MEANS-END CHAIN METHODS COMPARISON: AN APPLICATION TO CONSUMER GOODS IN IRAN

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Abstract

Understanding the consumers' needs in today's highly competitive market is very important. Every year producers (even multinational corporations) face the high costs of failed products. This shows that information about consumer behavior is not yet adequate. As a result, methods to study consumer behavior need to be further developed. In recent decades, laddering, as a projective technique, has been widely used in practice and academic fields. To understanding the translate of attributes of products to values of consumers and reverse of it, in means end chain theory is the most important effect of laddering process. The subject of this study is a comparison between two particular laddering methods – the bottom-up and top-down approaches – in order to evaluate the power of each approach in eliciting the means-end chain components. These components include attributes, consequences, values and the linkages between them. This research focuses on three products in the Iranian market; namely, chocolate, perfume and clothing. The findings show that both the bottom-up and the top-down approaches can be quite well-suited to elicit attributes and consequences. Other findings show that the bottom-up approach can be appropriate for values and attribute-consequence linkages. The last finding shows that the top-down approach is suitable for eliciting consequence-value linkages.

Keywords: consumer behaviour; means-end chain theory; laddering; consequences; values; linkages; hierarchy

INTRODUCTION

Sometimes good companies make very bad decisions regarding their new products. Schultz (2001) argues that the product failure rate has remained high and constant, some estimates place it at about 85 percent for consumer goods. Of the many factors that influence product success or failure, Farook, Jyothi and Jayasree (2005) discuss that despite years of research and huge capital being pumped in to understanding the consumer, in this era of tight competition between domestic and global firms the firms that do not come out with new

products are putting themselves at great risk because their existing products are prone to changing customer needs, shorter product life cycles, new technologies and increased competition.

Blythe (2008) explains that identifying consumer motivation is clearly far from simple. Finding out the true motivation behind someone's behavior is similar to finding out a hidden attitude. Projective techniques in which respondents are asked to explain their motivation will often draw out the individual's real reason for behaving in a specific way. New products that do not understand customer motivation and also fulfill consumer needs or wants will fail. To reduce the chance of failure, product managers use many tools and methods to help identify consumer attitudes and preferences. Similar advances have been made in the understanding of consumer behavior. Of these, the most common one is competence; the management's failure to understand consumer needs and wants. Farook, et al (2005) discuss that the prime factor in new product success is customer value. Hence, a knowledge and understanding of how consumers reflect key aspects of their personalities in the products they purchase and consume is of vital importance to producers wishing to enhance their strategic position in the marketplace. Customer value is understood as one of the constructs that best explains consumer decision making. Its proposal is to understand how consumers translate product or service characteristics and consequences of use into personal self-relevant values.

Over the past three decades, considerable progress has been made in developing new marketing research techniques. These tools range from simple market surveys to sophisticated conjoint studies. These developments would be expected to lower the failure rate for new products. One of the new methods is the laddering process that is based on means-end chain theory.

Luiz and Leão (2007) discuss that the means-end chain theory sustains that the way consumers relate to products can be represented by a hierarchical model of three interconnected levels: product attributes, consequences of use and personal values (Copetti, 2005; Dibley & Baker, 2001; Grunert et al., 1995; Kaminski & Prado, 2005; Leão & Mello, 2001, 2002, 2003; Lin ,2002 ; Reynolds & Gutman, 1984; Perkins & Reynolds, 1988; Reynolds & Perkins, 1987; Serralvo and Ignácio, 2005; Valette-Florence and Rapacchi, 1991; Veludo-de-Oliveira and Ikeda, 2004; Vriens and Hofstede, 2000; Woodruff and Gardial, 1996).

Means-End Chain

The means–end chain (most known as a theory) of consumer behaviour is a framework for understanding the associations that groups of consumers make between products' attributes and more personally relevant and abstract consequences and values. The most commonly used technique to elicit information within this framework is termed "laddering". Laddering has been

used widely in recent years to understand consumers' cognitive structures surrounding various products.

Reynolds and Olson.(2001) believe that the essence of the means-end chain view of consumer decision-making is that consumers make decisions to solve problems (obtain desired consequences), and those consequences are relevant considerations in decision making because of their perceived relation with the goals or values that are salient in that decision context. Thus, in making decisions about which products or brands to buy, consumers necessarily focus on consequences (outcomes or experiences), rather than attributes. Stated differently, products or product attributes, per se, are not inherently important to consumers. Rather, consumers think about likely solutions to their problems when making purchase decisions.

As Poulsen, Juhl, and Grunert (2001) believe, the means-end approach has gained a lot of popularity in recent years. They argue that the means-end chain (MEC) theory is a way of systematically thinking in this hierarchical representation. The means-end chain is intuitively appealing, and has won acceptance both in academic research and in practice.

At the methodological level, the means-end approach has been twinned with the laddering technique, a qualitative interview technique subsequently subjected to some crude quantification and resulting in the so-called hierarchical value maps. This technique has been employed in numerous studies, but has also been subject to considerable criticism due to its many ad-hoc solutions and lack of underlying statistical theory (Grunert, 2005). If the means-end approach is to strive in the future as a means of academic inquiry, it is important that progress is made both in terms of theory and method development.

Laddering techniques (means-end-chains) have become popular as a means of understanding consumers' motivations for product choice. However, comparisons of laddering approaches are rare. There are two approaches for using laddering – bottom-up and top-down – that produce different results. The purpose of this research is to conduct a comparison between the two approaches. D5d n6t f5nd no previous research t6 c60*are tw6 0eth6ds. on this subject in Iran.

Laddering as a Projective Technique

Hawkins et al. (2004) argue that not only are the traditional projective techniques being used at an increasing rate, but also new approaches are being developed. One popular approach is laddering, or constructing a means-end chain**.**

THEORETICAL ASPECTS

Reynolds and Olson. (2001) discuss that the conceptual and measurement (laddering) basis for the means-end approach was developed over the past two decades. In marketing, the current interest in the means-end approach began with the seminal work of Gutman and Reynolds in the late 1970s (cf. Gutman, 1978, 1982; Gutman & Reynolds, 1979). The roots of the means-end approach, however, extend back much further to early economists' visions of consumers who calculate expected utility by considering the value of the consequences of their actions and to earlier work in marketing. Various marketing scholars have explored aspects of a means-end approach, although no one has yet developed a complete and formalized means-end theory.

Howard and Warren, (2001 argue that, the means-end approach does have strong roots in various theoretical concepts, mostly in psychology. Some foundational areas include Kelley's Personal Construct Theory, associative network theory and Rokeach's value theory from cognitive psychology. As sources of inspiration, ideas, and methods, these areas have nourished the means-end approach and contributed to its development. However, despite the progress since the 1970s, the means-end theory remains to be fully and formally explicated.

Olson and Reynolds (2001) argue that some important theoretical ideas and measurement techniques that contributed to the development of the means-end approach include the important marketing concept of benefit segmentation (Haley, 1968). Reynolds and Gutman (1988) also believe that the means-end perspective closely parallels the origin of attitude research represented by Expectancy-Value Theory (Rosenberg, 1956).

Buying Process and Means-End Chain Methods

In the process of buying, consumers do not always go through cognitive decision making, involving extensive weighting of attributes. In an individual's memory, each product attribute gives rise to several attribute-consequence-values, which together form a motivational network. So it is important for producers and market researchers to know about the attributes, consequences and values of a product in order to predict consumer's behaviour. Market researchers and scientist have established many theories for this. One of the most widely used in the recent decade is the means-end chain theory (MECT).

Conceptual models that developed based on this theory speak about the behavior, organization, structure, and content of product knowledge in consumers' memories. Evans, Jamal and Foxall (2006), in their book "Consumer Behavior", wrote based on Zaltman's (2003) research that consumer thinking process indicates multiple levels of mental processing. They summarize five levels of the thinking process that serve to inform means-end chain laddering research as follows: Level 1 represents conscious thinking that is verbalized between two or more parties. Level 2 thinking includes conscious handling of thoughts before and after

verbalizing thoughts and surfacing thoughts. Level 3 thinking includes surfacing thoughts that are mostly not under conscious control. Level 4 thinking represents unconscious thinking between two or more persons. Level 5 thinking represents unconscious processing, including spreading activation of relationships among concepts that the individual is unaware are occurring" (p. 350).

Olson and Peter (2005) explain that consumer product knowledge can have four levels: the product class, product form, brand, and model/features.

Figure 1 Levels of consumer product Knowledge

More Abstract ← → Less Abstract
Product class   Product Form   Brand   Model/features

Source: Olson and Peter (2005)

They also believe that consumer product knowledge can have three types: 1- Knowledge about the characteristics of products or attributes. 2- Knowledge about the (outcome) benefits of using products or positive consequences 3- Knowledge about the values or broad goals that the consumer can achieve or satisfy after using the product.

As means-end chain theory age is not more than 30 years old, its epistemological status has not been clearly completed yet. Some market researchers try to distinguish MEC in simplistic stakes and discuss the motivational and cognitive structure of means-end. The means-end perspective suggests that consumers think about the product attributes subjectively in terms of personal consequences. In other words, consumers see most product attributes as a means to some end. The end could be a consequence (a benefit or a risk) or a more abstract value.

The first versions of means-end chain theory (MECT) were introduced by advertising practitioners (Young and Feigin, 1975) who developed guidelines for the creative process that take their point of departure in what degree of involvement and kind of information processing are typical for the product in question. Gutman (1982) developed this thinking further by suggesting that consumers use a cognitive chain for buying decisions that relates product attributes to benefits, which in turn contribute to fulfill personal values. The core assumption of this approach is that consumers view product attributes or service bundles as means to achieve desired ends, that is, that consumption-relevant knowledge is represented in memory as hierarchical cognitive structures at various levels of abstraction and their associative links to consumers' self-knowledge. These cognitive structures are labeled means-end chains and are the result of learning and experience processes (Reynolds and Gutman, 1988).

The means-end chain theory holds that in order to better understand consumer decision making, attributes have to be linked to consumption consequences or the effect of consuming the product, as well as to consumer values, which are general guiding principles in people's behavior (Gutman, 1982; Reynolds and Gutman, 1988).

In 1991 Pieter et al summarized the conceptual model of the means-end chain theory in the following four propositions:

1. The subjective knowledge of consumers' goods and services is organized in associative networks.

2. The concepts in these networks that are relevant for consumer decision-making are three types of consumer product knowledge (attributes of products, consequences of product use, and consumers' values).

3. Attributes, consequences and values are linked and ordered hierarchically.

4. The structure of consumers' knowledge about goods and services influences relevant consumer behaviors.

Many models of MEC have been created by researchers on the basis of the above-mentioned. The basic and simplest model of MEC consists of three elements:

Attributes $\longrightarrow$ consequences $\longrightarrow$ values

However, some researchers have proposed more complex means-end chains that consider the six-level model. Reynolds and Olson (1983) described it as below:

Concrete Attributes $\longrightarrow$ Abstract Attributes $\longrightarrow$ Functional Outcomes $\longrightarrow$ Psychosocial Outcomes $\longrightarrow$ Instrumental Values $\longrightarrow$ Terminal Values

This means-end model goes from the tangible, concrete attributes of a product to highly abstract and intangible personal and emotional values, goals or needs.

COMPONENT OF MEANS-END CHAIN

Attributes

Attributes are the qualities or features belonging to a class of concepts. In other words, attributes are the characteristics or physical components of products. They are the ways in which we see concepts as being different from each other. Some marketing scholars believe that products can be perceived as a bundle of attributes. The simplest products have several attributes; so surely, complex products would have many attributes. In a cognitive processing perspective, it seems that it is impossible for consumers to have knowledge in their memory of all the products' attributes and to use this knowledge when deciding which products and brands

they want to buy. As a result, marketers and producers need to know which product attributes are most important for consumers, what are the means of those attributes among the consumers? And how consumers use this knowledge in cognitive processes such as comprehension and decision making?

Many kinds of attributes have been introduced by market researchers. Among such attributes are those of physical objects, information, people and organizations. Some researchers classify the attributes as unidimensional and multidimensional. Unidimensional attributes describe a specific, well-defined characteristic of a product and multidimensional attributes condense or aggregate the information contained in several attributes into a single attribute.

Parry (2002) argues (on the basis of the Intrinsic-Extrinsic-Performance-Abstract (IEPA) model) that the attributes are at first divided into unidimensional and multidimensional (it is very close to abstract). Then, the unidimensional group is divided into preperformance and performance. Then the preperformance attribute is divided into intrinsic and extrinsic. Also, the performance attribute is divided into objective and subjective. Additionally, the abstract attribute is divided into user imagery, user situation imagery and weighted multiattribute evaluation. (As the items and their relevance is identified below.

Many marketing scholars have suggested classifying product attributes. This is, in part, what Lefkoff-Hagius and Mason (1993) have adapted from Finn (1985). Parry (2002) has also summarized some typologies. He summarized the typology of attributes and classified them into: tangible and intangible, search and experience, objective and subjective, physical and pseudo- physical, concrete and abstract, intrinsic and extrinsic, performance related and not performance related.

Consequences

From many years ago, the consequences of products have been discussed by scholars because customers buy products (or services) and they want benefits. In 1941, the economist Morris and Turner (1961) wrote, "Goods are wanted because they are capable of performing services—favorable events which occur at a point in time."

Furthermore, Levitt (1960) argues that consumers think about products through the consequences, not their attributes. Also, Parry (2002) says that after receiving the initial information (i.e. attributes) regarding a product, the second information that is received is the concept of the product (i.e. consequences) that is associated with attributes. Thus, consequences (outcomes of products) lead to the consumer preference.   As mentioned above, the attributes can usually be evaluated before the purchase (i.e. use), but the consequences will be evaluated and can occur only after the consumer buys (i.e. uses) and experiences it.

Consequences are defined as: What can be thought as the effects or outcomes that the participants receive from an attribute. Reiterated, consequences are the consumer preference. Consequences are what the consumer feels after consuming the product. This might be a positive or a negative feeling (Lin, 2002).

Consequences are at the intermediary level in the chain and have a more abstract meaning that reflects perceived benefits (or costs) associated with specific attributes (Gengler et al., 1999). They are characteristics that are less directly perceivable in a product or brand, and are the result of various attribute combinations and product use by the consumer (Vriens & Hofstede, 2000). In specific situations, they represent behaviors (Valette-Florence & Rapacchi, 1991).

Values

Slater (1997) has observed that '. . . the creation of customer value must be the reason for the firm's existence and certainly for its success'. As these words indicate, the creation of customer value has become a strategic imperative in building and sustaining a competitive advantage (Wang et al., 2004). So the concept of 'consumer value' has become the fundamental issue to be addressed in every marketing activity (Holbrook, 1994, 1999).

Different kind of values in this area of research can be found in the work of Woodall (2003), who proposed five distinct notions of value ('net value', 'marketing value', 'derived value', 'sale value', and 'rational value') and four temporal categorizations of these notions of value ('ex-ante', 'transaction', 'ex-post', and 'disposal').

Similarly, Khalifa (2004) proposed an integrative configuration of the concept of 'perceived value' that included three complementary models: (i) 'customer value in exchange' (which was a benefits/costs model); (ii) 'customer value build-up' (which focused on the benefits side of the value equation); and (iii) 'customer value dynamics' (which reflected the dynamics of how customers evaluate a supplier's total offering). A third example of the complexity of the subject can be found in the work of Lindgreen and Wynstra (2005), who felt that it was important to distinguish between *two* major research streams: (i) the value of goods and services; and (ii) the value of buyer–seller relationships.

In particular, some marketing academics have assumed that 'value' and 'values' are the outcome of an evaluative judgment, whereas the term values refers to the standards, rules, criteria, norms, goals, or ideals that serve as the basis for such an evaluative judgment (Holbrook, 1994, 1999). 'Value' implies a 'trade-off' between benefits and sacrifices; moreover, it implies an interaction between a customer and a product or service (Payne and Holt, 2001).

 In contrast, 'values' are important personal beliefs that people hold with respect to themselves and the goals for which they strive (Rokeach, 1968, 1973). 'Values' are thus the

implicit criteria that are employed by an individual in making a preference judgment. These criteria guide the behavior of people because they reflect the desired 'ultimate end-states of existence' (Flint et al., 1997).

In economic terms, 'value' has traditionally been equated with utility or desirability. In this regard, the 'theory of utility' provides the conceptual underpinning of the value construct (Tellis and Gaeth, 1990). This theory holds that consumers derive value according to the difference between the 'utility' provided by the attributes of a product and the 'disutility' represented by the price paid. Adopting this approach, several authors have used the term 'utility' (in various ways) in their definitions of perceived value (e.g. Afuah, 2002; Thaler, 1985; Zeithaml, 1988).

Some academic marketers in the means–end field say that because of the tangible level in functional and psychological consequences operate, value satisfiers can be translated through a product. Hence, the personal values are the goals that consumers try to achieve by purchasing a good. When we speak or think about our values, in fact, we think about what is important to us in our life.

In fact, means-end research in marketing indicates that the number of widely held values is limited." Schwartz explains this subject further by saying that "each of us holds numerous values (e.g. achievements, security, and benevolence) with varying degrees of importance. A particular value may be very important to one person but unimportant to another." Schwartz (1992; and 2005) examines six main features that can adapt the values conception. They are:

(1) Values are beliefs linked inextricably to affect.(2) Values refer to desirable goals that motivate action. (3) Values transcend specific actions and situations.

(4) Values serve as standards or criteria.(5) Values are ordered by importance relative to one another.(6) The *relative* importance of multiple values guides action. Any attitude or behavior typically has implications for more than one value.

Most means-end theory researchers had done their research using Rokeach's list of values, but some researchers (like Vannoppen who published a paper in the British Food Journal in 2002 recently prefer to use Schwartz's values (universal values theory).

Linkages

In order for customers to understand the concept of a product, it is necessary to add and associate a concept (attribute or consequence) to another concept (consequence or value). Many scholars have discussed such linkage at different levels. For instance, Keller (1998) believes that "it will be easier for consumers to create an association to new information when extensive; behavior knowledge structures already exist in memory." Also, to identify a link

between attributes and consequences, Olson and Reynolds (1983) wrote in their seminal article "Understanding Consumers, Cognitive Structure":

"We certainly need to understand the basis for the linkages or associations between specific concepts—for example, the types of associations that people make between a specific attribute of a product and its subsequent benefits. In fact, these connections are key elements of content in that the associations encode the meaning of any particular node. Any single cognitive representation has little or no meaning; its meaning is defined by the concepts with which it is associated."

Additionally, Parry (2002) examines the linkage between product concepts that a consumer would incorporate in their cognitive structure. In his opinion, consumers ought to link those concepts that are embedded in the structure used to understand a product In fact; the key elements of all the associations that are encoding of each means in all of particular nodes are linkage and connection between them. Without linkage between concepts of products, each single element on its own cannot capture the image of the product.

In order to understand the ways in which consumers think about a product, it is important to note that the fundamental set of associations that shapes this consists of the associations linking the product and its attributes. One product almost has more than one attribute. The second type of linkage is the association between the attributes and consequences of a product. One attribute or more can associate to a consequence and also one attribute may link to more than one consequence. The third type of linkage can form an association between two consequences or a consequence and a value. A consequence can be associated with more than one consequence or value. The totality of these linkages can be shown as follows:

Table 1: Linkage between the component of a product

	Product	Attribute	Consequence	Value
Product	Yes	Yes	Yes	Yes
Attribute	Yes	Yes	Yes	No
Consequence	Yes	Yes	Yes	Yes
Value	Yes	No	Yes	Yes

The linkages formed between elements carry a lot of meaning for researchers of consumer behaviors. Means-end theory has a special focus on these three types of elements.

Arrows

The first definition of arrows (the traditional definition) was meant to indicate the movement of elements from less tied to elements that are more closely tied to the customer's sense of self

(i.e. from attributes to values). The basic chain model's components are attributes, consequences, and values with linkages between them. The arrows show the direction from attributes to consequences and to values. This method is called "laddering bottom-up". The association of the linkages between the attributes, consequences and values is called the means-end chain.

$$Attributes \longrightarrow Consequences \longrightarrow Values$$

LADDERING PROCESS

For uncovering motivations, the means-end chain method usually uses a projective approach called the laddering process. Many researchers believe that in qualitative methods, such as the word association of Jung or the focus groups and repertory grid of George Kelly, the laddering technique can unveil and show the more detailed information of the purchaser's final values (i.e. motivations) (Miles & Rowe, 2004; Costa et al., 2004).

Laddering is highly recommended in researches that elicits hierarchical constructs and can become especially popular in investigating personal values. Many researchers discuss the models of the MEC theory (Botschen, Thelen, and Pieters, 1999; Dibley and Baker, 2001; Gengler, Mulvey and Oglethorpe, 1999; Gengler and Reynolds, 1995; Lastovicka, 1995; Lin, 2002; Reynolds and Gutman, 1988; Reynolds and Whitlark, 1995; Valette-Florence and Rapacchi, 1991; Vriens and Hofstede, 2000; Wansink, 2000; Woodruff and Gardial, 1996).

Introduced by Dennis Hinkle (1965), the laddering technique emerged in the field of clinical psychology in order to model the concepts and beliefs of people. Hinkle's work, a PhD dissertation at Ohio State University, although awarded, was never published. Rather, it was furthered extensively by Bannister and Mair (1968) who coined the term "laddering". Hinkle (1965; as cited in Bannister and Mair, 1968) developed the laddering technique as a means of modeling people's belief structures in a simple and systematic way, while establishing an individual's superordinate personal constructs. The technique is well established in the field of psychology, but has spread out from there to other areas like marketing, advertising, architecture, information technology, and organizational management. (Rugg, Eva, Mahmood, Rehman, Andrews and Davies, 2002) . Its application, however, is still timid in other areas such as medical and nursing.

TYPES OF LADDERING METHODS

Reynolds and Philip (2008) argue that several of the empirical laddering/MEC studies published in academic journals refer to "soft" and "hard" laddering approaches, terms first introduced by Grunert and Grunert (1995). In fact, Reynolds and Philip (2008) report that approximately 25

percent of laddering studies published in academic journals use some form of a "hard" laddering approach.

"Soft laddering" refers to in-depth interviews where respondents are restricted as little as possible in their natural flow of speech. Researchers have to understand the meaning of the given answers and to link them to the means-end model (Grunert et al., 2001).

"Hard laddering" refers to interviews and data collection techniques where the respondent is forced to produce ladders one by one, and to give answers in such a way that the sequence of the answers reflects increasing levels of abstraction. Generally, data collection not involving personal interviews refers to hard laddering, such as mechanisms of computerized data collection and self-administered questionnaires (paper-and-pencil version).

In 1991, Walker and Olson (1991) developed a paper-and-pencil version of the laddering interview. The researcher asks respondents to fill in a structured questionnaire and to write down maximally four attributes that are of relevance to them and then specify why a certain attribute is important to them. For each attribute, respondents can give up to three reasons (Botschen and Hemetsberger, 1998).

Botschen and Hemetsberger (1998) believe that by using a paper-and-pencil version, the researcher can prevent interviewer bias without difficulty. Furthermore, no social pressure is involved, and respondents themselves can decide when they want to end the laddering process. According to Botschen et al. (1999), the major advantage of the paper-and-pencil version in comparison to the traditional in-depth interviewing technique is the cost-efficient data collection. It is also easier to manage and it takes less time to collect and to analyze laddering data compared to soft laddering. Moreover, several researchers (e.g. Pieters et al., 1995; Goldenberg et al., 2000; Botschen and Hemetsberger, 1998; Botschen and Thelen, 1998) have already employed the paper-and pencil version successfully.

The Botschen et al. (1999) recommend the development of more evidence that compare the two versions of the technique. Gengler and Reynolds (1995) believe that hard laddering interferes in one of the core assumptions of the method, which is to enable the interface with the answers created spontaneously by the respondent.

Grunert and Grunert (1995) assert that the soft approach is potentially better when types of problems, on the respondent's side, are caused by very weak or very elaborate cognitive structures. In fact, they believe that when a respondent's level of knowledge about a product is too low or too high, the interviewer should prefer the soft laddering method because there are more chances to conduct an appropriate interview.

Besides, the soft approach produces more redundant data, which facilitates the reconstruction of the meaning in the step of content analysis and coding at the stage of laddering data analysis and interpretation. On the other hand, when the researched area is well

known and when no problems are encountered in the reconstruction of meanings, hard laddering has the advantage in minimizing a researcher's influence.

The fundamental assumptions underlying this popular research methodology are that the ladders (corresponding to MECs) obtained from a respondent result in a hierarchical network of meanings, from attributes (A) to functional consequences (F) to psychosocial consequences (P) to personal values (V), if the following conditions are met:

1. The ladders are derived from personally meaningful choice- or preference-distinctions, which result in a summary HVM, respectively.

2. The ladders are obtained by engaging the respondent to think carefully about each response. This is achieved by tailoring the "why is that important to you?" follow-up question to the respondent's prior response. In addition, laddering interviewers must have the questioning skills to avoid redundancy or circularity in the respondent's answers (see Reynolds and Gutman, 1988, for detailed interviewing guidelines).

3. The collective responses result in a complete ladder consisting of verbatim responses at all four levels of abstraction (A, F, P and V). Interviewers need to make sure that all levels of meaning are obtained in a given ladder. That is, no level of abstraction should be skipped or missed.

4. In the laddering analysis the appropriate concept codes are developed, thereby nesting similar meanings under the same code/concept.

5. The names of the concept codes accurately reflect the respective level of meaning (A, F, P and V).

The history of using the means-end approach shows that researchers usually use soft laddering with the bottom-up approach. However, recently, some researchers are using the top-down method of the soft laddering approach as well. As the bottom-up approach has been referred to as "means-end", it seems to be appropriate to consider the top-down method as "end-means".

Following from this then, its chain can be called the "end-means chain" (EMC) because it begins from end values and finishes with attribute means (which is the converse of the means-end chain). In order to compare the two soft laddering approaches, it is necessary to conduct a comparison of the results obtained through their usage. Comparing the number of attributes, consequences, values and linkages between them can show the effects of each approach.

The laddering method in the means-end chain focuses on revealing how respondents' link product attributes to more abstract consequences and at least to values. This method is used to develop the understanding of how consumers translate the attributes of products into meaningful associations with respect to self values. So a ladder can show the underlying reasons behind preferences in attributes.

As a projective technique, laddering operates by modeling the knowledge of the consumer as a set of hierarchies. These may be hierarchies of goals, tasks, explanations, and so on. In the laddering process, the interviewer's focus is on the individual's own insight as the respondent is considered to be a specialist of his/her own word.

Generally, understanding the motivation of the customer is difficult since it is hidden. As a result, an in-depth interview is a strong tool for the projective approach used in the laddering process.

TWO KIND OF LADDERING (BOTTOM-UP AND TOP-DOWN)

Reynolds and Gutman (2009) mentioned that laddering can take two approaches: bottom-up and top-down. The bottom-up approach begins by identifying the most important distinguishing attribute of a product. From here, the interviewer tries to move the respondent up the ladder to different levels of abstraction. This is accomplished by asking questions such as, "Why is it important for you?" The interviewer can then use the bottom-up approach to compile a means-end chain for the interviewee.

The means-end chain theory and its approaches (bottom-up and top-down) are widely used in academic and marketing researches. A considerable number of marketing studies have already been conducted based on this approach, involving different kinds of techniques and products like recycling (Bagozzi and Dabholkar, 1994) and infant feeding (Gengler et al., 1999), along with beverages (Gutman, 1997), yogurts (Vriens and Hofstede, 2000), snacks (Dibley and Baker, 2001), cars (Allen, 2001), houses (Coolen and Hoekstra, 2001), breakfast items (Manyiwa and Crawford, 2002), (Klaus G. Grunert,2005)**,** hotels (Orsingher and Marzocchi, 2003), schools (Veludo-de-Oliveira and Ikeda, 2004), (yueh yun wang, 2008) and so on.

Laddering is typically used to discover attributes as a first step, then the consequences and finally, the values of products. This type of laddering has been named the **bottom-up** method, but recently it is being used reversely too. Used in this way, it is called the **top-down** approach. This has been done by Vannoppen –Verbeke and van Huylenbroeck (2002) and Manyiwa and Crawford in (2001) and Reynolds & Gutman (2009) and Brunsø, Scholderer and Grunert (2004). Pieters et al (1995) disputed the top-down method by saying that the ultimate aim in life is the realization of the values we find important. These values determine to an important extent, which objects we pursue. In turn, for the realization of these objectives, products with certain attributes have to be consumed. In a research study that they have done for the European Institute of Brand Management, Reynolds and Gutman mentioned that laddering can take two approaches, bottom-up and top-down.
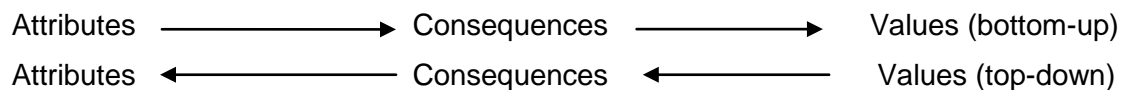
In the bottom-up approach (i.e. the traditional approach), the interviewer asks which attributes a consumer considers relevant and why, and so on. The interviewer then compiles a

means-end chain for the interviewee using the bottom-up approach (attributes consequences values). In the top-down approach, as soon as the interviewer has an idea of which values are considered important, he/she start targeting the questions of whether and how a value can be realized in practice. This is the top-down line of questioning (values, consequences and attributes). Unlike the bottom–up route (which is driven by external input), the top–down route implies stable individual differences, and can thus be tested by means of survey methods.

Brunso et al (2004) have done a study on "research on customer relations in the food sector" in Denmark. They wrote in their research that the means–end chain theory and lifestyle are reconstructed within a dual-process framework, incorporating bottom–up and top–down information processing routes. The bottom–up route is defined as a hierarchical categorization process, and the top–down route as goal-directed action. Gutman (1997) argues for a top-down view in which higher-level consequences (and values) explain goals of actions. Brunso, Scholderer (2001) have attempted to make theoretical progress by integrating the means-end approach into a broader cognitive theory encompassing both top-down and bottom-up processes.

Laddering Bottom-Up and Top-Down Approaches and Hypotheses

However, recently researchers have begun to use the opposite of this method. In other words, it starts with values, leads to consequences and finally reaches the attributes of a product. It has been named "laddering top-down". Hence, the new definition of arrows must be more general. It can be defined as that which shows the way of thinking for in order to understand the movement of the elements of a product from start to finish. This contains both of the movement methods (i.e. bottom-up and top-down).

Attributes $\longrightarrow$ Consequences $\longrightarrow$ Values (bottom-up)

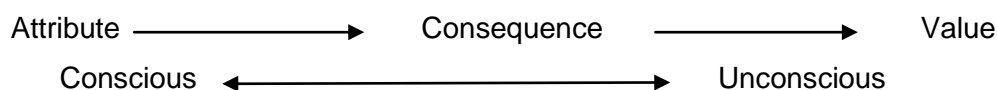Attributes $\longleftarrow$ Consequences $\longleftarrow$ Values (top-down)

The results of the bottom-up approach and the top-down approach are not the same. By combining the results obtained from each, marketers and means-end researchers may reach a new vision. It is not possible most of time for researchers to carry out both approaches. So they must use one of them. The question thus becomes, which approach can better reveal the attributes, consequences and values of a product? Also, which method is better at showing the linkages between them? Hence, the research at hand tries to answer to this main question:

What are the differences between the two approaches (laddering bottom- up and top-down) for eliciting attributes, consequences, values and their linkages?

Peter and Olson (2005) recognize that the internal feeling that results when a value has been satisfied or a basic life goal has been achieved is somewhat intangible and subjective. Evans et al. (2006) explain that because the scientific literature points to most thinking being unconscious, with consumers typically being unable to surface and report unconscious processes that often drive their behavior (Zaltman, 2003), advancing theory and research that provides insight into the unconscious consumer processing is worthwhile. Heretofore the value of consumer theory and research of means-end chain and the laddering method relates only implicitly to unconscious mental process ad hoc laddering may help to surface unconscious thoughts.
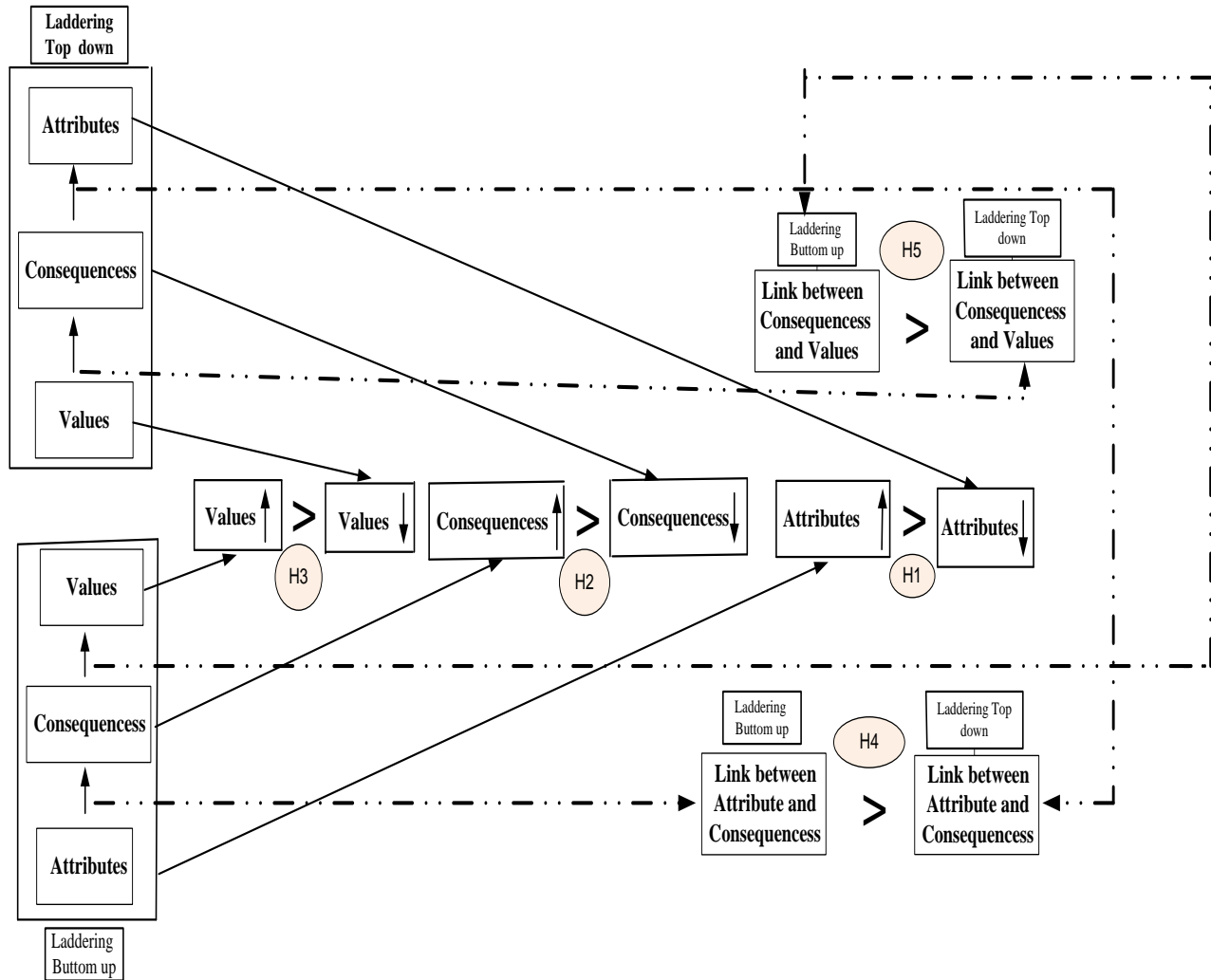
While the top-down approach starts with the subjective (value) level, the bottom-up approach starts with the objective (attribute) level. It is generally easier for respondents to think, image and speak about that which is objective. It seems that in this bottom-up approach, when the elements ascend from attributes to values, the conscious and awareness transcend into the unconscious and unawareness.

Attribute ⟶ Consequence ⟶ Value

Conscious ⟵⟶ Unconscious

By comparing the outputs of the two approaches, it seems that the best results can be obtained through a combination of the two approaches. However, most of the time, researchers cannot use them both at the same time. Both approaches rely on in-depth interviews with consumers. Thus, all the limitations of an in-depth interview (such as time, budget, skilled interviewers and so on) may force the researcher to choose either the bottom-up or top-down approach. Researchers need to know which elements (attributes, consequences, values and the linkages between them) can be better elicited by each approach. Therefore, all of the five elements in the two approaches must be compared together.

In the laddering bottom-up approach, the core assumption is that the first view of the product by a consumer is a bundle of attributes. These attributes are the means that finally lead to the ends. So, when researchers want to understand the thoughts of consumers surrounding a product, interviewers will uncover this information from the interviewee's discussion about its attributes. In the study at hand, consumers' views regarding a bundle of attributes pertaining to chocolate, perfume and clothing have been elicited.

Figure 2 Hypotheses component relations

Due to the nature of the means-end chain components and laddering process, it is important to have an expanded knowledge about their elements because they will play a basic role in comparing the two approaches (bottom-up and top-down). By comparing the components of the two approaches, the strengths and weakness of each of them will be unveiled. As mentioned before some researchers have proposed more complex means-end chains but in this research we will use the basic means-end chain that is the simplest model of MEC. It consists of five elements: Attributes, consequences, values, linkages between attributes and consequences and linkages between consequences and values. It is predictable that the results of research will show which approaches (B-U or T-D) are more suitable for eliciting the components (attributes, consequences and values) of MEC and their linkages (attributes-consequences and consequence-values).

RESEARCH METHODOLOGY

Design

According what mentioned before, the subject of this study is to compare two approaches – either the traditional bottom-up or the new top-down laddering approach. As the consequences, values and their links are mostly hidden in a product and they are difficult to measure (sometimes it seems as though it is impossible, especially regarding values and linkages), we need to take an in-depth look at consumer behavior in order to uncover consumer motivation. As qualitative methods can be used to do this, the following approaches were chosen to gather data in this study.

In order to find the difference between the two approaches in eliciting the number of means-end components, the information was gathered through the soft laddering process (which originally uses in-depth interviews) for three kinds of products (chocolate, perfume and clothing). Then, after eliciting the number of components, they were ready to analyze and compare the results.

Sampling

In this study, the quota sampling method was used due to the available information about the percentage of different segments in the markets.

Sample Size

DePaulo (2000) believes that by using mathematical extrapolations, the authors hypothesized that 20-30 in-depth interviews (IDIs) are needed to uncover 90-95 percent of all customer needs for the product categories studied. Also, based on the results of Griffin and Hauser (1997), the implication would be to conduct 20-30 IDIs as the sample size. Wilmot (2006) explains that to provide some idea of the scale of the qualitative investigation, one might expect to achieve between 20 and 50 interviews for a one-to-one investigation.

Poulsen, Juhl and Grunert (2001) argue that it is in accordance with the qualitative nature of laddering studies that the number of respondents is typically fairly small (10-100), while the number of possible ladders is large. According to my studies, the sample size of respondents in research studies is mostly less than 40 interviewees.

Some of the sample sizes of interviewees that have used the IDI in the laddering process are as follow:

Table 2 Number of interviewee in some studies

	Researchers	Research Year	No. of Interviewee
1	Reynolds and Gutman	1984	26
2	Reynolds et.al	1985	35
3	Reynolds and jamieson	1985	20
4	Jolly et.al (1988)	1988	22
5	Reynolds and Guttman	1988	67
6	Hofstede,Audenaert Benedict and Steenkamp	1988	**67**
7	Vannoppen, Verbeke and Huylenbroeck	1997	20
8	Howlett,. McCarthy, and O'Reilly	2002	40
9	Greiml-Fuhrmann and Geyer	2002	23
10	Helle Alsted Søndergaard	2003	40
11	rekom and wierenga	2007	20
12	Padel and Foster	2005	85

The sample size in more than 75% of the relevant articles that I found before the sampling of this research was less than 40 respondents, and other articles that I found later also support this rate. In this study, only a few of the products' market information were available to me. Through study and consultation with some experts, and by comparing the phenomena of three product markets (chocolate, perfume and clothe) that were more closer than others, have chosen for this research. Their sample size is as below:

Table 3 Bottom-up and top-down approaches interviewee numbers

	Bottom-Up Interviewees	Top-Down Interviewees	Total
Chocolates	75	75	150
Perfumes	50	50	100
Clothes	50	50	100
Total	175	175	350

As chocolate was the first product for which collected data, 150 interviewees has chosen (75 respondents were used for the bottom-up and 75 for the top-down approach) to ensure that no important data would be missed. It found, though, that all the items that were elicited were found within the first 30 respondents. Therefore, based on the experience in the chocolate market, the

number of interviewees decreased in perfume and clothe products to 100 respondents. So, 50 interviewees were for the bottom-up and 50 interviewees were chosen for the top-down approach.

The percent of market segmentation and the rate of sales in different parts of the market segmentation were found at relevant nongovernmental organizations. In terms of chocolate, an Iranian association of confectionary and chocolate producers and two special chocolate distributer companies were consulted. This was the same for perfume and clothe. Their information served as a base used to specify the percent of interviewees allocated to each market segment. After multiplying the percent of each segment to the total respondents' numbers, the respondents' numbers for different segments were found. The tables that show the number of respondents for chocolate perfume and clothing are as follows:

Table 4 Chocolate market and the respondents' numbers in different segments

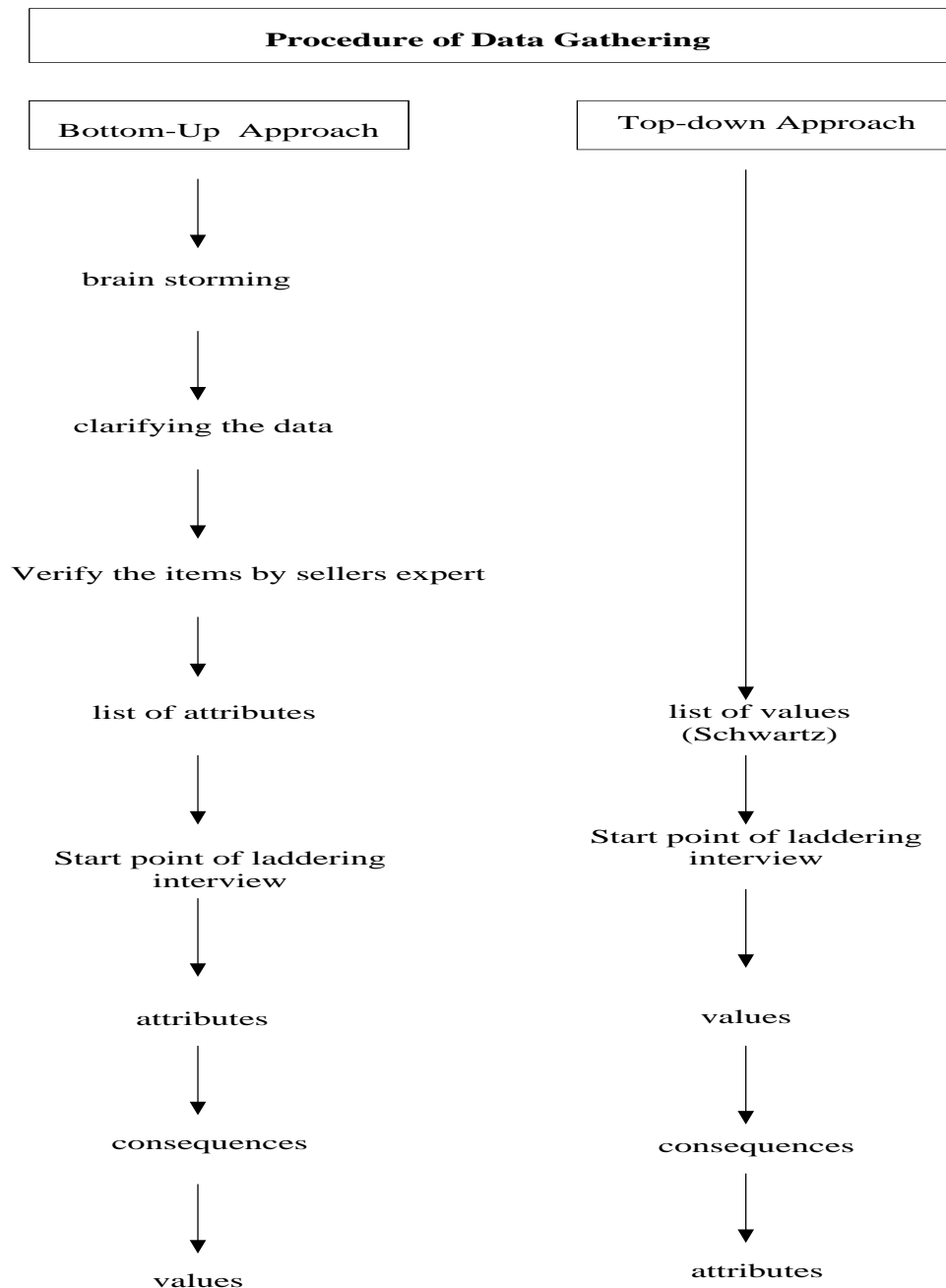|	Confectionery Shops	Supermarkets	Chain Stores	Coffee Shops	Metro Stations	Others	Total
Market Share Percent	40	35	18	3	2	2	100
Total population	150	150	150	150	150	150	150
Interviewee numbers	60	52	28	4	4*	2*	150

Interview in Laddering

The laddering technique is one of great use in research that elicits hierarchical constructs, and it is popular in studies attempting to investigate personal values (Botschen et al., 1999; Dibley & Baker, 2001; Lin, 2002; Vriens & Hofstede, 2000; Wansink, 2000, 2003). Wansink (2000) suggests that the laddering probe is similar to that of the work of a psychologist: "a laddering interview is similar to the classical picture of a psychologist interviewing a patient on a couch and uncovering insights into their lives that are not apparent to even the patient". Laddering has been successfully applied in the field of psychology, marketing, advertising, architecture, information technology, organizational management (Rugg et al., 2002) and tourism (e.g. Jansen-Verbeke&Rekom, 1996; Klenosky, 2002; Klenosky et al., 1998; Thyne, 2001). So far, however, its use is still tentative in host attitudinal studies. McDaniel and Gates (2005) argue that the direction of depth interview is guided by the responses of the interviewees. As the interview unfolds, the interviewer thoroughly probes each answer and uses the replies as a basis for further questioning. Philip et al (2010) argue that data obtained from studies using a "hard", "check-the-box" approach will likely differ from data obtained using the traditional "soft"

laddering approach. When the fundamental assumptions of the laddering methodology are adhered to, specifically with respect to developing concept codes and HVM construction, the result is more interpretable and less ambiguous.

The laddering approach that is used in this study is an in-depth, one-to-one tailored interviewing format technique that primarily uses a series of directed probes. According to Olson & Reynolds (2001), it is a semi-structured, qualitative method in which respondents are asked a series of questions about a particular product or service.

Figure 2 Procedure of data collection

| Procedure of Data Gathering |

| Bottom-Up Approach | Top-down Approach |

brain storming

clarifying the data

Verify the items by sellers expert

| list of attributes | list of values (Schwartz) |

| Start point of laddering interview | Start point of laddering interview |

| attributes | values |

| consequences | consequences |

| values | attributes |

Notices About Interviewee (Respondent) Results

Many problems were encountered with the interviewees. Some important ones are as follows:

1. The repetitive questions were, at times, tedious for the interviewees. Researchers suggested doing the interview when the respondents were not tired, like in the morning. They also had to look directly at the faces of the respondents to ensure that they were relaxed, happy, and so on before inviting them to begin an interview.

2. It was a long interview. Sometimes it took up to 70 minutes, though the average was 40 minutes. As a result, some respondents were losing their attention span. The researchers suggested writing down the important points of the respondents' answers so that when they lost their concentration, the interviewer could help restore it by engaging in conversation (i.e. by replying to the respondents).

3. As interviewing is not a social norm in Iran (though it is now growing very fast), some interviewees left before finishing the interview. Researchers suggest explaining to the interviewees that their help is very important. It may also help to show them the gifts that they will receive and place them in a location where they can see it.

4. I couldn't use this method in a larger scale because of the lack of skilled interviewers and the cost of it. Researchers suggest providing a good budget for their research. They can find budget protection from related NGOs or big companies in the same field.

5. To be the center of attention was a big problem as some respondents liked to appear more intelligent and as having greater expertise than they actually had. As a result, they strayed away from the interview subject. Researchers suggest guiding them to the interview subject continually and being tough but pleasant to them.

6. Some of the females found it difficult to be interviewed by a male. This was sometimes a problem as I was doing all of the interviews myself. Researchers suggest training females to serve as half of the total interviewers. It is better to choose them from among university students.

DATA ANALYSIS

According the purpose of this research, the number of components of MEC (phenomenon itself), has analyzed independent of human perceptions of reasons why. So t-tests have been used to test hypotheses 1 to 5, and they are analyzed separately. A factorial design will be analyzed by two-way ANOVA. The SPSS software has been chosen for analyzing the data.

Three projective methods are used in this study (completion procedures, expressive procedures and choice ordering).Accordance with the qualitative nature of laddering studies that the number of respondents is typically fairly small (10-100), while the number of possible ladders is large, the Sample Sizes for chocolate, clothe and perfume market are selected. The

laddering technique is widely used in researches, and it is popular in studies attempting to investigate personal values.

Interviewing and interview in laddering process, its procedure and its start point in both approaches (B-U and T-D) has used in this study. For analyzing the data, different kind of analyzing tools especially HVM that is one of the most important laddering process and its Procedure and components are defined.

Also a one by one in-depth interview with three projective methods under umbrella of choice ordering procedures has used for it to analyzing the data, two quantitative methods (t-test and two-ways ANOVA) have been selected. Some other notices that happened in interviews are classified in "Notices about Interviewee" section.

In this study we used two statistical methods to find the answer of main question. At first, each of the products' (i.e. chocolate, perfume and clothe) means-end chain components (i.e. attributes, consequences and values) were evaluated and judged separately by t-tests. Finally, the group of products are discussed through a two-way (two-factor) ANOVA. Then, the findings and hypotheses of the linkages between attributes – consequences, consequences – values and the reverse is discussed. The same is done for each of the components.

FINDING AND DISCUSSION

Based on the data and analysis presented above, the bottom-up approach can elicit greater numbers of values and linkages between attributes and consequences than can be done using the top-down approach. This means that the laddering bottom-up can be looked at with greater depth to explore the two mentioned components (that have a strong influence on consumer behavior) than the top-down approach. Also, this study has shown that the top-down approach is more powerful in discovering the linkages between values and consequences than the bottom-up approach. As previously mentioned, hypotheses numbers one, two and five have been rejected. However, the converse of hypothesis number five was acceptable and hypotheses numbers one and two show no difference in their ability to unveil attributes and consequences. The following tables briefly show the results:

Table 5 The results of the hypotheses for three products separately
and as a group (chocolate, perfume and clothes)

	Hypothesis (1)				Hypothesis (2)				Hypothesis (3)				Hypothesis (4)				Hypothesis (5)			
Products	Ch	Per	clo	group	ch	per	clo	group	ch	per	clo	group	Ch	Per	clo	group	ch	per	clo	group
Results	R	R	R	R	R	R	R	R	A	A	A	A	A	A	A	A	R	R	R	R

R.= Reject   A.= Accept   Ch.= chocolate   Per.=perfume   Clo.= clothe

As the table 5 shows the hypothesis number one, two and five for all products (chocolate, perfume and clothe) individually and in group are rejected (attributes, consequences and links between consequences and values). But they are accepted for hypothesis number three and four. (Values and links between attributes and consequences).

Table 6 The combination of results of the hypotheses for all three products
(chocolate, perfume and clothes) individually and in group

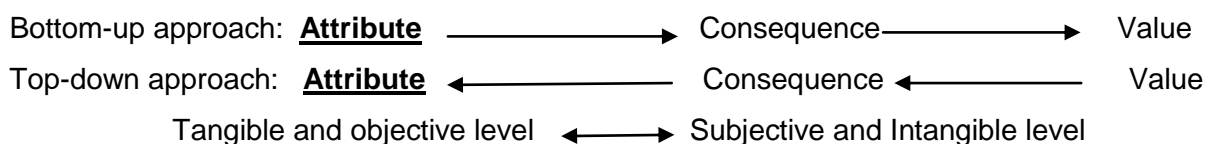|	Hypothesis (1)	Hypothesis (2)	Hypothesis (3)	Hypothesis (4)	Hypothesis (5)
Result	Rejected	Rejected	Accepted	Accepted	Rejected

Table 7   Comparison between the assumptions of the hypothesis and
the combining of results for the elements of the means-end chain

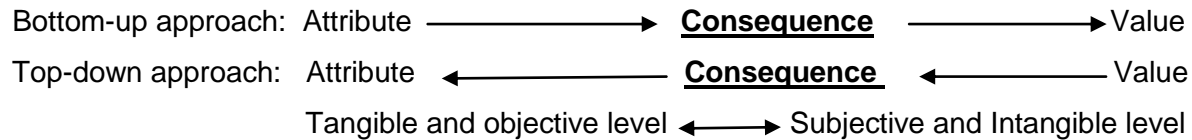| Appropriate approach	Attributes	Consequences	Values	Linkages between attribute and consequences	Linkages between consequences and values
Bottom-up	+	+	+	+	_
Top-down	+	+	_	_	+

As the table 7 shows the combining of results for the elements of the means-end chain are the same as their results in table 6. In other word the results of individually and group is the same as their combining.
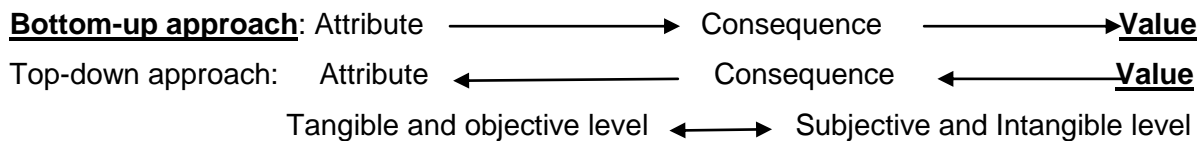
THEORETICAL IMPLICATIONS

On the basis of this information and as the above research has shown, hypothesis number one is rejected (table 6) for the three products separately and as a group. The statistic results show (table 7) that both approaches are the same in the case of eliciting attributes. At first glance, it seems that these results should be different because the bottom-up approach starts with a tangible element (attribute) and finishes with an intangible element (value). On the contrary, the top-down approach starts with an intangible element (value) and finishes with a tangible (attribute) element. Nonetheless, the results implausibly show that they act in the same way. This is perhaps due to the reason that attributes are at the objective and tangible level in both approaches. (E.g. color, size and flavor)

Bottom-up approach: **<u>Attribute</u>** ⟶ Consequence ⟶ Value
Top-down approach: **<u>Attribute</u>** ⟵ Consequence ⟵ Value
Tangible and objective level ⟷ Subjective and Intangible level

As shown in the above tables, hypothesis number two for each of the three products, separately and as a group, is rejected. The corresponding results illustrate (in table 7) that, in this study, both approaches elicited consequences in the same way. This may be because consequences are between the objective level (attribute) and subjective level (value) in both approaches and it is easy to image for consumers. (e.g. "I like the taste", "I save money", "I like flavor""I appear attractive to others"

Bottom-up approach: Attribute ⟶ **Consequence** ⟶ Value
Top-down approach: Attribute ⟵ **Consequence** ⟵ Value
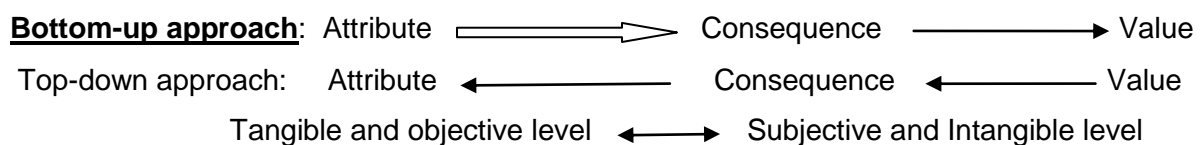Tangible and objective level ⟷ Subjective and Intangible level

The findings prove that for each of the three products, separately and as a group, hypothesis number three is accepted. The corresponding results in table 6, 7 show that the bottom-up approach elicited values more than the top-down approach in this study.

Bottom-up approach: Attribute ⟶ Consequence ⟶ **Value**
Top-down approach: Attribute ⟵ Consequence ⟵ **Value**
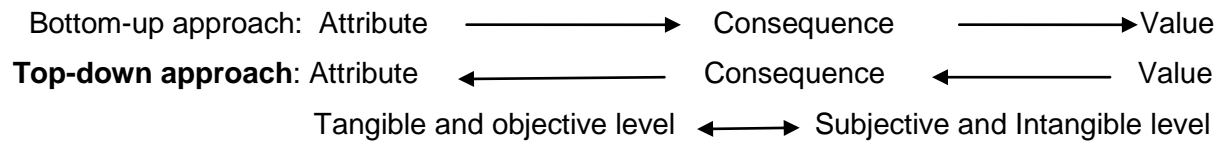Tangible and objective level ⟷ Subjective and Intangible level

Among all the results shown above (tables 5, 6, 7), hypothesis number four is accepted for all three products, separately and as a group. The results of this study indicate that the bottom-up approach may elicit more linkages between attributes and consequences than the top-down approach. This may be because consumers can imagine and think about the objective features (attributes) of products more easily and more quickly than the semi-tangible features (consequences).

The bottom-up approach starts linking with tangible elements (attributes) and finishes with semi-tangible elements (consequences). However, the top-down approach starts with consequences (semi-tangible elements) and finishes with tangible elements (attributes).

Bottom-up approach: Attribute ⟹ Consequence ⟶ Value
Top-down approach: Attribute ⟵ Consequence ⟵ Value
Tangible and objective level ⟷ Subjective and Intangible level

As shown in, hypothesis number five is rejected for all three products, separately and as a group. However, the corresponding results illustrate (table 6, 7) that, in this case, the top-down approach can elicit more linkages than the bottom-up approach. Perhaps this is because values are at the subjective level and then what. The top-down approach starts with intangible elements (values) and finishes with semi-tangible elements (consequences). On the other hand,

the bottom-up approach starts linking with semi-tangible element (consequences) and finishes with intangible elements (values).

Bottom-up approach: Attribute ⟶ Consequence ⟶ Value

Top-down approach: Attribute ⟵ Consequence ⟵ Value

Tangible and objective level ⟷ Subjective and Intangible level

For the purpose of this study, it is perhaps most interesting to note two results:

1- It seems that the bottom-up approach can elicit the components of the means-end chain better than the top-down approach.

2- In linkages, when the elements move from objective to subjective levels, the approaches transfer from bottom-up to top-down. This finding is somewhat consistent with the literature review, methodology and tests of the hypothesis.

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