft drink. The statement that cider contains alcohol and the soft drink label presented afterwards acted as two plausible labels and both were employed in conveying the performance expectations of cider. Thus this finding corresponds to the previous works of Moreau et al. (1999;

2001) and presents a rare contribution, as it is one of the few studies on the use of multiple categories in categorization formation literature.

Another important contribution of this study is that it includes categorization confidence as a determinant factor in evaluating a new product. This study demonstrated that consumers' performance expectations and product evaluations are not only determined by their categorization decisions but also how confident they are of these decisions. This dissertation is the only study in categorization formation literature that employed categorization confidence as a dependent and an independent variable.

This study also contributes to schema congruity studies. Previous research on schema congruity mostly focuses on the incongruity between a conventional product and the activated schema (Meyers-Levy and Tybout 1989; Sujan 1985). The unit of study in this dissertation is not conventional in that sense, cider is really a new drink that is relatively harder to understand and categorize for Turkish consumers than a new brand of fruit juice or a new type of camera. The experiment was also designed to combine categorization studies with schema congruity studies. The participants were first asked to categorize cider and then presented congruent/incongruent attitudes. This research denotes a significant incongruency effect not only on product evaluations but also on performance expectations. Thus the findings successfully extend the body of knowledge in schema congruity research.

Finally this study introduces religious beliefs as a covariate in new product evaluation. This dissertation indicated that even more conservative consumers who do not consume alcohol because of their religious beliefs categorized cider as a soft drink, but when it comes to evaluations they revealed poor judgments are were

reluctant to try it. This study successfully demonstrates the effect of socio-cultural factors in attitude formation and purchase intention of new products.

## Managerial Implications

This study reveals that one of the biggest challenges facing a new product is not to be understood and categorized accurately. Individuals are inclined to feel hostile towards the objects that are unpredictable or incomprehensible. The participants who experienced ambiguity about the nature of cider; the ones who had lower category confidence scores or who were exposed to incongruent attributes; all showed lower attitude scores and less willingness to try cider. It is demonstrated that when subjects cannot relate cider to an already established category in their minds, they cannot initiate category based transfer to further form an extensive representation of cider. This ambiguous situation leads to unfavorable product evaluations. Thus the findings from this study provide significant insights for marketing practitioners.

The marketing communications strategy of a new product should clearly illustrate what the product is, which product category it belongs to, where and in which occasions it is intended to be used and the benefits it will provide until consumers form an accurate representation of the new product in their minds. All these illustrations will facilitate the correct categorization of the new product in its initial stages and ensure higher product evaluations and higher chance of trial.

Another important marketing implication that can be derived from this study is how categorization affects consumers' consideration sets. Consideration set can basically be defined as the set of alternatives that the consumer considers for purchase. This study had shown that providing a category label and supplementary

cues can facilitate categorization in the direction desired by the firm. Consumers form their consideration sets according to the category membership of products. For example when a consumer decides to buy a product his/her consideration set will most probably consist of alternatives that belong to the same basic category. When a firm launches a new product, establishment to an appropriate category will ensure inclusion to consideration set. If a new product is categorized as belonging with other, attractive alternatives, the chances that it will be considered for purchase will be higher than if categorized with a set of unattractive products (Sujan 1985; Sujan and Bettman 1989; Urban, Hulland, Weinberg 1993). This study demonstrates further evidence that providing a category label and endorsing it with appropriate cues will enable firms to categorize the new product in the desired category and thus increase its chances to be preferred by consumers.

This dissertation also posits that providing consumers with incongruent attributes affects their evaluations of the new product in a negative way. This finding implies that marketing communications professionals should pay attention to the perceived meaning of the messages given in advertisements. The wording used in the advertisements in order to describe the product or its benefits should be chosen carefully. If consumers are given incongruent attributes in advertisement messages or if they perceive the attributes as incongruent with the activated categorization schema, this confusion will cause them to lower their product evaluations and purchase intention. This negative effect will prevail even if the incongruent attribute implies positive meanings. The two incongruent attributes used in our study (nutritious and healthy) have positive inferences per-se but when applied to an incongruent categorization schema they induced negative feelings. Thus marketing

practitioners should pay attention to how the attributes used to define the new product are perceived.

The final marketing implication that can be drawn from this present study relates to definition of the target audience of cider. It is demonstrated in this study that gender has a main effect both on attitude formation and purchase intention of cider. Earlier studies posit that gender can be a crucial factor in determining the preferences of certain products. In our study male participants revealed higher attitude and purchase intention scores for cider than female participants. Marketing practitioners may consider targeting cider mostly to a male audience and form their communication strategies accordingly.

## Limitations and Future Research

The attributes that were used in the advertisements were determined by the findings gathered after the pretests. According to Viswanathan et al. (1999), different attributes may emerge to determine attitude towards product if subordinate category (for example beer) specific attributes were analyzed. In the pretests the respondents were questioned about attributes relating only to basic category levels, that means attributes related with general soft drink and alcoholic drink categories were investigated only. Different attributes could have been mentioned if participants were asked about subordinate level categories, for example if participants were asked to indicate their opinions on hard alcoholic drink *and* soft alcoholic drink subordinate level categories. “Quench thirst” is not a defining attribute for hard alcoholic drinks such as whisky or vodka but might be suitable for beer or light beer. If cider was to be positioned as beer or light beer, attitudes related with subordinate beer category

could have more impact on attitude formation rather than alcoholic beverage category only.

Another limitation of this study is the incongruency level of the attributes used in soft drink activated schema and alcoholic drink activated schema groups. Soft drink group was given the attribute nutritious as the incongruent attribute and alcoholic drink group was given healthy. It is possible that healthy is considered as more incongruent for an alcoholic beverage than nutritious is for a soft drink. A manipulation check could have revealed whether these two attributes implied equal levels of incongruity between the product and activated schema. This present research can be extended by putting more emphasis on the incongruency level.

Further research can also investigate the effect of product packaging on new product categorization. The cider bottle in our study was chosen to resemble both a soft drink and an alcoholic drink. Later in the study some participants acknowledged that the bottle also resembled an energy drink. This finding can be extended by future studies to explore how product packaging alone affect the categorization and evaluation of new products. A similar research can be conducted to see the effects of brand associations. Turkish consumers had never heard of the name cider before. The type of associations they formed with cider name and the effects it had on evaluations can be investigated in the future.

# CHAPTER 7

# CONCLUSION

This dissertation investigated the effects of category based transfer and schema incongruity on the categorization of new products. While doing so it adopted 2 (soft drink label / alcoholic drink label) x 2 (congruent attribute/ incongruent attribute) experimental design and used cider as the unit of analysis.

The first part of the experiment searched for the effect of providing a category label on the categorization process of cider. It is demonstrated that by providing a category label in the advertisements, it is possible to lead consumers in the direction of the label. Although the hypothetical cider in our study contained three percent alcohol, participants categorized it as a soft drink after being exposed to soft drink label. There was also a significant increase in the number of participants who categorized cider as an alcoholic drink after being exposed to alcoholic drink label. This study clearly showed the importance of providing category label in the categorization of new products.

In the second part of the experiment schema incongruity effects were investigated. When exposed to incongruent information participants significantly lowered their attitude towards cider and purchase intention scores. Incongruency also deteriorated their performance expectations. The ambiguity and obscurity caused by incongruent information induced negative evaluations towards cider.

The main idea behind this dissertation was to explore what happens when consumers are faced with a new product they cannot conceive, what do they think

about such a product and how do they evaluate it. This dissertation was written with the aim of making a significant contribution to the understanding of these issues. The objective of integrating categorization flexibility research and schema congruity research was to provide a higher understanding of the categorization of new products and how the information acquired during the process affected product evaluations. Hopefully this study enables a better understanding of new product categorization and its findings will be extended by giving more emphasis on incongruency level of attributes and investigating the effects of product packaging and brand name associations in new product categorization.

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