# THE INFLUENCES OF CUSTOMER SATISFACTION ON WORD OF MOUTH COMMUNICATION: A STUDY OF THE ROLES OF INDIVIDUAL LOCUS OF CONTROL ON THE PURCHASING OF THE SHOPPING PRODUCT IN KODYA JOGJAKARTA

**A THESIS**

Presented as a Partial Fulfillment of the Requirements
To Obtain the Bachelor Degree in Management Department


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## STATEMENT OF FREE PLAGIARISM

Herein I declare the originality of this thesis; thesis is no other work which has ever presented to obtain any university degree, and in my concern there is neither one else's opinion nor published written work, except acknowledged quotation relevant to the topic of this thesis which have been stated or listed on the thesis bibliography.

If in the future this statement is not proven as it supposed to be, I am wiling to accept any sanction complying to the determined regulation for its consequence.

Yogyakarta, August 16, 2007

Anton Sujarwo

*I dedicate this thesis to;*
*All my friends and my enemy*

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Anton Sujarwo

# ABSTRACT

Sujarwo, Anton (2007) "The influences of customer satisfaction on word of mouth communication: a study of the roles of individual locus of control on the purchasing of the shopping product in kodya Jogjakarta" Yogyakarta: Management Department, International Program Faculty of Economics, Universitas Islam Indonesia.

Satisfaction is the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some norm of performance) and the actual performance of the product as perceived after its consumption. Satisfaction is indeed an important driver of customer retention, becomes the fundamental determinant of long term customer behavior that will actually lead to positive word of mouth communication. Word of mouth (WOM) is communication about products and services between people who are perceived to be independent of the company providing the product or service, in a medium perceived to be independent of the company. The assumption is that consumer who satisfied with the product or service will not directly involve in the word of mouth communication with other people, but depend on the individual locus of control those people hold.

This Study investigates the role of individual locus of control as mediation in the influence of the customer satisfaction on the word of mouth communication in the purchasing of the shopping product. In the data analysis process, the researcher uses 125 respondents' samples and use One Factor Congenery of Structural Equation Modeling (SEM) from the LISREL 8.30.

Based on the research findings, the researcher concluded that the higher the customer satisfaction regarding shopping product, the higher the possibility the individuals who score high on their internal locus of control to communicate their experiences to other people. While on the other hand, individuals with high external locus of control were more likely to engage in word of mouth communication with their in-group.



Keyword: customer satisfaction, word of mouth communication, Locus of control, shopping product.

# ABSTRAK

Sujarwo, Anton (2007) "The influences of customer satisfaction on word of mouth communication: a study of the roles of individual locus of control on the purchasing of the shopping product in kodya Jogjakarta" Yogyakarta: Management Department, International Program Faculty of Economics, Universitas Islam Indonesia.

Kepuasan adalah konsumen rensponse terhadap evaluasi dari kesenjangan antara ekspektasi sebelum dan sesudah menkonsumsi produk dalam kaitannya dengan penapmilan produk secara aktual. Kepuasan seseungguhnya adalah bagian penting dari customer retention, menjadi penentu dari perilaku konsumen jangka panjang yang pada akhirnya akan menciptakan komunikasi dari mulut ke mulut yang positif. Komunikasi dari mulut ke mulut (word of mouth communication) adalah komunikasi tentang produk dan service yang terjadi antara orang-orang yang mana orang tersebut dianggap independen (tidak ada kaitannya) dengan perusahaan tertentu. Asumsinya adalah konsumen yang merasa puas dengan suatu produk atau service, tidak secara langsung akan terlibat dalam komunikasi dari mulut ke mulut dengan orang lain, tetapi tergantung dari peran mediasi yang di anut oleh orang tersebut.

Penelitian ini meneliti peran mediasi kepribadian individu sebagai perantara dalam pengaruh kepuasan pelanggan terhadap komunikasi dari mulut ke mulut dalam hal pembelian produk shopping. Dalam proses olah data, peneliti menggunakan 125 responden sebagai sample dan menggunakan One factor congenery structural equation modeling (SEM) dari software LISREL 8.30.

Berdasarkan hasil dari penelitian ini, peneliti menyimpulkan bahwa semakin tinggi kepuasan pelanggan terhadap produk shopping, semakin tinggi kemungkinan bahwa individu yang mempunyai skor internal locus of control tinggi akan mengkomunikasikan pengalamannya ke pada orang lain. Kesimpulan yang lainnya adalah individu yang memiliki external locus of control tinggi akan lebih mungkin untuk terlibat dalam komunikasi dari mulut ke mulut dengan orang terdekatnya (in-group).

Kata kunci: Kepuasan pelnggan, komunikasi dari mulut ke mulut, mediasi kepribadian individu, produk shopping.

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# CHAPTER I

# INTRODUCTION

## 1.1. Background of the study

There has been considerable big amount of research conducted related with word of mouth communication. Word of mouth is very important because it can influences variety of conditions in the information search phase of consumer decision making processes such as "awareness, expectations, perceptions, attitudes, behavioral intentions and behavior" (Buttle., 1998a: 241). The power of word of mouth is shown to be "more influential on behavior than other marketer-controlled sources" such as advertising, sales promotion, personal selling and other form of commercial communication (Buttle., 1998: 241).

Silverman (2001a: 49) explain that many studies have shown the evidence that a customer who satisfied with a product or service will communicate to three people, while a customer who feel dissatisfied with a certain product or service will speak to eleven people. Furthermore, Silverman (2001:49) explain that this kind of behavior happened because human tend to forget soon the positive experience from using or consuming certain product or service but will expressing their anger and frustrating when experiencing the negative one. This word of mouth communication will influence their purchasing habit regarding a product or service.

"Word of mouth is the most powerful way to make the decision easier" because its effectiveness can saves time and minimize the budget needed by

the people in the information searching process (Silverman, 2001:47). Even though most of the marketer believes that word of mouth is the most powerful method of non commercial communication tool in the market, the marketer still not utilize the full potential power of word of mouth. It happens because the fact that most of the "marketer believe explicitly or implicitly that word of mouth is out of their control", but still the marketer can harness the full potential power of word of mouth (Silverman, 2001:48).

Arndt (1967) found that both positive and negative word of mouth communication will have a significant influence on the consumer behavior and performance of the business. Word of mouth is significant because it has persuasive roles in influencing consumer's attitudes and purchase decision (Bone, 1995). The studies conducted by several researchers found that positive word of mouth communication is likely will increase consumer purchase intentions for the product that has an innovative characteristic by reducing the risk (Ditcher, 1966), help the company and the brand to create and maintain a favorable image (Arndt, 1967), and finally will reduce the overall promotional expenditure of the firm. Conversely, the negative word of mouth communication will destroy the company's reputation and financial position (Holmes and Lett, 1977).

Consumer engages in the word of mouth communication because of several reasons. Different reasons seem to occur in the consumer's engagement for the positive and the negative word of mouth communication. A study on the motivational analysis of word of mouth communication found that consumer

will involve in the positive word of mouth communication because of altruism regarding the receiver, product involvement, and self enhancement reasons (Sundram, Mitra, Webster, 1998:530). While for the motives or reasons behind the negative word of mouth communications are motives of vengeance, anxiety reduction, solicitation of advice and altruism (Sundram et. al, 1998:531).

Beside that, several [1]extrapersonal variables also influence the consumer in the process of word of mouth communication such as culture, social networks, social incentives, business climates and individual personality. And one of the most important factors in influencing the occurrence of word of mouth communication is individual personality (Buttle, 1998:249).

In the personality research, locus of control becomes an important area of study (Lefcourt 1982; Strickland 1989). Howard and Sheth (1969) suggested that locus of control as one of the most studied personality variables influence the consumer decision making process, where pre-purchase external search for information is an important component. In general terms, locus of control refers to believe that a person hold about the degree in which that person have on the control over events or things that happen in the daily lives. According to Paul E. Spector (1988) locus of control is general expectancies that rewards, reinforcements, or outcomes in life are controlled either by one's own action (internality) or by other forces (externality). Generally, people differ in term of the amount of control they believe they have over their own

[1] Contextual conditions which influence the seeking of input of word of mouth or the production of word of mouth output.

behavior and environment (Lefcourt, 1966; Rotter, 1966; Levenson, 1974). The people with high internal locus of control believe they have considerable influences over the outcomes in their lives, while the people with high external locus of control believe they are dominated by outside or external forces such as fate, luck or powerful others, the factors that are out of their control (Lam and Mizerski., 2005:218-219).

Lam and Mizerski (2005) conduct a research regarding the influences of both high internal locus of control and high external locus of control on group word of mouth communication. From the social network perspectives, consumer in general interact with people from different degree of tie strength, ranging from strong tie relationship such as family and close friends or can be categorized as in-groups to weak tie relationship such as acquaintances or can be categorized as out-groups (Lam and Mizerski, 2005:217-218). Previous research conducted by Brown and Reingen (1987) found that strong ties are more likely to be activated for the flow of information than weak ties. This finding is closely related with the findings of Bone (1992) that the amount of word of mouth communication generated is generally higher within groups which consists of many strong tie relationships than inside the groups with many weak tie relationships. Even though not all the Lam and Mizerski research hypotheses proven to be true, their research found that there was significant differences of internal and external locus of control on the in-groups and out-groups word of mouth communication.

Based on the previous explanation, satisfaction is indeed an important driver of customer retention, becomes the fundamental determinant of long term customer behavior that will actually lead to positive word of mouth communication (Ranaweera and Prabhu, 2003: 88) and one of the factors that stimulate word of mouth communication. Bone (1992) have found that high satisfaction from the past experience of consuming product or service will lead to more positive word of mouth, but still the word of mouth communication is depend on the individual locus of control. Today, there is no research that trying to reveal the roles of individual locus of control on the influences of the customer satisfaction toward word of mouth communication.

This research hopefully will try to fill the gaps from several previous researches on the word of mouth communication by investigating the influences of customer satisfaction on the word of mouth communication through the roles of individual locus of control in the context of the purchasing behavior of shopping product. The basic assumption from this research is that the consumer who satisfied with the product or service will not directly involve in the word of mouth communication with other people, but depend on the individual locus of control those people holds.

## 1.2. Problem Identification

The focus of this proposed research is to investigate whether the individual locus of control has a mediation role on the influence of customer satisfaction on the word of mouth communication. In this proposed research, the

researcher will specifically investigate the role of individual who has high internal locus of control and the individual who has high external locus of control on the influence of customer satisfaction on the in-group and out-group word of mouth communication.

### 1.3. Problem Formulation

From the previous explanation on the problems identification, the researcher will try to formulate the problems in to the form of question; these questions will be used as a basis for formulating the hypotheses in order to answer the proposed questions. From the previous general question on the problem identification, several specific problems that will be investigated in this proposed research are:

1. Does the customer satisfaction influencing the individual locus of control and word of mouth communication on the purchasing of shopping product?
2. Does the individual locus of control influencing word of mouth communication on the purchasing of shopping product?

### 1.4. Problem Limitation

In this proposed research, the researcher will explain the limitation of the problems that will be investigated. This research will focus on the investigation of the causality influences of customer satisfaction, individual locus of control and word of mouth communication. For the individual locus of control, the focus is on the internal and external locus of control. While for the word of mouth communication, the focus is on the in-group and out-group

word of mouth communication. This research will only focus on the product, especially shopping product in which characterized by the moderate involvement of the consumer, not for the service. This research will be conducted in Kodya Jogjakarta. The respondent that will be involved in this research only the respondent who has a past experience in consuming or buying a shopping product.

## 1.5. Research Objectives

The purpose of this research is to investigate the causality influences between customer satisfaction, individual locus of control and word of mouth communication. The result of this study hopefully can reveal the existence of the role of individual locus of control in mediating the influences between customer satisfaction and word of mouth communication. The findings from this research will bring benefit for the marketer practitioner in formulating the marketing strategy to stimulate the word of mouth communication.

## 1.6. Research Contributions

This research will not only bring theoretical contribution, but also give the practical contribution for the marketer practitioner. At least there will be two things that become theoretical contributions from this research, which are:

1. This research will give empirical evidence about the mediating role of individual locus of control on the influences of customer satisfaction on the word of mouth communication. This phenomenon still being ignored by the marketing researcher in the current day.

2. This research will show the new empirical evidence about word of mouth communication in the context of Indonesia.

For the marketer practitioner, this research will give a clear picture about the importance of customer satisfaction in stimulating the word of mouth communication. As already been explained before, word of mouth communication is a powerful tools in influencing the consumer behavior and becomes a non-commercial promotional tools. Furthermore, the findings from this research will help the marketer practitioner in identifying community, market or society that will be easy in receiving word of mouth communication. This understanding will help the marketer practitioner in formulating the marketing strategy.

## 1.7. Definition of Terms

Tse and Wilton (1988:204) define the satisfaction as:

> *The consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some norm of performance) and the actual performance of the product as perceived after its consumption.*

From the above definition about satisfaction, Giese and Cote (2000) based on the research that involves a review of the satisfaction literature together with group and personal interview describe the customer satisfaction as:

> *A summary affective response of varying intensity, with a time –specific point of determination and limited duration, directed toward focal aspects of product acquisition and consumption.*

Silverman (2001:48) define word of mouth (WOM) as:

*Communication about products and services between people who are perceived to be independent of the company providing the product or service, in a medium perceived to be independent of the company.*

While Westbrook (1987: 261) define word of mouth communication as:

*Informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers.*

Word of mouth communication that will be investigated in this research is in-group word of mouth communication and out-group word of mouth communication. The definitions for both of them are as follows:

*In-groups are group of individuals about whose welfare a person is concerned, with whom that person is willing to cooperate without demanding equitable returns, and separations from whom leads to anxiety (Triandis, 1995).*

*In-groups are group of individuals with a stronger ties relationship such as close friends and families (Lam and Mizerski, 2005a; 215*

*Out-groups are group of individuals with a weaker ties relationship (Lam and Mizerski, 2005; 215).*

Rotter (1966) define locus of control as:

*The degree to which the individual perceives that the reward (obtained) follow from or contingent upon his own behavior or attributes.*

In this research, the locus of control is separated in to two part, high internal locus of control and high external locus of control. The definitions for each of them are as follows:

*High external locus of control is individuals that see the outcomes of events as being due to uncontrollable external variables such as luck, fate and powerful others (Lam and Mizerski, 2005a;216).*

*High internal locus of control is individuals that believe they are in control of their lives and events affecting their lives (Lam and Mizerski, 2005; 216).*

The type of products based on its classifications that will be investigated in this research is shopping product. The definition of shopping product is as follows:

*Shopping product is Consumer good that the customer, in the process of selection and purchase, characteristically compares on such bases as suitability, quality, price and style (Kotler, 2001; 295).*

# CHAPTER II

# REVIEW OF RELATED LITERATURE

## 2.1. Theoretical Review

### 2.1.1. Consumer Decision Making Process

#### 2.1.1.1. The Nicosia Model

The consumers make a decision when they a buy a product or service. When the consumers make a decision, they must follows several phase in the consumer decision making process. One of the models of consumer behavior that spelled out in considerable detail was the Nicosia model.

Paul (2001) in his review of the consumer decision-making process summarized the consumer behavior model as follows:

1. *Field one*: encompasses the output of an advertising message or information from a company and that the consumer has no prior familiarity with the advertised product. This field consists of two subfields which are the subfield one that consist of firms attributes and the subfield two that consist of consumers attributes (especially predisposition). In the subfield one the message reaches the consumer. It is a function of the firm's attributes and the means that the firm has put into motion. What reaches subfield one is an input into subfield two. In this subfield consist of consumers spaces which are composed of his psychological attributes. As this message is received and acted upon, the output hopefully is

information of an attitude toward the product which then serves as an input to field two.

2. *Field two*: represent a search for and evaluation of the advertised product. It is compared to other available alternatives as well. The output from this field may or may not be a motivation to buy.
3. *Field three*: Motivation transformed into purchasing action.
4. *Field four*: is storage or use of the purchased item and the output is the feedback of sales result to the business firm and retention of the consequences of the purchase in the buyer memory.

**Field one**: from the sources of a message to the consumer's attitude

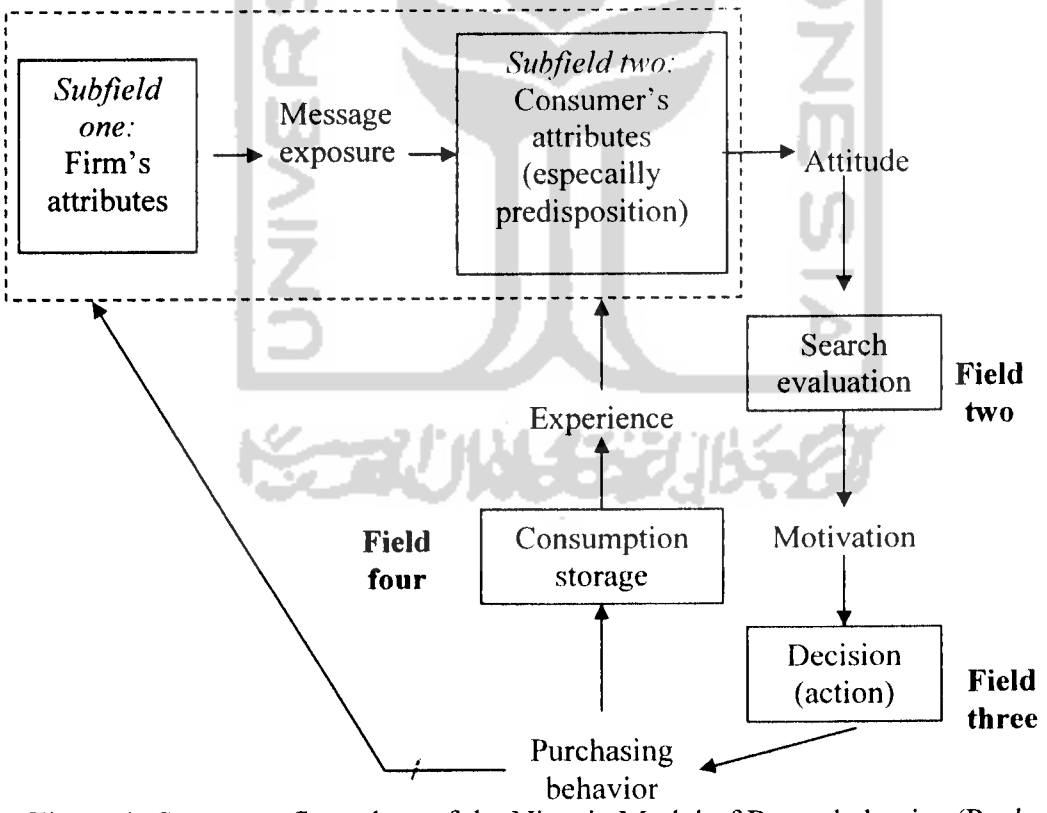



Figure 1: Summary flow chart of the Nicosia Model of Buyer behavior (Paul, 2001; 09).

From the field one (central control unit) of the Nicosia model above, lead to the development of the second model of consumer motivation and behavior to clarify the nature of significant intervening variables

### 2.1.1.2. Model of Consumer Motivation and Behavior

The central control unit or psychological command centre includes both memory and the basic facilities for thinking and behaving. Stored in the memory are:

- *Personality characteristics:* Each individual has certain ways of behaving and responding which characterize him in a unique way. Certain patterns of behavior are perceived as successful in satisfying needs and are learned and stored in memory. These are designated in Figure 2 as Motives. Everyone also develops ways of reacting and behaving: one person may be quite persistent in all that he does; another may give up more easily. These ways of behaving are called "response traits".
- *Past information and experience*: Nearly all that we do is somehow retained in the central control unit as either conscious or unconscious memory. As a result we learn to respond to stimuli of all types in consistent and predictable ways. These are the stimulus influences.
- *Values and attitudes:* Each of the characteristics discussed thus far is a general pervasive predisposition of the individual. These predispositions stored in memory interact with stored past

experience and information to form values and attitudes (an organization of concepts, beliefs, habits and motives associated with a particular object).

Everyone receives stimuli of all types from his or her external environment. These stimuli may be either physical or social: physical sensation, array of available products and services, demands of family members, social norms, etc. The system must be "turned on" before behavior can occur (arousal). This can occur through need activation: the individual becomes vigilant because of a feeling of discomfort triggered by his sensory receptors. Arousal also can occur through awareness of an external stimulus.

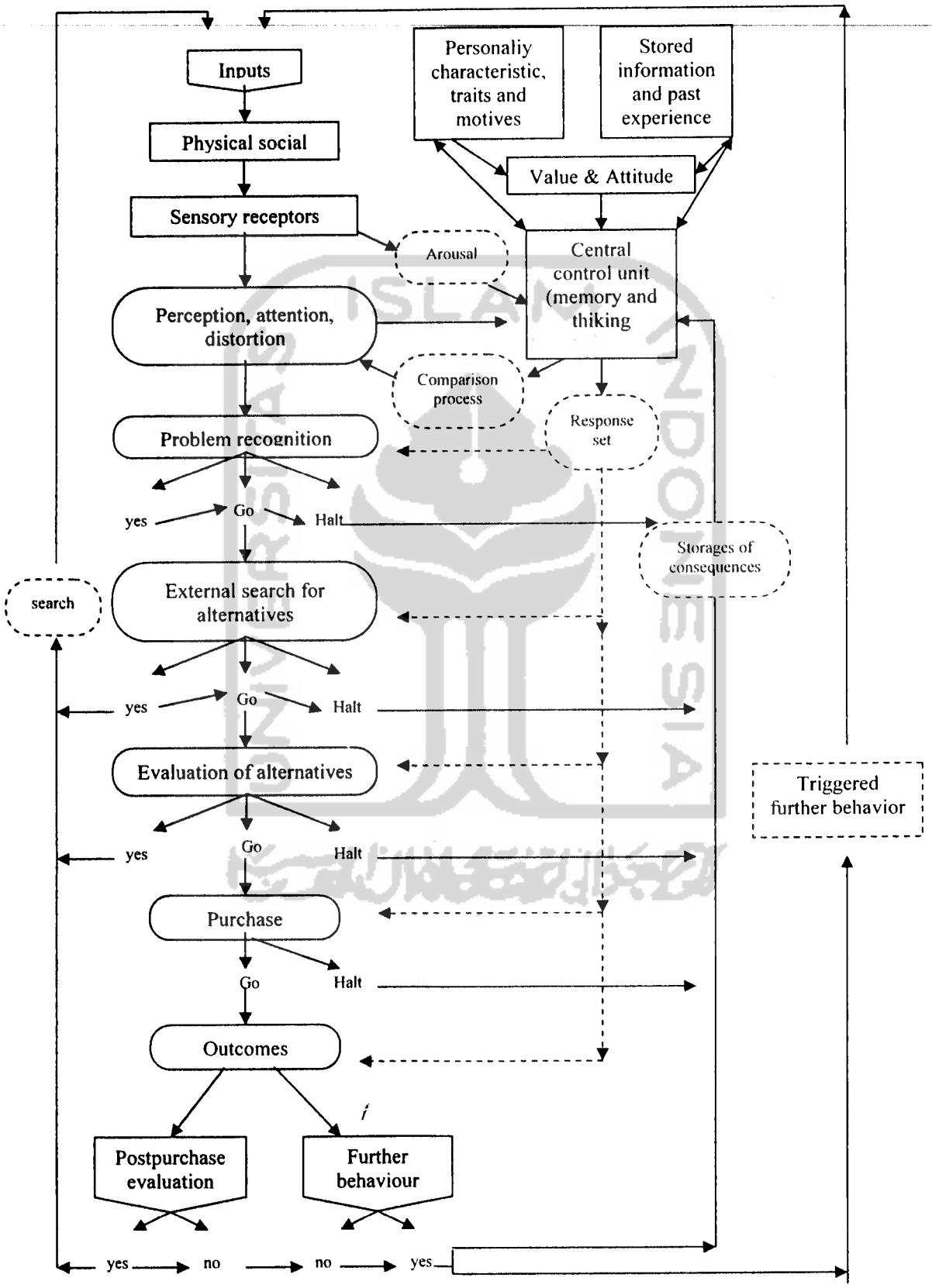
After the system is turning on thorough stimuli, the comparison process occurs. In the comparison process, two things happen which is perception ad the outcome. Perception is selective in two ways: attention and distortion. Selective attention refers to the fact that the system usually attends to those stimuli which are seen to be relevant. On the other side, components of memory can function to screen out or distort inconsistent stimuli while at the same time enhancing the probability of action on those which are relevant. Human beings seem to resist a challenge to their values and attitudes. While action result or outcomes, if it is perceived that some change is necessary to improve the present state of the system and to restore the balance which was disturbed by arousal. No doubt there is a critical level of perceived difference between the results of action and action which must be surpassed before the "flow" proceeds.

After the comparison process, next is search" or looking for information that will introduce new inputs in the system. Whatsoever the individual does when he elaborates his decision, each action is stored in memory. The decision making process from the figure 2 can be summarized as follows:

- *Search for alternatives:* Somebody may make a decision to consider the purchase of a refrigerator and have little or no awareness of available brands. Therefore his search for information is by looking at advertisements and asking friends and relatives.
- *Evaluation of alternatives:* Search for information will continue as long as the prospective buyer is not willing to make a decision on the basis of the information collected so far. Search for information is most likely to occur in non-routine decisions. Even in these circumstances, however, evaluation may be bypassed because of an awareness that the time and energy required for search outweigh any expected gains.
- *Purchase:* Finally, the preceding steps can lead to a decision to buy. Also, action can be terminated at this stage. Circumstances may change or other variables become introduced which were not apparent earlier.
- *Outcomes of the purchase:* Two additional things can happen; (I) perceived doubt about the wisdom of the action can trigger a search for information to justify the decision, and (2) the outcomes may change circumstances sufficiently to serve as a stimulus for further

behavior; eg, search to make a decision on the best type of financing. Matters may also essentially terminate at this point with outcomes being stored in memory

**Figure 2 : (Model of Consumer Motivation and Behavior)**



The influence of word of mouth communication and personal situation or characteristic happened in the search for evaluation phase of consumer decision making process while the influence of past experience from consuming a product which can produce customer satisfaction and dissatisfaction happened from the feedback phase (Paul, 2001; 10 - 11).

The Hierarchy-of-effects theory proposes that cognitive activity (non-evaluative thinking) causes affective activity (evaluative mental activity) which causes conative activity (plans for actions and also the actions themselves). In terms of the hierarchy of effects, awareness represents cognition; attitude represents affect, intention and purchase, while uses represent the conative stage (O'Brien, T.V, 1971). Consumer purchase behavior may be viewed from three perspectives, the decision making, the experiential, and the behavioral influence. The decision-making perspective holds that buying behavior results from consumers engaging in a problem-solving task in which they move through a series of stages (Mowen, J. 1988).

According to Hoyer (1984), when a product is purchased repeatedly and is relatively not important, the decision making process of consumers is characterized by low cognitive effort and use of very simple choice tactics. These tactics reflect the fact that consumers have acquired experience with similar product purchases in the past. Therefore, the decision process does not unfold at the moment of choice, but rather evolves over time on the basis of perceived satisfaction with purchased brands. In Hoyer's (1984) view,

purchase frequency and product importance are basic dimensions, as far as consumer decision making is concerned.

When a product purchase is made on an infrequent basis, brand satisfaction may be more difficult to evaluate since consumers may not be able to remember precisely how the brand performed. The more important a product is to the consumer, the more complex the decision making process. Products with higher social, personal or financial risks are likely to motivate consumers to engage in external information search and more deliberative decision processes (Alain, D. Idriss, B. & Jean, G, 1989).

### 2.1.2. Involvement and Types of Decision Making

The concept of involvement has been a major center of interest in consumer research literature for the past 20 years. Involvement is thought to be related to product use by various researchers. This relationship was thought to occur because part of involvement is defined as being personal relevance as related to needs of the individual (Engel and Blackwell 1982).

Involvement is a key motivational construct used to explain individual differences in cognitive processes such as persuasion and decision making (Johnson and Eagly, 1990). In relation with consumer decision making process, the involvement falls in to two types of concept, which is product involvement and purchase involvement.

Purchase involvement is the personal relevance of a purchase decision which is viewed as the outcome of the interaction between an individual values, goals, needs, or self concepts and the stimuli provided by the purchase

decision situations (Mittal and Lee, 1989). Purchase involvements have a different level from one consumer to other consumers even though they purchase the same product, one might have low level of involvement and the other experiencing high level of involvement, it depend on the type of the product.

Product involvement is an internal state variable that indicates the amount of arousal, interest or drive evoked by a product class (Mittal et al. 1989). Houston and Rothschild (1978) classify product involvement from the psychological perspective into two types, Enduring involvement and Situational involvement. Enduring involvement is an ongoing concern for a product class that is independent of specific purchase situations and essentially arises as a result of ongoing interest with the product class, and its association with the individual's self-concept, values and ego. Such enduring involvement results from the product's ability to satisfy consumers' enduring and self-identity-related needs, rather than from specific purchase or usage goals. On the other hand, situational involvement is fundamentally different in origin, and refers to the raised level of interest arising from a specific situation, typically a purchase occasion.

Bloch and Richins (1983) define situational involvement as "a temporary perception of product importance based on the consumer's desire to obtain particular extrinsic goals that may derive from the purchase and/or usage of the product". Situational involvement may result in the detailed evaluation of objective stimuli such as cost or performance features of the product, and/or

the social and psychological environment surrounding its purchase and consumption.

The consumer decision making process based on the level of involvement can be categorized in to three different types, which is low, medium and high level involvement decision making. In relation with decision making process for shopping product such as shoes, clothes and bags, medium or limited decision making process occurs. In general, limited decision making involves recognizing a problem for which there are several possible solutions. There is internal and limited amount of external search. A few alternatives are evaluated on a few dimensions using simple selection rules. The purchase and use of the product are given very little evaluation afterward unless there is a service problem or product failure (Hawkins, D.I, Best, R.J., and Coney, K.A., 1998). Limited decision making process applied to the situation where a buyer is being confronted with a new, unfamiliar brand and has a need for an item in that familiar product class (Paul, 2001).

### 2.1.3. Shopping Product

The classification of product into convenience, shopping and specialty goods was first offered by Melvin Copeland (1923) in his writings at the Harvard Business Review. He made reference's to Parlin's earlier work and suggested the improvement. According to Copeland, Shopping goods are those for which the consumer desires to comprises prices, quality and styles at the time of purchase. Usually the consumer whishes to make these comparison in several stores. The exact nature of the goods or product may not be clearly

defined in advanced in the mind of the shopper. The pruchase of shopping goods usually can be delayed for a time after the existence of the need has been recognized. The immediate satisfaction of the want is not so essentials in this type of goods.

In 1962, Bucklin proposed his own modified of the Copeland original three categories of the goods. According to him, as a first point of differentiation, a distinction should be made between shopping goods and non-shopping goods. According to Bucklin, Shopping goods are those for which the consumer regularly formulates a new solution to his need each time it is aroused, and the suitability of these goods is determined through search before the consumer commits himself to each purchase.

As a new concept and theories evolved in marketing, the marketing scholars continued to reanalyzed and challenges this classification systems. Kaish (1967) attempted to apply Festinger's theory of cognitive dissonance from psychology. According to him, Shopping goods are goods that arouse high levels of prepurchase anxiety about the possible inappropriateness of the purchase. This anxiety can be allayed by the consumer through information gathering and subsequent decision making. These goods are high in economic and psychological importance, contain significant performance differences and have physical qualities that are readily related to the performances characteristics.

In 1986, Murphy and Enis using the dimension of effort and risk related to price, they defines shopping product as the product whre buyers willing to

spend significant amount of time and money in searching for and and evaluating these products.

### 2.1.4. Word of Mouth Communication

Word of mouth communication has received considerable attention in the marketing literature. However, the studied appear to be limited in scope as they have examined the consequences, the antecedents, the flow and the social or situational factor of word of mouth (WOM) communication in the service context, especially the negative information of word of mouth communication (Wilson and Peterson, 1989; Man gold et. al. 1999). This research will both focused on the positive and the negative word of mouth communication about product.

The reason why this research focus on the product, especially shopping product because based on the previous research conducted by Katz and Lazarsfeld (1955) found that word of mouth communication become the most important source of influence in the purchase of household goods and food product.

The previous research of word of mouth communication in the service market place conducted by Mangold, Miller and Brockway (1999) was found that the factors that are likely to stimulate WOM include a strongly felt need on the part of the receiver, coincidental communication relating to a broader subject, or a high level of satisfaction and dissatisfaction on the part of the communicator. They also suggest that WOM may be stimulated when two or

more people are collectively trying to select a service. This means that the word of mouth communication is a group phenomenon.

While Bansal and Voyer (2000) on their research of WOM processes within a service purchase decision context found that regarding the interpersonal variables, when WOM information is actively sought it will have a greater influence on the receiver's purchase decision and when the tie between the sender and the receiver is strong, the WOM information will have a significant influence on the receiver's purchase decision. While regarding the noninterpersonal variables, an indication exist that there is a very strong positive relationship between receiver's expertise and the degree of search for WOM. Other research in the service area conducted by Money, Gilly and Graham (1998) found that Native culture has a clear main effect on the tie strength. This finding gives a clear fact to the marketer practitioner and business firm about the influence of culture and tie strength might have in the word of mouth communication.

Further research on the WOM in the service context of the financial service provider found that the market environment (competitiveness) has no impact on assessment of the importance and effectiveness of WOM while the marketing strategy have some impact on the importance of WOM (Ennew, Banerjee and Li, 2000).

In the context of the product, there were very limited studies conducted by the researcher. Bone (1992) on his study of the determinants of word of mouth communication during product consumption found that the social

environment and the individual perceptions of the consumption experience play a role in determining the amount of product discussion during consumption and there was an inverse relationship between social ties and WOM where the individuals who have weak social ties spend more time talking about each other's past experiences and interests in an effort to find common interests and to learn more about each other while those with strong ties may spend more time talking about the present since they already know so much about one another.

Another study of WOM in the context of product was conducted by Herr, Kardes and Kim (1991) found that word of mouth communication often have a strong impact on product judgments because information received in a face - to- face manner is more accessible than information presented in a less vivid manner. O'Brien (1971) also found that information in the form of advertising has no direct influence on the ultimate purchase for product. Such influence begins solely with personal sources (word-of-mouth). Thus, advertising that stimulates or initiates word of mouth is likely to be more successful than simply informative communications (O'Brien, T.V, 1971).

The research regarding positive and negative word of mouth in the context of both product and service was found that receptivity to positive or negative word of mouth information was influenced by evaluative feelings toward the product or service (Wilson and Peterson, 1989). This research suggest that in predicting word of mouth influence on acceptance of new product or services

may be greatly improved by understanding the evaluative predisposition of potential buyer as well as the valence of the word of mouth information.

Generally, word of mouth communication can be defined as an oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as non-commercial regarding a brand, product or service (Arndt, 1967). Product and services such as foods, sporting goods, musical concerts and video tapes movies all have one thing in common; they are often consumed in groups, and there is a possibility that word of mouth communication may occur. This form of communication is a group phenomenon, an exchange of comments, thoughts, or ideas among two or more individuals in which none of the individuals represent a marketing source (Bone, 1992).

Reingen (1987) found that word of mouth activity influencing variety of buyer condition such as awareness, expectations, perceptions, attitudes and purchase intentions and decision. Regarding the influences of word of mouth on the purchase decision, Reingen (1987) findings was supported by Bansal et al. (2000) research which found that WOM information when actively sought will have greater influences on the receiver's purchase decisions.

Word of mouth communications help to reduce the amount of information that must be processed in order to make a decision because consumer cannot process all of the information that is available to them for purchase decision; they often engage in simple guides for simplifying their information seeking and decision making process (Duhan, Johnson, Wilcox, and Herrel, 1997).

Considering that WOM communication as a group phenomenon, this research separates the WOM communication in to two (2) group communications which is in-group and out-group. In-group WOM communication is the communication between people who have close and strong relationship such as friends and family, conversely out-group communication is the communication between people who have no close relationship like people except close friends and family (Matsumoto, 2000). This research hopes that there exist the differences in influences of customer satisfaction and individual personality to the both in-group and out-group WOM communication.

### 2.1.5. Locus of Control

The influence of personality has been studied widely on the on the consumer behavior. And one of the most intensively and consistently studied individual personality construct is the concept of locus of control (Hoffman et. al. 2003). The intensity and frequency of WOM communication were influenced by several external factors such as situations, the market and product types, social networks, individual personality, and culture. The influences of individual personality becomes one of the most frequently studied of external factor and becomes the important factor in stimulating the occurrences of word of mouth communication (Buttle, 1998).

Previous research on the effect of locus of control on information search behavior found that internals are engage in a greater degree of information search compared to external (Srinivasan and Tikoo, 1992).

Still in the area of personality, other research on the locus of control, web use and consumer attitudes toward internet regulation found that the more consumers believe they control their own destinies, the more they use the web instrumentally, as a supplement to other activities. Conversely, the more people believe that external factors control events, the more they use the web ritualistically, to substitute for other activities such as spending time with friends and family (Hoffman, Novak and Schlosser, 2003).

In line with the research conducted by Hoffman et al. (2003), the research of Brockhaus (1975) found internals to be more oriented towards activities and more likely to possess entrepreneurial qualities such as risk taking. Internal tend to initiate new activities and undertake efforts or action in order to manage events around them actively.

The concept of locus of control (LOC) becomes one of the most widely and consistently studied construct in measuring the individual personality (Bone, 1992; Hoffman, Novak, and Schlosser, 2003). Rotter (1966) defines LOC as follows:

*The degree to which the individual perceives that the reward (obtained) follows from or is contingent upon his owns behavior or attributes.*

Rotter (1966) developed the LOC scale with two dimension namely, *internal LOC* and *external LOC*. This measurement scale has undergone several changes. Levenson (1974), critized the inconsistency of the LOC research result that not only caused by the treatment of LOC as a unidimensional construct, but also the existence of two types of *external LOC*. Because of

that, Levenson (1974) developed the LOC measurement scale into three dimensions which are *internal, powerful of others*, and *chances*.

Generally, people differ in term of the amount of control they believe they have over their own behavior and environment (Lefcourt, 1966; Rotter, 1966; Levenson, 1974). The individual who have high internal locus of control (LOC) believe that they have control over their own behavior and environment. These individuals believe that what happen in their life is as consequences of their own behavior. Conversely, individuals who have high external locus of control (LOC) believe that their life is controlled by the external factors such as luck, fate, and powerful others (Lam and Mizerski, 2005).

Furthermore, Hoffman et al. (2003) found that the people who have high internal locus of control (LOC) are more action oriented that the people who have high external locus of control (LOC). The people who have high internal locus of control (LOC) are more risk taking and actively engage in information searching for decision making, compared with the people who have high external locus of control (LOC) (Srinivasan and Tikoom, 1992).

The characteristics of the people who have high internal locus of control (LOC) such as risk taking, and action oriented influence how they communicate with other people. We can assume that they will involve in word of mouth communication (WOM) with the people around them whether they have close relationship (in-group) or having no close relationship (out-group). They involve in this activity in order to control the final result of their

decision making. Based on the nature and information needed by them, we can predict that the people who have high internal locus of control (LOC) will engage in word of mouth communication (WOM) with their out-groups compared with the people who have high external locus of control (LOC). Based on this assumption, the researcher formulated the following hypotheses:

**$H_1$**: The people who score high on their internal locus of control are more likely to engage in word of mouth communication with their out-groups compared to individuals who score low on their internal locus of control.

**$H_2$**: Individuals who score high on their internal locus of control are less likely to engage in word of mouth communication with their in-groups compared to individuals who score low on their internal locus of control.

Furthermore, if the people who have high internal locus of control (LOC) are risk taking, the people with high external locus of control (LOC) often engage in avoidance behavior (Janssen and Carton, 1999). They often feel lack of personal control and believe their actions do not necessarily lead to the desired result. Because of that, they are likely to rely on the situation and fate; however they still need advice for affiliating with other people. Even though the purpose merely for friendship and entertainment (Lam and Mizerski, 2005). Based on that phenomenon, the following hypotheses were formulated:

$H_3$: Individuals who score high on their external locus of control are more likely to engage in WOM communication with their in group compare to individual who score low on their external locus of control

$H_4$: Individuals who score high on their external locus of control are less likely to engage in WOM communication with their out group compared to individual who score low on their external locus of control

**2.1.6. Customer Satisfaction**

Practitioner and marketer practitioner agreed that customer satisfaction was becoming the main point in the long term of the consumer behavior. And that the customer satisfaction can be interpreted in varieties of ways starting from the difference in respond form (cognitive or affective); the time of evaluation (directly after or far after the consumption); the object of evaluation (transaction, company or product attributes); until the psychological process for responding such as disconfirmation of expectation, attribution, equity perceptions (Johnson, Garbarino, and Sivadas, 2006).

In the cognitive evaluation process the customers compare their prior expectations of product or services outcomes (performances and other important attributes) to those actually obtained from the product or services customer satisfaction results when actual performances meet or exceeds the consumer's expectation (Zeithaml, Berry, and Parasuraman, 1993). Likewise if expectation exceeds the actual performance, dissatisfaction will appear.

According to the confirmation/disconfirmation paradigm, customer satisfaction can be described as the outcome of comparison process between

perceived product performances and previously held expectations. When performances exceed expectations, positive disconfirmation occurs, and leads to satisfaction, while when performances below expectations will results in negative disconfirmation and dissatisfaction (Oliver, 1997).

The level of expectation held is heavily influenced by recent experiences with the product or service provider (LaTour and Peat, 1980). The temporarily increased in situational involvement shortly after the purchase decision strengthens the motivation to feel satisfied (Richins and Bloch, 1991).

The difference in customer satisfaction according to dissonance theory suggest that after making a buying decision, consumers experience post-purchase dissonance, which express their concerns of having made the wrong choice (Festinger, 1957). The occurrence of dissonance in buying decision is more likely when consumers perceive the purchase in the product category as being risky (Oliver, 1997).

Previous research on the mediating role of customer satisfaction on the effect of service quality found that customer satisfaction perform a mediating role in the link between service quality and service loyalty (Caruana, 2002). Service quality has been found to be an important input to customer satisfaction. While other research on the relative importance of customer satisfaction as determinants of positive word of mouth found that satisfaction have a significant positive effect on the word of mouth (Ranaweera et al, 2003).

Satisfied customers found to be engage in positive word of mouth (WOM) in the way that they will tell other who were external to the transaction of their

pleasure with the institution or organization that provide the service regarding certain product or brand (Prince & file, 1992). Positive WOM has traditionally been seen as a side benefit of satisfaction and been viewed as either a boost to overall marketplace image or as a low budget promotional alternatives.

In this research, the focus is on the cumulative assessment of customer satisfaction on the shopping product that already been consumed by the consumer. Bolton (1998) argued that cumulative satisfaction serve as a basis that always develop with new information from the service experience. Because of that, satisfaction must be measured and monitored in a continuous way in order to be able to assess the recent performance from product or company in the customer point of view.

Sundaram et al. (1998) found that the consumer conduct word of mouth communication because of several reasons such as helping other people, self enhancement and product involvement. Other consumers conduct positive WOM because they want to show their expertise on certain product. The similar research also conducted by Mangold et al. (1998). They show the condition that can push the occurrence of word of mouth communication such as a strongly felt need on the part of the receiver, coincidental communication relating to a broader subject, or a high level of satisfaction and dissatisfaction on the part of the communicator.

Based on the above elaboration and on the assumption that each individual who has high score on their external and internal locus of control, the following hypotheses were formulated:

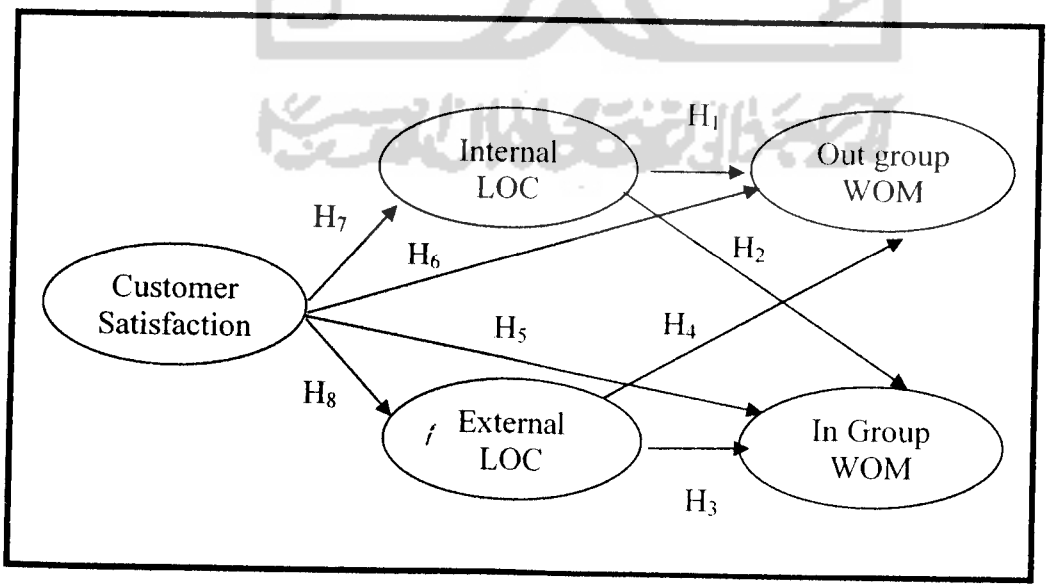
**$H_5$**: The higher the customer's satisfaction, the higher the possibility to conduct word of mouth communication with their in groups.

**$H_6$**: The higher the customer's satisfaction, the higher the possibility to conduct word of mouth communication with their out groups.

**$H_7$**: The higher the customer satisfaction, the higher the possibility the individuals who score high on their internal locus of control to communicate their experiences to other people.

**$H_8$**: The higher the customer satisfaction, the higher the possibility the individuals who score high on their external locus of control to communicate their experiences to other people.

**Theoretical Framework**



# CHAPTER III

# RESEARCH METHOD

## 3.1. Research Method

This section will explain the research methodology of this research, especially related with the research design and the process of data collection. This process is conducted to make sure that this research is suitable with the research requirements and that the accuracy of the data and the research findings can be guaranteed.

### 3.1.1. Type of study

The type of this research is basic applied research. This research generates a body of knowledge by trying to comprehend how certain problem can be solved. The primary objective of engaging in basic research is to equip oneself with additional knowledge of certain phenomena and problems based on the previous theories or research in the same or related topic (Sekaran, 2000; 08). In this case, this research will replicate previous study of word of mouth communication and customer satisfaction by combining them in order to investigate the mediating role of individual personality on the influence of customer satisfaction on the in group and out group word of mouth communication in the context of the purchase of shopping product.

## 3.2. Research Subject

The subject of this research is the group of individual who ever consuming the shopping product. Three (3) kind of shopping product will be employed as the object of research; those products are *shoes, cloths* and *bag*.

### 3.2.1. Population

The population of this research is all the consumer of the shopping product in Kodya Jogjakarta. The populations are customers or consumers who have experience or ever consuming the shopping product such as *shoes, cloths and bag.*

### 3.2.2. Sampling Method

This research will be planned to involve 160 respondents (see Appendix 2). The decision regarding the number of the respondents is merely to guarantee the standard from the causality analysis that conducted in simultaneous way. But from those 160 respondents, there is a possibility that not all the sample will be used in the further analysis, since there is a procedure in the research to eliminate the possible outlier from the data, the method that will be used in removing the outlier is by bootstrapping method. While the respondents selections will be done by using convenience sampling. Convenience sampling is a nonprobability sampling design in which information or data for the research are gathered from members of the population who are conveniently accessible to the researcher (Sekaran, 2000: 277). The reason why this type of sampling design was chosen because convenience sampling is most often used during the exploratory phase of a research project and is perhaps the best way of getting some basic information quickly and efficiently.

### 3.3. Research Setting

The setting of this research will take place on the Kodya Jogjakarta. To guaranteed that this research fulfilling the generalizability and representative ness principle of scientific research, the researcher will randomly select several place that located within Kodya Jogjakarta, especially the place where the Jogja people usually spend their leisure time.

### 3.4. Unit of analysis

The consumer decision making process based on the level of involvement can be classified into different groups, which are low involvement decision making process, moderate involvement and high involvement decision making process. Low involvement decision making process happened when the consumers buy the convenience product or daily consumed product such as toothpaste, soap and instant noodle. Moderate or medium involvement happens when the consumers buy a shopping product such as cloths, shoes and bag. While high involvement happens when the consumers buy a specialty product such as car, house and motorcycle. This research will be planned to analyze the role of individual locus of control on the influences of customer satisfaction on the word of mouth communication regarding the purchase of shopping product. So in this research, the unit of analysis is group of people who frequently purchase the shopping product such as cloths, shoes and bag.

### 3.5. Research Variables and Measurement

There are five (5) construct that will be investigated in this research by using six (6) Likert scale. Those six (6) likert scale measurement are as follows:

| | |
|---|---|
| 1 = Strongly disagree | 4 = Somehow Agree |
| 2 = Disagree | 5 = Agree |
| 3 = Somehow disagree | 6 = Strongly agree |

Those five (5) construct were adapted from several relevant literatures. Those 5 construct or variables are as follows (See Appendix 1):

#### 3.5.1. Customer Satisfaction

The customer satisfaction variable will be measured by using three (3) items of questions which is adapted from the research instrument of Johnson et al. (2006). Those three (3) items of questions are as follows:

1. The performance of the product that I bought exceeds my expectation.
2. In overall, I feel satisfied with the product I bought.
3. The product that I bought was the best product compare with other same product.

#### 4. 3.5.2. Internal Locus of Control

The internal locus of control construct was adapted from the research instrument of Lam and Mizerski (2005). This internal locus of control will be measured by using three (3) items of questions, which are:

1. My life is determined by my own actions
2. When I get what I want it is usually because I worked hard for it
3. I can pretty much determine what will happen in my life

### 3.5.3. External Locus of Control

The external locus of control construct was adapted from the research instrument of Lam and Mizerski (2005). This external locus of control will be measured by using three (6) items of questions, which are:

1. To a great extent my life is controlled by accidental happenings
2. When I get what I want it is usually because I am lucky
3. It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad luck
4. I feel like what happens in my life is mostly determined by powerful people
5. My life is chiefly controlled by powerful others
6. People like me have little chance of protecting our personal interests when they conflict with those of strong pressure groups

### 3.5.4. In-Group Word of Mouth Communication

The In-Group word of mouth communication construct was adapted from the research instrument of Lam and Mizerski (2005). This In-Group word of mouth communication will be measured by using four (4) items of questions, which are:

1. I like introducing new brands and products only to my close friends or family
2. I only provide information about new brands and products to my close friends or family

3. I like to seek advice or information only from my close friends or family when making a purchase decision

4. I only gather information about a product before I buy from my close friends or family

### 3.5.5. Out-Group Word of Mouth Communication

The Out-Group word of mouth communication construct was adapted from the research instrument of Lam and Mizerski (2005). This Out-Group word of mouth communication will be measured by using four (4) items of questions, which are:

1. I like to provide people other than my close friends or family with information about new brands or products

2. I share information about new brands and products with people other than my close friends or family

3. I seek out the advice of people other than my close friends or family regarding which brand to buy

4. I like to seek information and advice of people other than my close friends or family before making a purchase decision

### 3.5.6. Demographics variables

Beside those 5 main construct, there will be also a demographics or descriptive variables. These demographics variables are including 5 questions regarding age, gender, income, education and occupation of the respondents. This demographics data will help the researcher in knowing the

background of the respondents and will be used as a description of the sample of this research.

### 3.6. Research Procedures

The research procedure in collecting the data will be done by spreading the questionnaire. To become the respondent of this research, the respondents wall be asking to answer whether they ever consuming the product that will be investigated, in this case the shopping product. If their answer is no, those respondents will be not involved in this research, but if their answer is yes, they will be involved in filling the questionnaire.

### 3.7. Technique of Data Analysis

In answering the research and hypotheses questions, this research will use Structural Equation Modeling by using LISREL 8.30 program. LISREL is a procedure for the analysis of Linear Structural Relations among one or more sets of variables (Gefen, Straub and Boudreau; 2000). It examines the covariance structures of the variables included in the model under consideration. LISREL permits both confirmatory factor analysis and the analysis of path models with multiple sets of data in a simultaneous analysis. Confirmatory factor analysis is a variant of factor analysis where the goal is to test specific theoretical expectations about the structure of a set of measures (Gefen et al. 2000). But before go through to the main analysis using LISREL, there will be 2 preliminary steps which are exploratory data analysis and data screening by using SPSS version 15 software. Exploratory data analysis deals with the demographics variables such as income, age, gender

and so on. The property of EDA is the frequency and percentages of the distribution of the respondent's age, incomes, education, occupations and so on. While Data screening deals with the issues that are resolved after data are collected but before the main data analysis is run. It is time-consuming and sometimes tedious, but consideration and resolution of these issues before the main analysis are fundamental to an honest analysis of data. The bootstrapping method is applied in the data screening process to remove the possible outliers.

Structure equation modeling (SEM) is the multivariate technique combining aspects of multiple regression (examining dependence relationship) and factor analysis (representing unmeasured concepts with multiple variables) to estimate a series of interrelated dependence relationship simultaneously (Gefen et al. 2000). This analytical tool will help the researcher to test the causality relationship from all the variables that will be investigates in simultaneous ways.

There are five steps that commonly used in the application of structural equation modeling (Bollen & Long; 1993). The steps are as follows:

1. Model Specification
2. Identification
3. Estimation
4. Testing fit, and
5. Re-specification

### 3.7.1. Model Specification

Model specification usually begins with the implementation or creation of a path diagram to label and give the name to the variables both observed and latent (unobserved), error terms and residuals and to describe the relationships amongst these components (Smith, P.H.; 2001). In specifying the model by using Lisrel application, the path diagrams usually labeled by using notation, and then specify the matrix mode and type. Model specification in Lisrel can be done in four ways:

- Original LISREL syntax (text) input
- SIMPLIS syntax (text) input
- Graphics (path diagram) input, or
- Interactive, windows-based input.

In this research, the researcher use the original Lisrel syntax input method in specifying the model. The reason is because it is the quickest method for specifying and modifying complex models once the user is familiar with the syntax, even though it is the most complex way to learn (Smith, P.H.; 2001).

The measurement part of the model shown in the figure 3.1 below includes:

- Independent observed variables (or indicators) labeled as CS1 CS2 and CS3, with error represented by **δ1, δ2** and **δ3**. with independent latent (unobserved variables) or exogeneous varaibles labelled as CS (**ξ1**).
- Dependent observed variables (or indicators) labeled as OUTWOM1 OUTWOM2 OUTWOM3 OUTWOM4 INWOM1 INWOM2 INWOM3 INWOM4 ILC1 ILC2 ILC3 ELC1 ELC2 ELC3 ELC4 ELC5 ELC6, with error represented **by ε1 ε2 ε3 ε4 ε5 ε6 ε7 ε8 ε9 ε10 ε11 ε12 ε13 ε14 ε15**

**ε16 ε17**. With dependent latent or unobserved or endogenous variables labeled as OUTWOM (**ή1**) INWOM (**ή2**) ILC (**ή3**) ELC (**ή4**).

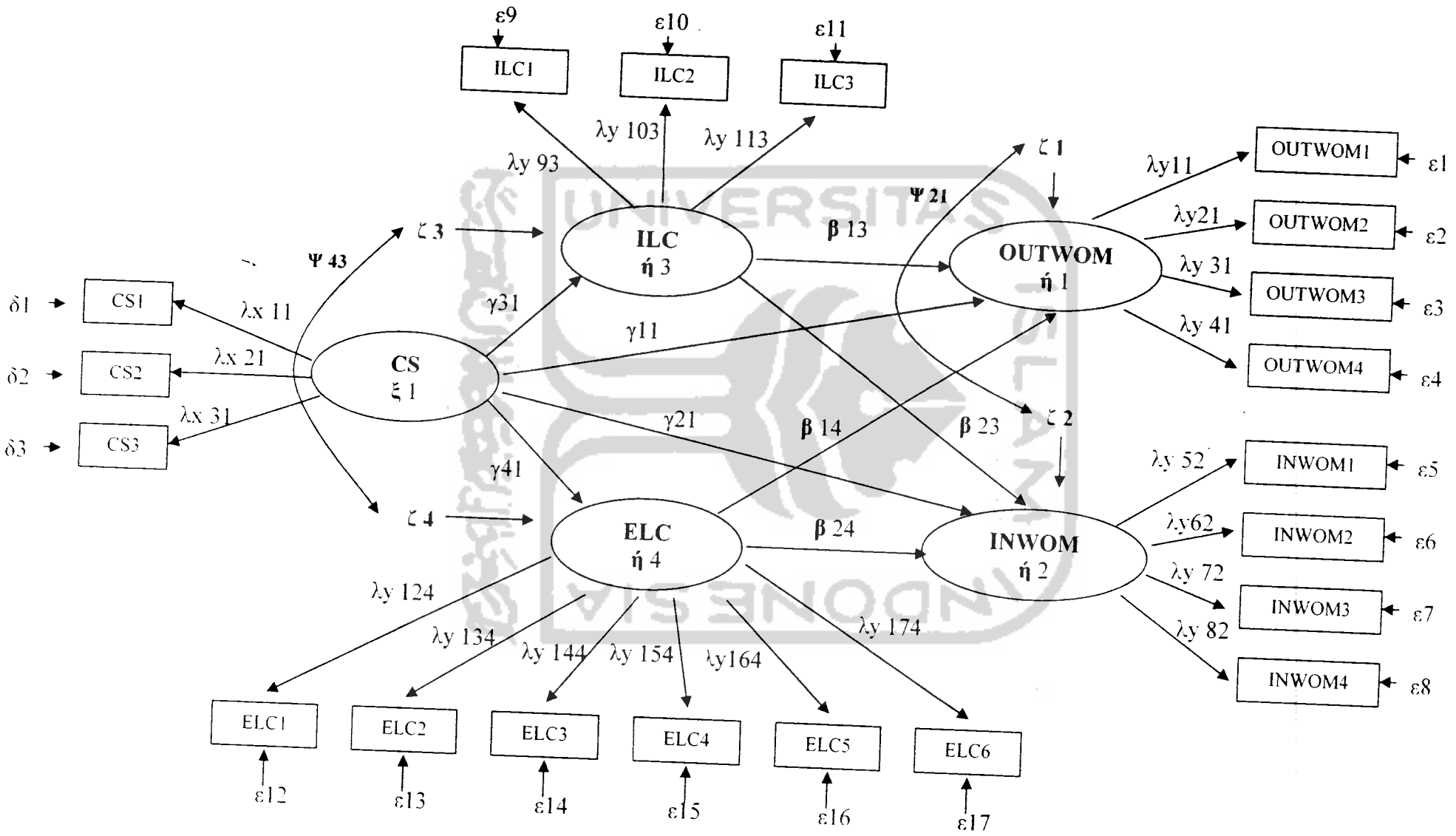
- Factor loading for exogenous variables (**ξ1**) labelled as λx11, λx21, λx31 in the regression of CS1 CS2 CS3 on CS (**ξ1**).
- Factor loading for the endogeneus variables (**ή1, ή2, ή3, ή4**) labelled as λy11, λy21, λy31, λy41, λy52, λy62, λy72, λy82, λy93, λy103, λy113, λy124, λy134, λy144, λy154, λy164, λy174 in the regression of OUTWOM1 OUTWOM2 OUTWOM3 OUTWOM4 on OUTWOM (**ή1**) INWOM1 INWOM2 INWOM3 INWOM4 on INWOM (**ή2**) ILC1 ILC2 ILC3 on ILC (**ή3**) ELC1 ELC2 ELC3 ELC4 ELC5 ELC6 on ELC (**ή4**).
- Varainces of, and covarainces amongst, the measurement error (by **δ1, δ2** and **δ3**) for the independent observed varaibles labelled as $\theta^{(\delta)}11$, as $\theta^{(\delta)}22$, and as $\theta^{(\delta)}33$. and variances of, and covarainces amongst, the measurements error (**by ε1 ε2 ε3 ε4 ε5 ε6 ε7 ε8 ε9 ε10 ε11 ε12 ε13 ε14 ε15 ε16 ε17**) for the dependent observed variables labelled $\theta^{(\varepsilon)}11$, $\theta^{(\varepsilon)}22$, $\theta^{(\varepsilon)}33$, $\theta^{(\varepsilon)}44$, $\theta^{(\varepsilon)}55$, $\theta^{(\varepsilon)}66$, $\theta^{(\varepsilon)}77$, $\theta^{(\varepsilon)}88$, $\theta^{(\varepsilon)}99$, $\theta^{(\varepsilon)}1010$, $\theta^{(\varepsilon)}1111$, $\theta^{(\varepsilon)}1212$, $\theta^{(\varepsilon)}1313$, $\theta^{(\varepsilon)}1414$, $\theta^{(\varepsilon)}1515$, $\theta^{(\varepsilon)}1616$, $\theta^{(\varepsilon)}1717$.

The structural part of the model in figure 3.1 below:

- The regression of **ξ1** on **ή1, ή2, ή3, ή4** represented by the regression coefficients **γ11, γ21, γ31, γ41**.
- Relationship between **ή1, ή2, ή3, ή4** represented by regression coefficient **β** 13, **β** 23, **β** 14, **β** 24.

- Residual terms (being the differences between the actual values of the endogenous variables and the values predicted by the model) represented by the terms **ζ 1, ζ 2, ζ 3, ζ 4.**
- Variances of the residual terms (being the variances in the endogenous variables unaccounted for by the models) and covariaces between them labelled **Ψ 11, Ψ 22, Ψ 33, Ψ 44, Ψ 21, Ψ 43.**

**Figure 3.1 (Generalized full model)**



- Instrumental Variables (IV) and Two-Stage Least Squares (TSLS)
- Generalized Least Squares (GLS)
- Generally Weighted Least Square (WLS) or Asymptotically Distribution Free estimation (ADF)

In this research, the researcher uses the WLS method of estimation.

### 3.7.4. Testing Fit

After the model has been specified, identified and the paramters have been estimated, the next step is to check wheter or not the model fit the data. If the specified model is a reasonable representation of the data, the parameters that are estimated wild yield small values for the discrepancy function.

When the model is correct in the population, will imply that **(N-1)** times the minimum values of the fit function has a $\chi^2$ distribution (with degree of freedoms **(df)** equal to the number of non-redundant elements in the empirical samples variances and covariances **(S)** minus the number of parameters being estimated.

The current study uses the following three types of fits statistics that derived from the minimized discrepancy function. These include:

#### 3.7.4.1. Absolute fit indices

Absolute fit indices is the measure of absolute discrepancy between the matrix of implied variances and covariances to the matrix of sample variances and covaraiances. These fits indices includes:

- **Chi square** ($X^2$) measures to which all residuals in $\Sigma - \Sigma(\theta)$ are zero, while probability value associated with $X^2$ represents the likelihood of obtaining $X^2$ that exceeds the $X^2$ value when $H_0$ is true. Thus the higher

the probability associated with $X^2$ , the closer the fit between the hypothesized model and the perfect fit.

- Root Mean Square Error of Approximation (**RMSEA**) takes into account the error of approximation in the population and asks question "How well would the model, with the unknown but optimally chosen parameter model, fit the population covariance matrix if it were available.

RMSEA < .05 indicates good fit

.05 < RMSEA < .08 indicates reasonable error

.08 < RMSEA < .10 indicates mediocre fit

RMSEA > .10 indicates poor fit

- Root Mean Square Residual (**RMS**) represents the average residual value derived from the shifting of var.-cov. matrix for the hypothesized model to the var.-cov. matrix in the sample data. However, because these residuals are relative to the size of the observed var and cov, they are difficult to interpret. Thus they are best interpreted in the metric of the correlation matrix. The standardized RMR therefore represents the average value across all standardized residuals, and ranges from 0 to Standardized RMR < .5 indicates a well fitting model.
- The Goodness-of-Fit Index (**GFI**) and Adjusted Goodness of Fit Index (**AGFI**) can be classified as absolute indices of fit because they basically compare the hypothesized model with no model at all. Values GFI & AGFI close to 1 indicate good fit.

### 3.7.4.2. Incremental or Comparative fit indices

Incremental fit indices measure how much better the fitted model is compared to some baseline model. It is often that baseline model used for comparison is the null model (independence model) in which there is no relationship amongst the varaibles are proposed. In this case, the incremental fit index is a measure of how much better the model that assumes atleast some relationship is compared to a model with no relationship. These indices lies between zero (0) and one (1) where zero indicates that the specified model is no better than the independence model and a value of one indicates that the specified model is a perfect fit. These indices includes:

- Parsimony Goodness of Fit Index (**PGFI**) is to address the issue of parsimony in SEM. Typically, parsimony-based indices have lower values than threshold level generally perceived as acceptable for other normed indices of fit. However, it is suggested that nonsignificant $\chi^2$ statistics and goodness of fit indices in the range of .90, accompanied by parsimonious fit indices in the range of .50 are not unexpected.
- Normal Fit Index (**NFI**) and Comparative Fit Index (**CFI**) compare the hypothesized model with the independence one. However, **CFI** is better indices than **NFI**, because it takes sample size into account to avoid a tendency to underestimate in small sample. **NFI & CFI Values of > .90** indicate an acceptable fit to the data. Non-Normed Fit Index (**NNFI**) takes the complexity of the model into account in comparison of the hypothesized model with the independence model. However, because

**NNFI** is not normed, its value can extend beyond the range of 0 to 1, and thus is difficult to interpret.

- Incremental Fit Index (**IFI**) addresses the issues of parsimony and sample size that were known associated with **NFI**. As such, its computation is basically the same as the **NFI**, except that degree of freedom take into account. Thus its acceptable criteria is also the same as **NFI.** Relative Fit Index (**RFI**) is algebraically equivalent to **CFI**; as with **CFI,** coefficient values range from 0 to 1, with higher value indicating superior fit.
- Parsimony Normed Fit Index (**PNFI**) addresses the issues of parsimony, and is tied to the **NFI** in the sense that **NFI** is multiplied by the parsimony ratio.

**3.7.4.3. Indices of model parsimony**

There is a disadvantage with the chis square statistic that it can be made small (to reflect a good model) by simply adding more pararmeters to the model. This can make the inexperienced researcher get the fit model by adding parameters to their model until they get small value of chi square and then claim that the data is fit with the model.

The more parsimonious the model (in terms of estimating as few parameters as possible), the more likely it is that the model could be generalized to the population. The indices of parsimony that usually used as a index criteria are:

- Akaike information criterion (AIC) and Consistent akaike information criterion (CAIC), based on this model parsimony criteria, the model can be classified as parsimony and good model when the value of AIC for

independence, model and saturated are small compared with the value of CAIC for independence, model and saturated.

### 3.7.5. Respecification

A model is correctly specified when it reproduces the sample covariance matrix well. Such a model can be described as a true model (Schumacher and Lomax, 1996). The hypothesized model is misspecified when it is not consistent with the true model and reproduces the covariance matrix poorly.

Schumacer and Lomax (1996) describe several procedures for performing a specifications search including an examination of the critical ratio (t-values), the satndardised residuals and modifications indices.

**Critical ratio (t-value)**

As a starting point, the researcher should examine the statistical significance of each estimated parameter in the hypothesized model. A simple procedure is to compare the ratio of the parameter estimate with its estimated standard error. This critical ratio can be interpreted as a t-value. Ideally, all parameter estimates should be in the expected direction and statistically different from zero (that is, the t-value is larger than ± 1.96). The researcher could begin the process of model re-specification by fixing all the non-significant parameters to zero in a revised model. However, several additional issues should be considered before the decision to re-specify the model is made. The researcher should consider the size of the sample when interpreting the statistical significance of the parameter estimates. Some parameter estimates may not be significant in smaller samples, whereas all estimated parameters could be significant or tend towards significance

in larger samples. Moreover, the researcher needs to consider the theoretical rationale for the estimated parameters. A cautious approach would be to retain non-significant parameters that make strong theoretical sense.

**Standardized residuals**

Examining the standardized residuals is perhaps the soundest method of identifying the source of model misspecification. The fitted residuals represent the difference between the sample covariance matrix and the model predicted covariance matrix. Because the fitted residuals can be difficult to interpret, however, researchers often examine the standardized residuals instead. In general, large standardized residuals overall are indicative of a poorly fitting model, whereas large values for one variable suggest misspecification for that variable only. Large standardized residuals (for example, larger than 2.58) indicate that a particular covariance is not well reproduced by the hypothesized model. By carefully examining the standardized residuals, the researcher can identify which variable or set of variables is responsible for model misspecification. When a problematic variable is identified, the researcher may proceed by estimating additional parameters (for example, an error covariance) or by deleting that variable from the model. Again, any additional parameters should make sense to the researcher.

**Modification indices**

Another aid in assessing the potential source of model misspecification is the modification indices. Indeed, the modification indices are intuitively appealing and have been described as the most useful way to re-specify the hypothesized

model (Joreskog and Sorbom 1996). A modification index is calculated for each non-free parameter. Essentially, a modification index represents the decrease in the value of the chi-square when the parameter is estimated in a revised model. A modification index value greater than 3.84 suggests that the chi-square would be significantly reduced when the corresponding parameter is estimated. Based on this guideline, the researcher would proceed by estimating the parameters associated with the largest modification indices. This approach may work well in practice and allow the researcher to better approximate the true model. However, few studies have systematically examined the use of modification indices and the researcher should always consider the theoretical rationale for the estimated parameter.

# CHAPTER IV

# RESEARCH FINDINGS, DISCUSSION, AND IMPLICATIONS

## 4.1 Overview of the Strategy Analyses

The current study uses Structural Equation Modeling (SEM) to analyze the proposed research model developed in Chapter III. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis testing) approach to multivariate analysis of structural theory bearing on some phenomena (Byrne, 1998). It can overcome many problems resulting from conventional analytical techniques such as multiple and multivariate regression, recursive path analysis, non-recursive econometric modeling, analysis of variance, and factor analysis (Holmes-Smith, 2001). It specifically can be used to (Holmes-Smith, 2001: page 4):

- estimate relationships amongst dependent (or outcome) variables,
- estimate relationships amongst latent constructs underlying observed variables
- estimate the nature of measurement error associated with the observed variables,
- allow unequal weightings for multiple indicators of a latent construct,
- estimate reliability and construct validity of measurements,
- perform new tests of fit for systems of equations, and
- Estimate higher-order factor analyses where no observed indicators of the higher-order factors are available.

### 4.2. Data screening

In this preliminary stages of data screening process, the researcher trying to find the missing values from the data. But after precisely see the data, the researcher find that there are no missing values in the main data which is consists of 160 respondents, 20 observed variables, 5 unobserved variables and 5 demographics variables.

Since there is no missing values in the main data, the researcher that go to the next steps in the data screening processes, which is finding that there will be a possible outliers in the data which than can destroy the goodness of the data. An outlier is a case with such an extreme value on one variable or such a strange combination of score on two or more variables that they distort statistics

Reasons for the presence of an outlier:

- Incorrect data entry
- Failure to specify the missing value codes in computer syntax
- The outlier is not a member of the intended population
- It is from the intended population but the distribution for the variable has more extreme values than a normal distribution

In the process of finding the outliers, the researcher use the bootstrapping method by manually see and deleting the case which contains possible outliers. In the process of bootstrapping, the researcher finds that there are 35 cases from 160 cases which contain possible outlier. The treatment that the researcher uses to the 35 cases which show an indication as the outlier is by deleting those 35 cases from the main data in order to reduce the influences of the outlier which can

destroy the goodness of the data. This method of deleting the case is acceptable since those 35 cases are possibly from the cases which are not from the intended population. After removing 35 cases, the number of samples sizes reduced from 160 minus 35, which is becomes 125 cases. At the end this 125 cases will be used in the exploratory data analysis and in the main analysis by using LISREL software. The list of 35 outliers can be seen in the appendix C.

### 4.3. The Demographic Characteristics (Exploratory Data analysis)

This research regarding the influences of customer satisfaction on word of mouth communication, a study of the roles of individual locus of control on the purchasing of the shopping product was conducted in Kodya Jogjakarta, Jogjakarta Special Province, Indonesia. The sample was taken from 125 respondents of the consumer of the shopping product such as Cloths, shoes and bag. The distribution and the description of the respondents will be described in tables and graphs as follows:

#### 4.3.1. Respondent Age

**Table 4.1**

**The Distribution Frequency of the Respondents' Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | kurang dari 20 thn | 4 | 3.2 | 3.2 | 3.2 |
| | 20-25 thn | 71 | 56.8 | 56.8 | 60.0 |
| | 26-30 thn | 25 | 20.0 | 20.0 | 80.0 |
| | 31-35 thn | 12 | 9.6 | 9.6 | 89.6 |
| | 36-40 thn | 5 | 4.0 | 4.0 | 93.6 |
| | lebih dari 40 thn | 8 | 6.4 | 6.4 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

**Graph 4.1**

**The Distribution Frequency of Respondent's Age**

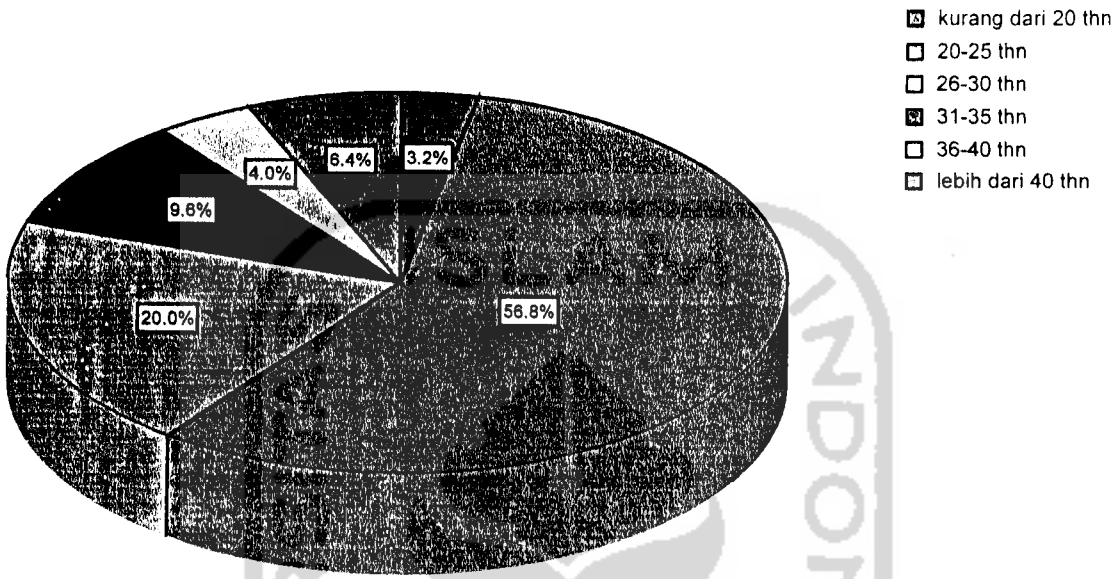



Table 4.1 and Graph 4.1 shows and describes that there are 71 respondents or (56, 80 %) who have age in between 20 and 25 years, 25 respondents or (20, 00 %) have age in between 26 and 30 years. This means that the majority of the respondents of this research is the respondents in the age of 20 to 25 years. While there are 4 respondents or (3, 20 %) who have age below 20 years, this group of respondents is the minority respondent of this research.

### 4.3.2. Respondent Gender

**Table 4.2**
**The Distribution Frequency of the Respondents' Gender**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Laki laki | 70 | 56.0 | 56.0 | 56.0 |
| | Perempuan | 55 | 44.0 | 44.0 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Source: Primary Data (computed by SPSS), 2007-06-01

**Graph 4.2**

**The Distribution Frequency of Respondent's Gender**


From the Table 4.2 and graph 4.2, it clearly desribes that there are 70 respondents or (56,00 %) who have male gender and 55 or (44,00 %) who have female gender. This menas that most of the respondents are male.

### 4.3.3. Respondent Educational Background

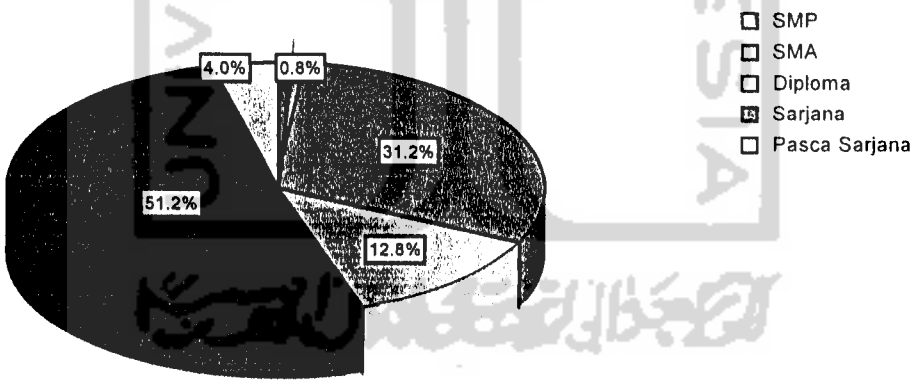
**Table 4.3**
**The Distribution Frequency of the Respondents' Education**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | SMP | 1 | .8 | .8 | .8 |
| | SMA | 39 | 31.2 | 31.2 | 32.0 |
| | Diploma | 16 | 12.8 | 12.8 | 44.8 |
| | Sarjana | 64 | 51.2 | 51.2 | 96.0 |
| | Pasca Sarjana | 5 | 4.0 | 4.0 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

Source: Primary Data (computed by SPSS), 2007-06-13

**Graph 4.3**

**The Distribution Frequency of Respondent's Education**




The Table 4.3 and Graph 4.3 show and decribe that there are 64 respondents or (51,20%) who have S1 last educational background and 39 respondents or (31,2%) who have SMA last educational background. It means that the majority of the respondents have S1 last educational background.

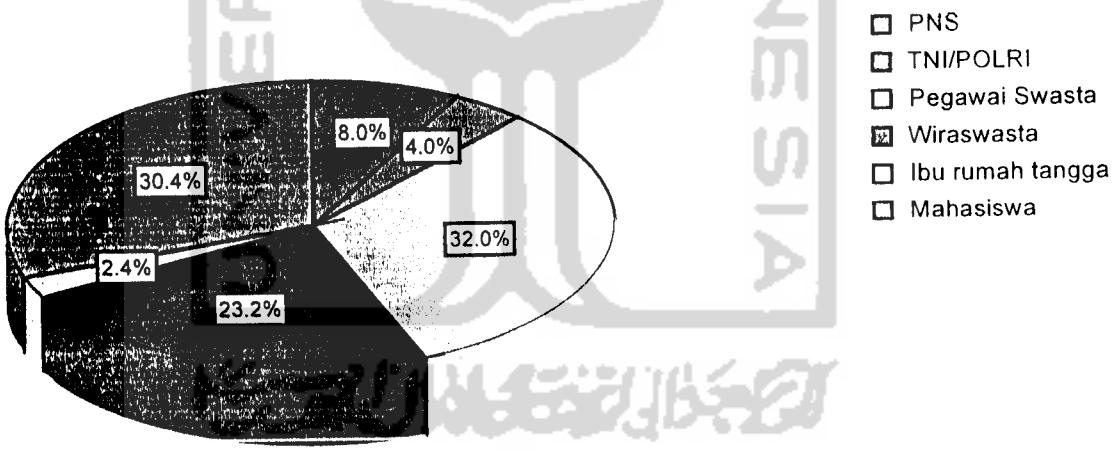
### 4.3.4. Respondent Occupational Background

**Table 4.4**
**The Distribution Frequency of Respondent's Occupation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | PNS | 10 | 8.0 | 8.0 | 8.0 |
| | TNI/POLRI | 5 | 4.0 | 4.0 | 12.0 |
| | Pegawai Swasta | 40 | 32.0 | 32.0 | 44.0 |
| | Wiraswasta | 29 | 23.2 | 23.2 | 67.2 |
| | Ibu rumah tangga | 3 | 2.4 | 2.4 | 69.6 |
| | Mahasiswa | 38 | 30.4 | 30.4 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

**Graph 4.4**

**The Distribution Frequency of Respondent's Occupation**




The Table 4.4 and Graph 4.4 show and decribe that there are 40 respondents or (32,00%) who work as non-government official and 38 respondents or (30,40%) who work as a Student, and also there are 29 respondents (23,20%) who work as an entrepreneur. It means that the majority of the respondents have occupation as a non-government official

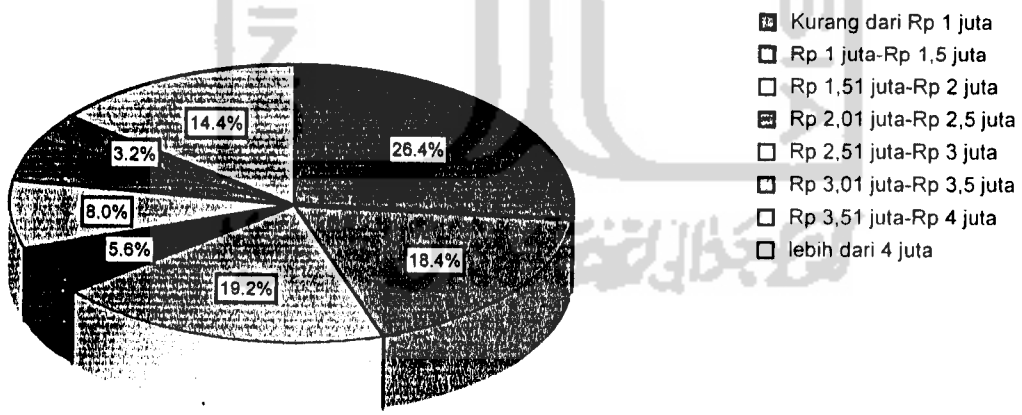
### 4.3.5. Respondent Income Background

**Table 4.5**
**The Distribution Frequency of Respondent's Income**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Kurang dari Rp 1 juta | 33 | 26.4 | 26.4 | 26.4 |
| | Rp 1 juta-Rp 1,5 juta | 23 | 18.4 | 18.4 | 44.8 |
| | Rp 1,51 juta-Rp 2 juta | 24 | 19.2 | 19.2 | 64.0 |
| | Rp 2,01 juta-Rp 2,5 juta | 7 | 5.6 | 5.6 | 69.6 |
| | Rp 2,51 juta-Rp 3 juta | 10 | 8.0 | 8.0 | 77.6 |
| | Rp 3,01 juta-Rp 3,5 juta | 6 | 4.8 | 4.8 | 82.4 |
| | Rp 3,51 juta-Rp 4 juta | 4 | 3.2 | 3.2 | 85.6 |
| | lebih dari 4 juta | 18 | 14.4 | 14.4 | 100.0 |
| | Total | 125 | 100.0 | 100.0 | |

**Graph 4.5**

**The Distribution Frequency of Respondent's Income**



The Table 4.5 and Graph 4.5 show and decribe that there are 33 respondents or (26,40%) who have income range less than 1 million Ruphias, 23 respondents or (18,40%) who have income range between 1 milllion to 1,5 million Ruphias, and 24 respondents or (19,20%) who have income range between 1,51 millions to 2 millions ruphias. It can be concluded that most of the respondents of this research have an income belowe 1 millions ruphias.

### 4.4. Overview of Structure Equation Modeling (SEM)

SEM typically consists of two models: the measurement model and the structural equation model (Schumaker and Lomax, 1996). The measurement model specifies how the hypothetical constructs are measured in terms of the observed variables and describes the measurement properties (i.e. reliability and validity). On the other hand, the structural equation model defines the patterns of relationship amongst the constructs and describes the amount of unexplained variance.

The current study uses LISREL 8.30 and employs one-congeneric measurement models proposed by Holmes-Smith and Row (1994) to analyze the research model. This is because the observed variables of the study are ordinal in nature. Such variables must be analyzed based on polychoric or polyserial correlation matrix using weighted least squares estimate procedures that, in turn, requires asymptotic covariance matrix. This procedure must be taken not only to eliminate biased estimates (Joreskog and Sorbom, 1996a), but also to overcome non-normal data (Holmes-Smith and Rowe, 1994). However, these matrices, especially asymptotic covariance matrix calls for a large sample of data. Joreskog and Sorbom (1996b) reveal that the minimum sample size required for this matrix is

equal to k(k – 1) : 2, where k is the number of observed variables. Since the current study involves 20 observed variables, the minimum sample size should be 190, deriving from 20(20 – 1) : 2, to enable the researcher to use the asymptotic covariance matrix.

However, the sample size of the study is only 125, which is much lower than the minimum sample size required for developing the asymptotic covariance matrix. To overcome this problem, the researcher uses one-congeneric measurement. It is a means of data reduction to obtain a manageable number of composite variables, which in turn can be used in the subsequent analysis of a structural equation model. Holmes-Smith and Rowe (1994) further advise that the observed variables used in the analysis must be reliable and accurate in representing the underlying constructs; otherwise, the resulting composite scales lack validity.

In line with the work of Holmes-Smith and Rowe (1994), this study takes the following steps in analyzing the research model. Firstly, the researcher performs confirmatory factor analyses for the measurement models or constructs. At this stage, its reliability and validity of each construct are evaluated. Secondly, the researcher reduces the number of observed variables of each construct into one composite variable. By converting the observed variables of each construct into a composite variable, the need of large sample size can be reduced to a manageable number. Finally, by using those new composite variables, structural equation model analysis is performed to test the research model and hypotheses. The list of 125 samples used in this research can be seen in the Appendix B (160 samples minus 35 removed outlier).

### 4.5 The Analyses of Measurement Model (Confirmatory Factors analysis)

The primary interest at this stage of analysis is to evaluate the strength of the regression paths from constructs to their observed variables. In other words, this analysis concerns with the extent to which the observed variables are generated by the underlying latent constructs. Since the observed variables of the constructs of the current study were determined before hand, a series of confirmatory factor analyses are performed to measure the link between each construct and its observed variables.

As mentioned earlier, these analyses are based on polychoric correlation matrix and asymptotic covariance matrix. Since this study involves five constructs, five pairs of matrices were developed. In addition to the matrix development and consistent with Byrne (1998), the current study carries out the following four steps in evaluating the fit of the measurement model: the assessment of the parameter estimates, the assessments of goodness of fit of the model, the respecification of the model, the assessment of the reliability and validity of the constructs. For the detailed confirmatory factor analysis see Appendix D.

#### 4.5.1. The Assessments of Parameter Estimates

The initial step in assessing the fit of individual parameters in a model is to determine the feasibility of their estimates values. The assessment focuses on whether the parameter estimates are in their admissible range or not. These include scrutiny of the positive-definite of the correlation matrix and the values of the correlation and variance. Non-positive definite correlation matrix, correlation > 1, and negative variance are clear indicators of whether the model is wrong or

the input matrix lacks sufficient information. If such problems exist in the analyses, they should be fixed to provide a proper interpretation of the results. Non-positive definite correlation matrix, for example, may rise from a linear dependency or collinearity of one variable to another. To fix this problem, Wothke (1993) suggests that variable(s) recognized as redundant(s) should be removed from the analysis. Meanwhile, to resolve any negative variances, Hair, Anderson, Tatham, and Black (1998) recommend that those measurement errors should be set on a small positive value. Fortunately, the researcher did not find any of those problems when performing the confirmatory factor analysis for each construct.

The second and final assessment of the parameter estimates is to evaluate their statistical significances and reliabilities. In this case, the evaluation focuses on the *t* values of the parameters, which represent the parameter estimates divided by their standard errors, and square multiple correlation ($R^2$) of the observe variables. Holmes-Smith (2001) reveals that based on a level of $\alpha = 0.05$, parameters, which have *t* values $\geq 1.96$ are considered to be significant. Non-significant parameters, where their *t* values $< 1.96$, therefore, should be removed from the model. Similarly, Holmes-Smith (2001) also asserts that an observed variable is reliable when its $R^2$ exceeds 0.50, which is roughly equivalent to a standardized loading of 0.70. Considering that the use of one congeneric measurement models requires a reliable observed variable in representing the underlying construct, the researcher removed any observed variables that their $R^2$ are lower than 0.50 or their standardized loading are lower than 0.70.

Based on the above criteria, seven observed variables excluded for further analyses while the other thirteen are maintained in the study. Table 5.1. below shows the detail of these variables and their underlying constructs. In addition, all of the thirteenth observed variables used in the study are statistically significant and reliable in representing their underlying constructs. Their standardized loadings and *t* values range from 0.71 to 0.91 and from 9.99 to 25.33 respectively. In term of $R^2$, ranging from 0.51 to .82. These evaluations indicate that the links between the observed (measurement) variables and their underlying constructs are very strong and reliable. Table 4.6 below details the standardized loadings, standard errors, *t* values, and $R^2$.

**Table 4. 6. Name and Number Variables and Their Underlying Constructs Excluded and Used in the Study**

| Name of Constructs | Name of Variables | | Number of Variables | |
|---|---|---|---|---|
| | Excluded from the | Used in the Study | Excluded | Used |
| Customer satisfaction (CS) | - | CS1, CS2 and CS3 | - | 3 |
| Internal Locus of Control (ILC) | ILC3 | ILC1 and ILC2 | 1 | 2 |
| External Locus of Control (ELC) | ELC1, ELC2,ELC3 and ELC6 | ELC4 and ELC5 | 4 | 2 |
| In-Group Word of Mouth Communication (INWOM) | INWOM1 and INWOM3 | INWOM2 and INWOM4 | 2 | 2 |
| Out-Group Word of Mouth Communication (OUTWOM) | - | OUTWOM1,OUTWOM2, OUTWOM3 and OUTWOM4 | - | 4 |
| **Total** | | | 7 | 13 |

**Table 4. 7. The Factor Loadings, *t* values, and Errors of the Measurement Parameters**

| Items | Standardized Loadings | Standard Error of Estimates | *t*-values | $R^2$ |
|---|---|---|---|---|
| **Customer Satisfaction (CS):** | | | | |
| CS1 | .79 | .05 | 14.32 | .62 |
| CS2 | .72 | .06 | 11.26 | .52 |
| CS3 | .71 | .07 | 9.99 | .51 |
| **Internal Locus of Control (ILC):** | | | | |
| ILC1 | .79 | .06 | 12.57 | .62 |
| ILC2 | .79 | .06 | 12.57 | .62 |
| **External Locus of Control (ELC):** | | | | |
| ELC4 | .88 | .05 | 18.27 | .77 |
| ELC5 | .88 | .05 | 18.27 | .77 |
| **In-Group WOM (INWOM):** | | | | |
| INWOM2 | .73 | .06 | 11.75 | .53 |
| INWOM4 | .73 | .06 | 11.75 | .53 |
| **Out-Group WOM (OUTWOM):** | | | | |
| OUTWOM1 | .77 | .07 | 10.80 | .60 |
| OUTWOM2 | .91 | .04 | 21.79 | .82 |
| OUTWOM3 | .88 | .04 | 23.75 | .77 |
| OUTWOM4 | .88 | .03 | 25.33 | .78 |

*t*

### 4.5.2. The Assessments of Goodness of Fit of the Model

The second step in evaluating the measurement model is assessing its goodness of fit. For this purpose, LISREL 8.30 provides a number of goodness of fit indices. However, as suggested by Byrne (1998), the current study uses the following major indices to evaluate the goodness of fit of the model. These include the $\chi^2$ test, Normed $\chi^2$ test, root mean square error of approximation (RMSEA), goodness of fit (GFI), adjusted goodness of fit (AGFI), and comparative fit index (CFI), all of which are described briefly below.

**The Chi Square ($\chi^2$) and Normed $\chi^2$ Tests**

This test measures the closeness between the population covariance matrix $\Sigma$, and the covariance matrix implied by the model $\Sigma(\theta)$. A non-significant $\chi^2$ indicates that there is no significant difference between the two matrices. Therefore, non-significant $\chi^2$ demonstrates that the model fits the data in the sense that the model can reproduce the population matrix (Kelloway, 1998). However, Joreskog and Sorbom (1996a) point out that a large $\chi^2$ value is a common finding. They propose that it may be more appropriate to use $\chi^2$ as a goodness of fit (or badness of fit) measure, instead of test statistic, that is large $\chi^2$ indicates a bad fit model while small $\chi^2$ represents a good fit one. In this case, the degree of freedom can serve as a standard to assess whether the $\chi^2$ is large or small. Adjusting the $\chi^2$ with its degree of freedom is termed as normed $\chi^2$ measure. Normed $\chi^2$ is the ratio of the $\chi^2$ divided by the degree of freedom. A good fit model must demonstrate normed $\chi^2$ greater than 1.00 but less than 2.00. However, the ratio between 2.00 and 3.00

indicates reasonable fit whereas the ratio less than 1.00 represents overfit (Holmes-Smith, 2001).

Nevertheless, the $\chi^2$ test is very sensitive to the sample size differences. As a sample size increases, the $\chi^2$ test tends to be significant. On the other hand, when the sample size is small, the test inclines to be insignificant. With a sample size between 100 and 200, the use of this test can be appropriate, but the significance of the test becomes less reliable for sample sizes outside this range (Hair et al., 1998). This indicates that the $\chi^2$ test should be used in combination with other measures of fit.

**The Root Mean Square Error of Approximation (RMSEA)**

RMSEA is based on the analysis of residuals, with smaller values indicating a better fit to the data. This measure endeavors to remedy for the tendency of $\chi^2$ test to reject any model with a large sample. Recently, it has been recognized as one of the most informative criteria in covariance structure modeling (Byrne, 1998). RMSEA is the discrepancy per degree of freedom, which is measured in terms of the population, not only in the sample used for estimation (Hair, et al., 1998). Error approximation is relevant to the question, "How well would the model, with unknown, but optimally chosen, parameters values fit the population covariance matrix if it were available?" and it does not depend on sample size (Browne and Cudeck, 1993). RMSEA, therefore, measures the error discrepancy per degree of freedom, which make it sensitive to the number of estimated parameters in the model.

Based on the existing relevant literatures, Byrne (1998) summarizes the acceptable level of a model based on this measure as follows: values of RMSEA less than 0.05 indicate a good fit; values ranging from 0.05 to 0.08 represent a reasonable error of approximation; values between 0.08 and .10 point to a mediocre fit; and those greater than 0.10 indicate a poor fit.

**The Root Mean Square Residual (RMS)**

Root Mean Square Residual (**RMS**) represents the average residual value derived from the shifting of var.-cov. matrix for the hypothesized model to the var.-cov. matrix in the sample data. However, because these residuals are relative to the size of the observed var and cov, they are difficult to interpret. Thus they are best interpreted in the metric of the correlation matrix. The standardized RMR therefore represents the average value across all standardized residuals, and ranges from 0 to Standardized RMR < .5 indicates a well fitting model.

**The Akaike Information Criterion (AIC) and Consistent akaike information criterion (CAIC)**

This goodness of index statistics is related to the parsimonious aspect of the model. The more parsimonious the model (in terms of estimating as few parameters as possible), the more likely it is that the model could be generalized to the population. Akaike information criterion (AIC) and Consistent akaike information criterion (CAIC), based on this model parsimony criteria, the model can be classified as parsimony and good model when the value of AIC for independence, model and saturated are small compared with the value of CAIC for independence, model and saturated.

**The Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI)**

The GFI is based on a ratio of the sum of the squared discrepancies between the observed and reproduced matrices to the observed variance. Unlike the GFI, the AGFI takes into account the number of degree of freedom; hence it addresses the parsimony's issue by penalizing the insertion of additional parameters. The GFI and AGFI are absolute indices, because they compare the hypothesized model with no model at all (Byrne, 1998). Their values range from zero to one, with values exceeding 0.90 indicating a good fit model (Joreskog and Sorbom, 1996a).

**The Comparative Fit Index (CFI)**

In contrast to the GFI and AGFI, the CFI is based on the comparison of the hypothesized model against some standard, typically an independent or null model. The CFI is one of incremental indices that measures how much better the fitted model is compared with the independent or the null model; hence it provides a measure of complete covariance in the data. Its value ranges from zero to one. Good fit models should have CFI greater than 0.95, although values greater than 0.90 indicate a reasonable fit (Holmes-Smith, 2001).

In addition to CFI, LISREL output reports the other incremental indices such as the Normed Fit Index (NFI) and the Non-Normed Fit Index (NNFI). However, (Bentler, 1990) suggests that the CFI should be the index of choice. This is because, unlike the CFI, the NFI does not take sample size into account and this, in turn, leads to a tendency to underestimate fit in small sample. On the other hand, although the NNFI takes the complexity of the model into account in

comparing the hypothesized model with the independent model, it is not normed measure. This causes its value to extend beyond the range of zero to one, and, therefore, makes it difficult to interpret.

Based on the above criteria, four out of the five of the constructs in the current study, have a perfect goodness of fit. The results of their initial model reveal that their $\chi^2$ values are zero with probabilities equal to one. Their RMSEA values are also zero. This indicates that the models are well fitting. While one of the construct which is OUTWOM (out-group word of mouth communication) generates values of goodness of fit as follows Chi-Square ($\chi^2$)= 3.83 with probability = 0.14, Normed $\chi^2$ = 1.9; RMSEA = 0.08; GFI = 1.0; AGFI = 0.98; and CFI = 1.0. These values are above of their minimum acceptable level, indicating this construct is a good fitting model; even it is not a perfect one.

**4. 5. 3. The Respecification of the Model**

A model is correctly specified when it reproduces the sample covariance matrix well. Such a model can be described as a true model (Schumacher and Lomax, 1996). The hypothesized model is misspecified when it is not consistent with the true model and reproduces the covariance matrix poorly. In relation with the misspecified model LISREL provides a guidance termed as modification indices (MIs) to evaluate the potential source of the model misspecification. The MIs are measures associated with the fixed and constrained parameters of the model. Each fixed and constraint parameter, modification index (MI) represents a measure of predicted decreases in the $\chi^2$ if a single parameter is estimated in a revised model (Joreskog and Sorbom, 1996). An MI value greater than 3.84 suggests that the $\chi^2$

would be significantly reduced when the corresponding parameter is estimated. In addition to MI, LISREL also provides values of an expected change for each MI. These values are reported in a separate matrix following the MI values. The values represent the predicted estimated change, either in positive or negative direction, for each fixed parameter in the model. However, although MI can facilitate the researcher to improve the fit of the model, its use is only recommended only when relaxing a parameter makes sense from a substantive point of view, empirical rationale, or both (Joreskog and Sorbom, 1996). Moreover, one should consider whether or not the respecified model leads to an over-fitted model. An over-fitted model may arise from the inclusion of some parameters that: (a) are fragile in the sense representing weak effects that are not likely replicable, (b) lead to a significant inflation of standard errors, and (c) influence primary parameters in the model, albeit their own substantive meaningfulness is somewhat equivocal (Byrne, 1998: page 125).

However, based on the above minimum criteria for model respecification, all of the five construct used in this research is already above the range for the specification. So there is no respecification in this phase.

**4. 5. 4. The Reliability and Validity of the Constructs**

Reliability and validity are separate but closely related (Holmes-Smith, 2001). While reliability can be defined as the extent to which a set of two or more indicators share in their measurement of a construct, validity relates to the ability of an indicator to measure accurately the construct of the study (Hair et al., 1998). It is important to note that reliability does not guarantee validity, and vice versa

(Hair et al., 1998; Holmes-Smith, 2001). This means that an indicator may be consistent (reliable) but not accurate (valid), or otherwise, it may be accurate but not consistent.

In the structural equation modeling, there are some test statistics that can be used to measure the construct reliability. These include squared multiple correlations ($R^2$) of each indicator, composite reliability, and variance extracted. LISREL output supplies the $R^2$ of each indicator. Holmes-Smith (2001) reveals that as a general rule, constructs are reliable when $R^2$ of their indicators exceeds 0.50; their composite reliabilities are greater than 0.70; and their variance extracted are greater than 0.50. The composite reliability and variance extracted can be calculated using Fornell and Larker's (1981) formulas as follows:

$$\text{Composite Reliability} = \frac{(\Sigma\lambda_i)^2}{(\Sigma\lambda_i)^2 + \Sigma\varepsilon_i}$$

$$\text{Variance Extracted} = \frac{\Sigma\lambda_i^2}{\Sigma\lambda_i^2 + \Sigma\varepsilon_i}$$

where $\lambda_i$ = the standardized loading of each indicator (observed variable)

$\varepsilon_i$ = the error variance associated with each indicator

Based on the above formulas, the reliabilities of the constructs used in the current study can be described in the following table:

**Table 4. 8. The Reliabilities of the Final Measurement Model**

| Variable Name | $\lambda_i$ | $\varepsilon_i$ | Composite Reliability | Variance Extracted |
|---|---|---|---|---|
| **Customer Satisfaction (CS):** | | | .78 | .55 |
| CS1 | .79 | .38 | | |
| CS2 | .72 | .48 | | |
| CS3 | .71 | .49 | | |
| **Internal Locus of Control (ILC):** | | | .77 | .62 |
| ILC1 | .79 | .38 | | |
| ILC2 | .79 | .38 | | |
| **External Locus of Control (ELC):** | | | .87 | .77 |
| ELC4 | .88 | .23 | | |
| ELC5 | .88 | .23 | | |
| **In-Group WOM (INWOM):** | | | .70 | .53 |
| INWOM2 | .73 | .47 | | |
| INWOM4 | .73 | .47 | | |
| **Out-Group WOM (OUTWOM):** | | | .92 | .74 |
| OUTWOM1 | .77 | .40 | | |
| OUTWOM2 | .91 | .18 | | |
| OUTWOM3 | .88 | .23 | | |
| OUTWOM4 | .88 | .22 | | |

### 4. 5. 5 Conclusion

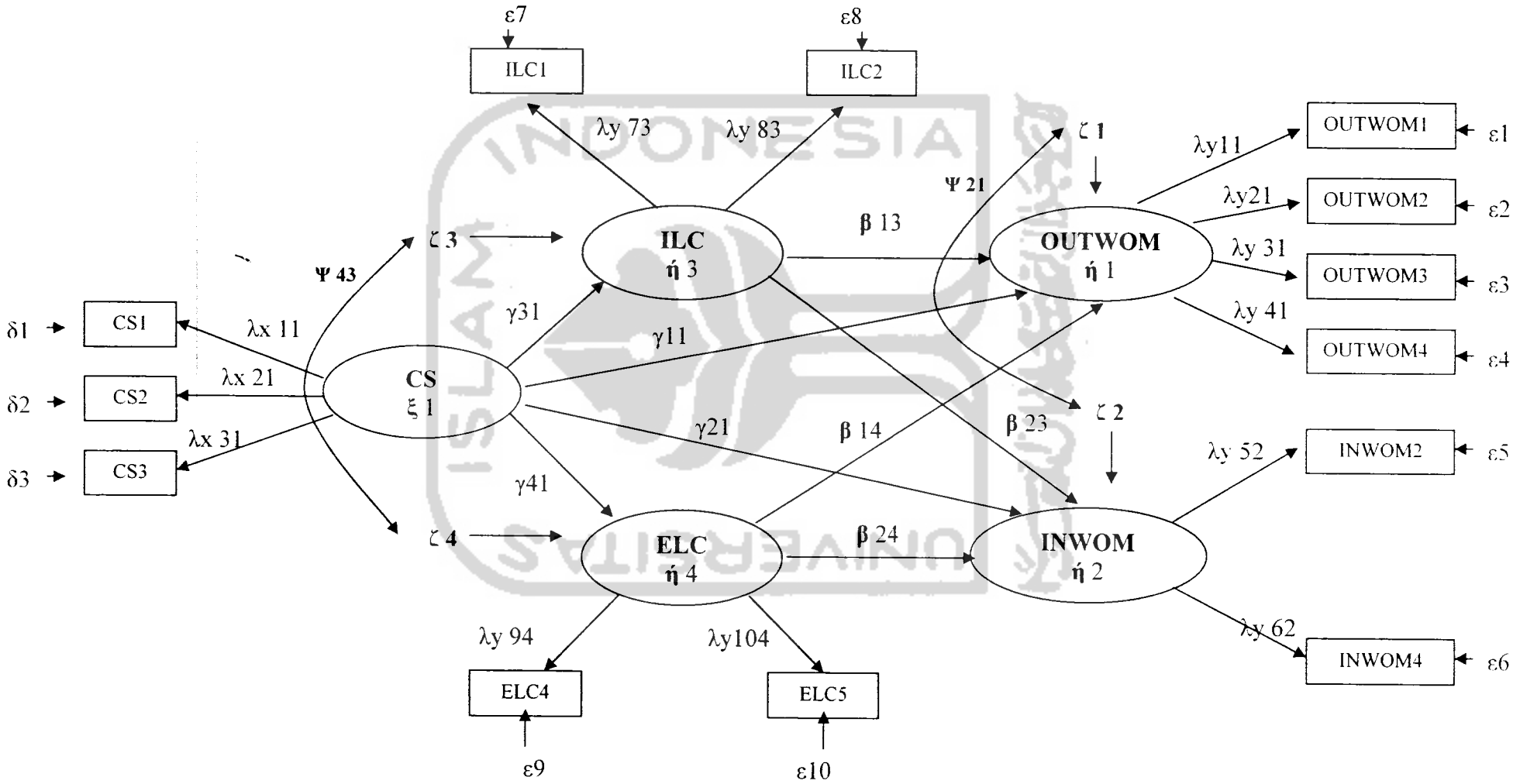
The above analysis indicates that from20 observed variables initially developed in the current study, 7 of them are excluded for further analysis. Table 5.1 provides the detail of the variables that are included and excluded in the current study.

The thirteen observed variables represent five (5) latent constructs. Four (4) constructs can be classified as perfect models. Their $\chi^2$ and RMSEA values are zero. One construct is categorized as a good model which is OUTWOM (out-group word of mouth communication) generates values of goodness of fit as follows Chi-Square ($\chi^2$)= 3.83 with probability = 0.14, Normed $\chi^2$ = 1.9; RMSEA = 0.08; GFI = 1.0; AGFI = 0.98; and CFI = 1.0. These values are above of their minimum acceptable level, indicating this construct is a good fitting model; even it is not a perfect one.

Finally, $R^2$, composite reliability, and variance extracted of the forty-six observed variables of the study exceed their minimum acceptable levels. Likewise, these variables and their underlying constructs satisfy the requirement of convergent and discriminant validity tests. Therefore, the researcher concludes that these observed variables are reliable and accurate in measuring their underlying constructs.

Based on the above criteria, the proposed full generalized model in Chapter III figure 3.1. Will be modified based on the minimum criteria for developing one factor congeneric model in structural equation modeling which is the minimum standardized loading of .70 and $R^2$ of .50. below is the model for one factor congeneric before each observed variables being composite into one construct

**Figure 4.1 (Full conceptual model before composite)**



### 4. 6. The analysis of Structural Equation Model

Holmes-Smith and Row (1994) recommend three steps to perform the one congeneric measurement models for the analysis of structural equation model. The first step is to reduce the observed variables of each construct into a composite variable. This can be calculated using the following formula:

$$\xi = \Sigma \omega_i x_i$$

where, $\xi_j$ = estimated composite score

$\omega_i$ = factor score regression

$x_i$ = observed variables

The second step is to calculate the composite scale reliability. In this case, Werts, Rock, Linn, and Joreskoq (1978) reveal that the composite scale reliability is maximized if the vector of weight is the vector score regression. They develop a formula to calculate the reliability as follows:

$$r_m = \frac{(\Sigma \omega_i \lambda_i)^2}{(\Sigma \omega_i \lambda_i)^2 + \Sigma \theta_i \omega_i^2}$$

where, $r_m$ = maximized composite scale reliability; $\lambda_i$ = factor loadings

$\omega_i$ = factor score regression; $\theta_i$ = error variance

The final step is to develop a structural equation model to examine the relationships amongst constructs. Holmes-Smith and Row (1994) assert that if the matrix to be analyzed is a matrix of correlations amongst composite variables,

then the variances of the composite variables is equal to one and the parameters $\lambda$ and $\theta$ simplify to:

$$\lambda = \sqrt{r_m} \text{ and } \theta = 1 - r_m$$

These two parameters ($\lambda$ and $\theta$) can be used as fixed parameters in the measurement part of the structural equation model.

**4. 6. 1. The Development of the Composite Scales**

Providing that the items' reliabilities and the constructs' validities of this study are very good, it is plausible to perform the fitting congeneric measurement as recommended by Holmes-Smith and Row (1994). The researcher, firstly, develop a new data file for the composite scores of the five constructs used in this study. The way to calculate the composite score can be described as follows. For example, the factor score regressions of "In-Group WOM" (INWOM) and the factor score regressions of "Out-Group WOM" (OUTWOM) are as follows:

Factor Scores Regressions

**Table 4.9 Example of Composite Scale Development**

| | INWOM2 | INWOM4 |
|---|---|---|
| INWOM | 0.48 | 0.48 |

| | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|---|
| OUTWOM | 0.14 | 0.36 | 0.27 | 0.29 |

Based on these factor scores, the researcher calculates the composite score of the two constructs as follows:

Composite score of INWOM: 0.48*INWOM2 + 0.48*INWOM4

Composite score of OUTWOM: 0.14*OUTWOM1+0.36*OUTWOM2+

0.27*OUTWOM3+0.29*OUTWOM4

Similar procedures are applied to the rest of the constructs to calculate their composite scores. Through this step, the observed variables of the study are reduced from thirteen to five composite observed variables. This enables the researcher to develop the asymptotic covariance matrix, since the minimum sample size required is 10 that is 5(5-1):2. The detail of the correlation matrices used in the structural equation model analyses can be seen at Appendix.

In addition, based on the existing coefficients of factor loadings, error variances, and factor regressions, the researcher calculates the coefficients of the maximized composite scale reliabilities, factor loadings ($\lambda$), and error variances ($\theta$). The coefficients of the factor loadings and error variances are, in turn, used as fixed parameter estimates in the measurement part of the structural equation model. The results of these calculations are presented in table 4.10 in more detail, together with the final coceptual model for the onne factor congeneric model after the composite score of each observed variables being calculated to fix the value of factor loading and the error of variances that will be used in the full model.

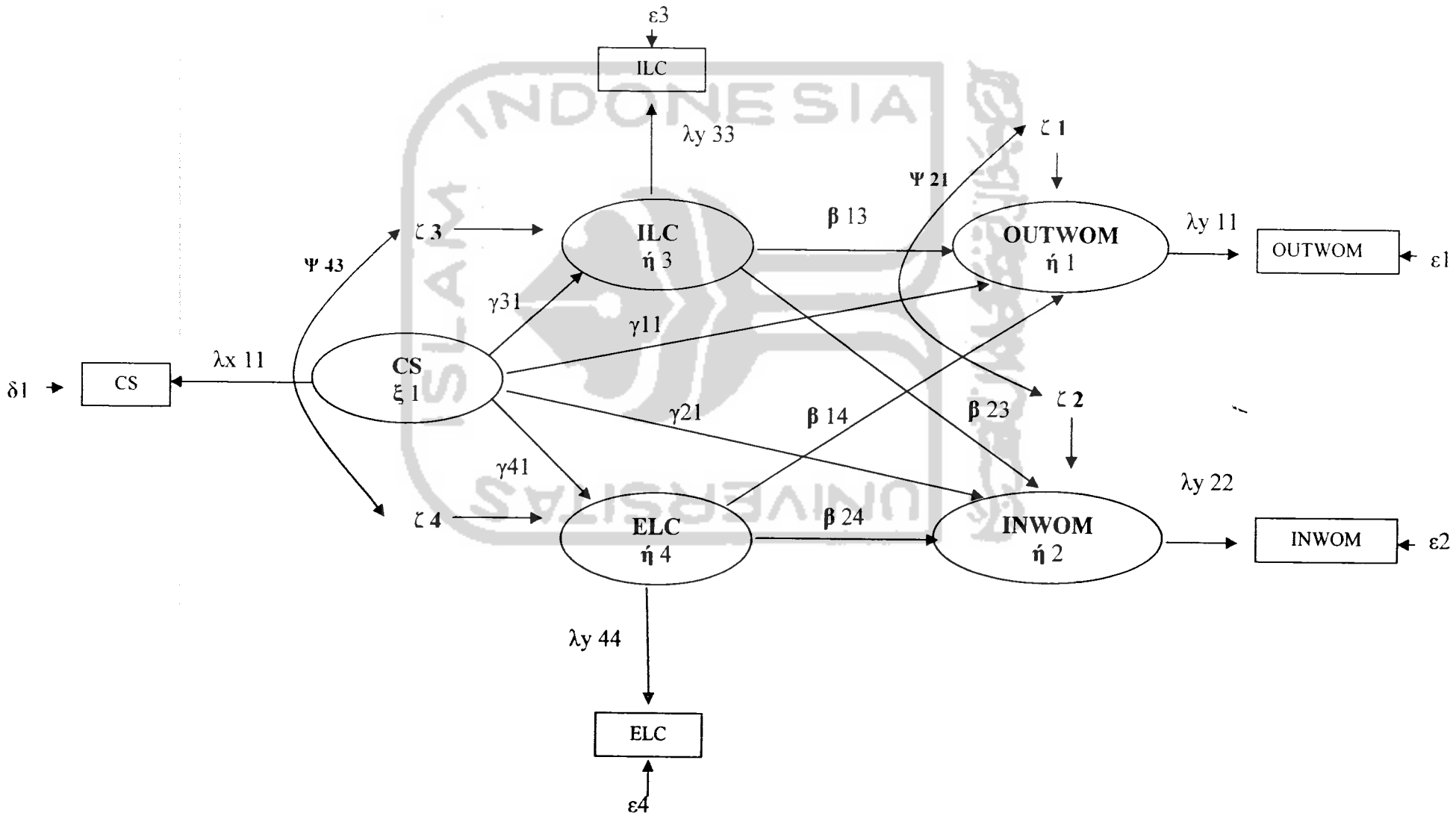
**Table 4. 10. Parameter Estimates and Factor Score Regressions of the Observed Variables and the Maximized Reliabilities and Parameter Estimates of the Composite Variables**

| Variable Name | Observed Variables | | | Composite Variables | | |
|---|---|---|---|---|---|---|
| | Factor Loadings ($\lambda_i$) | Error Variances ($\theta_i$) | Factor Score Regressions | Maximized Reliability ($r_m$) | Factor Loadings ($\sqrt{r_m}$) | Error Variances ($\theta=1-r_m$) |
| **Customer Satisfaction (CS):** | | | | .789 | .888 | .211 |
| CS1 | .79 | .38 | .43 | | | |
| CS2 | .72 | .48 | .32 | | | |
| CS3 | .71 | .49 | .31 | | | |
| **Internal Locus of Control (ILC):** | | | | .767 | .881 | .233 |
| ILC1 | .79 | .38 | .49 | | | |
| ILC2 | .79 | .38 | .49 | | | |
| **External Locus of Control (ELC):** | | | | .871 | .933 | .129 |
| ELC4 | .88 | .23 | .50 | | | |
| ELC5 | .88 | .23 | .50 | | | |
| **In-Group WOM (INWOM):** | | | | .694 | .833 | .306 |
| INWOM2 | .73 | .47 | .48 | | | |
| INWOM4 | .73 | .47 | .48 | | | |

**Table 4. 10. Continued**

| Variable Name | Observed Variables | | | Composite Variables | | |
|---|---|---|---|---|---|---|
| | Factor Loadings ($\lambda_i$) | Error Variances ($\theta_i$) | Factor Score Regressions | Maximized Reliability ($r_m$) | Factor Loadings ($\sqrt{r_m}$) | Error Variances ($\theta=1-r_m$) |
| **Out-Group WOM (OUTWOM):** | | | | .930 | .960 | .070 |
| OUTWOM1 | .77 | .40 | .14 | | | |
| OUTWOM2 | .91 | .18 | .36 | | | |
| OUTWOM3 | .88 | .23 | .27 | | | |
| OUTWOM4 | .88 | .22 | .29 | | | |

**Figure 4.2 (Full conceptual model after composite)**



### 4. 6. 2. The Assessment of the Goodness of Fit of the Initial Structural Equation Model

Once the composite observed variables and their parameter estimates have been calculated, it is possible to carry out the structural equation model to analyze the causal relationships amongst the composite constructs (See appendix E). The initial structural equation model is based on the Research Model shown in Figure 4.2. Since the current study only uses a single sample, Expected Cross Validation Index (ECVI) is needed as an additional goodness of fit criterion. ECVI is a means to evaluate, in a single sample, the likelihood that the model cross-validates across similar sample size from the same population (Browne and Cudeck, 1989). It specifically measures the extent to which the fitted covariance matrix in the analyzed sample fits to the expected covariance matrix obtained from similar sample size. This test does not provide fix range of values as an acceptable level, because ECVI coefficients can take on any value. However, the model having an ECVI value lower than the value of ECVI for saturated model demonstrates the greatest potential for replication (Byrne, 1998).

The first run of the hypothesized model provides a reasonably accurate representation of data. The statistical values are in the range of their acceptable levels. For example, its $\chi^2$ value is 5.25. However, the Normed $\chi^2$ is 2.62 indicating that the model is reasonably indicating good fit. The values of GFI, AGFI, and CFI are 0.99, 0.94, and 0.97 respectively, which are above their acceptable levels. For the model parsimony indices, the first model show that the value of Akaike information criterion (AIC) for the independence, model and

saturated are 122.89, 31.25 and 30.00 respectively. For the root mean square error of approximation (RMSEA), the value is 0.11, which is still above the minimum level for the indication of mediocre fit (RMSEA < 0.10). So, based on the above criteria for good model, the re-specification of the model still needed in order to get the final good model.

In addition to the statistical values above, the results of this initial structural model demonstrates that from eight paths hypothesized, three of them are at least significant , while the other five (CS → ELC, CS → OUTWOM, CS → INWOM, ILC→ OUTWOM, ELC → OUTWOM ) are not significant. Table 5.9 below exhibits the validity and significant level of each hypothesized path.

**Table 4. 11. The Validity and Significant Level of the Causal Relationship for the Initial Model**

| Relationship between two Constructs | Factor Loading (λ) | | *t*-value | Significant Level of *t*-test |
|---|---|---|---|---|
| | Beta (β) | Gamma (γ) | | |
| CS → ILC | -- | 0.28 | **3.00** | > +-1.96 |
| CS → ELC | -- | 0.15 | 1.50 | < +-1.96 |
| CS → OUTWOM | -- | 0.18 | 1.55 | < +-1.96 |
| CS → INWOM | -- | 0.01 | 0.11 | < +-1.96 |
| ILC →OUTWOM | -0.09 | -- | 0.55 | < +-1.96 |
| ILC → INWOM | 0.55 | -- | **3.58** | > +-1.96 |
| ELC → OUTWOM | 0.10 | -- | 0.96 | < +-1.96 |
| ELC → INWOM | 0.35 | -- | **2.61** | > +-1.96 |

### 4. 6. 3. The Re-specification of the Model

Like the measurement model analysis, the LISREL outputs also provide modification indices (MIs) to evaluate the potential source of misspecification of the structural model. Considering the analysis of structural equation model involves causal relationship only amongst latent constructs, the researcher concentrates only on the MIs that are related to the Beta and Gamma matrices in respecifying the model. As mentioned in the previous section, a modification index (MI) value greater than 3.84 suggests that $\chi^2$ would be significantly reduced when the corresponding parameter is estimated.

In addition, as in the measurement model analysis, the researcher uses the MIs to respecify the structural model with some considerations in mind. Firstly, the additional path must make sense in terms of its theoretical perspective or its empirical evidence, or both. Secondly, the additional path does not lead to an overfitted model. Byrne (1998, page 125) reveals that an over-fitted model may arise from the inclusion of some parameters that: (a) are fragile in the sense of representing weak effects that are not likely replicable, (b) lead to a significant inflation of standard errors, and (c) influence primary parameters in the model, albeit their own substantive meaningfulness is somewhat equivocal. Tables 4.12.a, 4.12.b below provide the detail of the MIs and their expected change related to the Beta. For Gamma, the MI suggest that there is no modification iindices.

**Table 4.12a**

**Modification indices for Beta**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| **OUTWOM** | - - | **3.99** | - - | - - |
| **INWOM** | **3.99** | - - | - - | - - |
| **ILC** | 1.37 | 1.37 | - - | 1.37 |
| **ELC** | 1.37 | 1.37 | 1.37 | - - |

**Table 4.12b**

**Expected change for Beta**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| **OUTWOM** | - - | **-0.37** | - - | - - |
| **INWOM** | **-0.20** | - - | - - | - - |
| **ILC** | -1.55 | -0.44 | - - | -0.15 |
| **ELC** | 1.77 | -0.30 | -0.17 | - - |

The tables above which contains the suggestion of maximum modification indices for Beta and the expected changes shows that there is only one path of beta which is OUTWOM to INWOM that have modification indices values greater than 3.84, which is 3.99. But eventhough the value of MI is above the minimum level of suggestion, the modification of the hypothesized model can not be done since it is not make sense in term of theoritical perspective.

The table 4.13, 4.14. and 4.15 below show the goodness of fits statistics, the path of t-values and the squared multiple correlations for the structural equation of the initial and the respecified model.

**Table 4. 13. The Goodness of Fit Statistics of the Structural Equation Model**

| (1) Goodness of Fit Indices | (2) The Initial Model | (3) The 1st Respecified Model | (4) The 2nd Respecified Model | (5) The 3rd Respecified Model |
|---|---|---|---|---|
| The $\chi^2$ | 5.25 | 5.26 | 7.97 | 8.02 |
| The Normed $\chi^2$ | 2.6 | 1.75 | 1.99 | 1.60 |
| The RMSEA | 0.11 | 0.07 | 0.08 | 0.07 |
| The GFI | 0.99 | 0.99 | 0.99 | 0.99 |
| The AGFI | 0.94 | 0.96 | 0.96 | 0.97 |
| The CFI | 0.97 | 0.98 | 0.96 | 0.97 |
| The Independence AIC | 122.89 | 122.89 | 122.89 | 122.89 |
| The model AIC | 31.25 | 29.26 | 29.97 | 28.02 |
| The Saturated AIC | 30.00 | 30.00 | 30.00 | 30.00 |
| The Independence CAIC | 142.03 | 142.03 | 142.03 | 142.03 |
| The model CAIC | 81.02 | 75.20 | 72.08 | 66.30 |
| The Saturated CAIC | 87.42 | 87.42 | 87.42 | 87.42 |
| Root Mean Square Residual (RMR) | 0.05 | 0.05 | 0.06 | 0.06 |

**Table 4 14. The Paths' *t* Values of the Initial and Respecified Models**

| (1) Path | (2) The Initial Model | (3) The First Respecified Model | (4) The Second Respecified Model | (5) The Third Respecified Model |
|---|---|---|---|---|
| CS → OUTWOM | 1.55 | [illegible] | -- | -- |
| CS → INWOM | 0.11 | -- | -- | -- |
| CS → ILC | 3.00 | 3.00 | 3.06 | 3.11 |
| CS → ELC | 1.50 | [illegible] | [illegible] | [illegible] |
| ILC → OUTWOM | -0.75 | [illegible] | [illegible] | -- |
| ILC → INWOM | 3.58 | 3.70 | 3.71 | 3.67 |
| ELC → OUTWOM | 0.96 | 0.94 | [illegible] | [illegible] |
| ELC → INWOM | 2.61 | 2.81 | 2.70 | 2.75 |

**Table 4 15. Squared Multiple Correlations ($R^2$) for the Structural Equations**

| (1) Dependent variable | (2) The Initial Model | (3) The 1st Respecified Model | (4) The 2nd Respecified Model | (5) The 3rd Respecified Model |
|---|---|---|---|---|
| Out-group WOM | 0.04 | 0.04 | 0.02 | 0.02 |
| In-Group WOM | 0.44 | 0.44 | 0.43 | 0.41 |
| Internal Locus of Control | 0.08 | 0.08 | 0.09 | 0.09 |
| External Locus of Control | 0.02 | 0.02 | 0.01 | 0.01 |

From the tables 4.12 above, we can see that from the first respecification of the main model by the exclusion of path from Customer satisfaction (CS) to In-group word of mouth communication (INWOM), the normed Chi-squared ($\chi^2$) decrease from 2.6 to 1.75, which already indicates the acceptable level (normed chi squared should be greater than 1.0 but smaller than 2.0), the RMSEA decrease from 0.11 to 0.07, which already indicate medicore fit with reasonable error. The Goodness of fit index (GFI) is stil same with the intial model which is 0.99 (accptable level is the GFI shoul be greater than 0.95, which indicate a good fit), the Adjsuted goodness of fit index (AGFI) increase from 0.94 to 0.96 (accptable level is the AGFI shoul be greater than 0.95, which indicate a good fit), Comparative fit index (CFI) also increase from 0.97 to 0.98 (acceptable level CFI should be greater than 0.95). Furthermore, the index for model parsimony, the AIC (Akaike information criterion ) for independence, model and saturated is small compare with the Consistent akaike information criterion (CAIC) for the independence, model and saturated. For the RMR (Root mean square residual), the RMR is still in the same value from the intial model to the first respecification which is 0.05, this value is still accptable, although the accpetable level for the RMR as an indication of good model is RMR shoul be less than 0.05. For the chi-square ($\chi^2$), the value is increase from 5.25 in the initial model to 5.26 in the first respicification of the model. This can be understand since the advantages of using Chi square is that it can be small by adding more paramters to the model, in this case the respecification of the model is done by reducing the relationship amongs parameter of Customer satisfaction (CS) to In-group word of mouth

communication (INWOM) which lead to an increase in the Chi square value in the first respecification. Since there is an advantages of using chi square as a measure of absolue fit index which will make the specified model become rejected as the chi square is big, the researcher use Normed chi square as measure of absolute fit index of the model where it take into account the degree of freedom of the model. Becasue the normed $\chi^2$ take model complexity into account, it can also be referred as an index of model parsimony, beside using AIC and CAIC as an index. While in the second and third respecification of the model, the goodness fits statistics show that in the overall view, there is no significant improvement. We can see that from the first respecification to the second respecification of the model the normed chi squared ($\chi^2$) is increase from 1.75 to 1.99, this contrary with the expectation of the researcher that the normed chi squared ($\chi^2$) will decrease to be more closer to the 1.0. the RMSEA is increase from 0.07 to 0.08, which is also contrary to the researcher expectation that the RMSEA will improve by showing the decreasing in the value. The same condition also happened with the RMR that increase from 0.05 to the 0.06, instead of decreasing as the researhcer expectation. For the Comparative fit index (CFI), the value is decrease from 0.98 to 0.96, which also contrary to the research expectation that the CFI value will increase.

From the Table 4.13 above, we can see that from the intial model which only have 3 path of t values that sigificant (CS → ILC, ILC → INWOM, ELC → INWOM), to the first respecification of the model, there is no significant improvement to the other four (4) path after modifing the hypothetized model by removing or exluding the path from Customer satisfaction (CS) to In-group word of mouth

communication (INWOM). The same situation happens in the second and third respecification of the model.

While from the table 4.14, we can se that the squared multiple correlations ($R^2$) for the Structural Equations from the initial model to the first respecification of the model show that the value of squared multiple correlation is still the same which is 0.04 for Out-group WOM, 0.44 for In-Group WOM, 0.08 for Internal locus of control and 0.02 for External locus of control. While in the second and third respecification of the model show the decreasing in the value of squared multiple correlations.

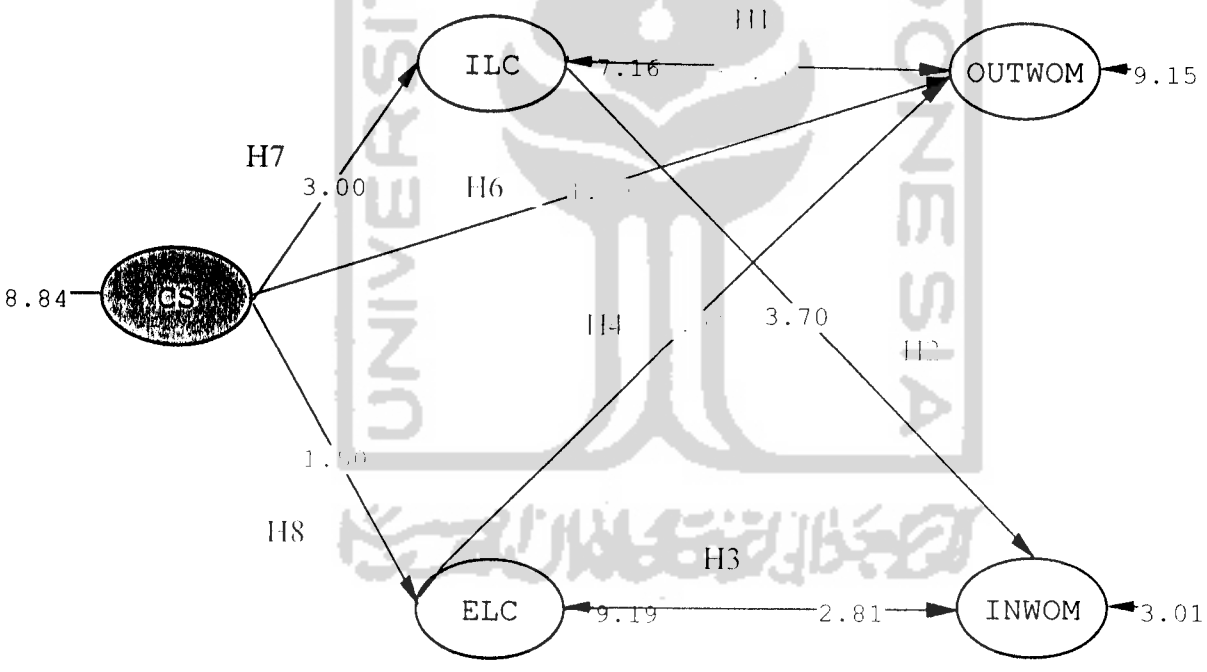
Based on the above considerations, the researcher concludes that final model for full structural equation modeling is achieved after one respecification. The respecification is done by excluding the path from Customer satisfaction (CS) to In-group word of mouth communication (INWOM). Below is the figure and table of goodness fits statistics for the final model.

From the figure 4.3 below of the final structural model for the influences of customer satisfaction on word of mouth communication in the study of the roles of individual locus of control on the purchasing of shopping product in Kodya Jogjakarta, we can see that from 7 path of the hypothesized model, only 3 path which is found to be significant which are Customer satisfaction to Internal locus of control (t – values is positively significant at 3.00 significant level), Internal locus of control to In-group word of mouth communication (t-values is positively significant at 3.70 significant level), and the last one is External locus of control to In-group word of mouth communication (t-values is positively significant at

2.81 significant level). While others 4 path is not significant, since the t values are in between – 1.96 and +1.96, since the t values acceptable level is the t-values are larger than ± 1.96. The non-significant path is shown by the red color of the t-values. The paths which are not significant are the path from Customer satisfaction to Out-group word of mouth communication (1.59), Customer satisfaction to External locus of control (1.18), Internal locus of control to Out-group word of mouth communication (1.16), and External locus of control to Out-group word of mouth communication (0.94). from 3 significant path, only two (2) path which is support the hypothesis, which are Customer satisfaction to Internal locus of control (t – values is positively significant at 3.00 significant level) and External locus of control to In-group word of mouth communication (t-values is positively significant at 2.81 significant level).

**Figure 4. 3. The Final Structural Model (Construct Relationships**

**And *t* values only)**




*i*

Chi-Square=5.26, df=3, P-value=0.15340, RMSEA=0.078

**Table 4.16 The Goodness fit index of final model**

| (1) Goodness of Fit Indices | (2) Final Model |
|---|---|
| The $\chi^2$ | 5.26 |
| The Normed $\chi^2$ | 1.75 |
| The RMSEA | 0.07 |
| The GFI | 0.99 |
| The AGFI | 0.96 |
| The CFI | 0.98 |
| The Independence AIC | 122.89 |
| The model AIC | 29.26 |
| The Saturated AIC | 30.00 |
| The Independence CAIC | 142.03 |
| The model CAIC | 75.20 |
| The Saturated CAIC | 87.42 |
| Root Mean Square Residual (RMR) | 0.05 |

Table 4.15 above show the goodness of fits index of the final structural model. The normed chi square ($\chi^2$) is the Chi square ($\chi^2$) divided by the degree of freedom (df), which is 5.26 divided by 3, equal to 1.75 ( the accepatable level is $1.0 < \chi^2/df < 3.0$, where value close to 1.0 indicate good fit. For the RMSEA (Root mean square error of approximation), the value of 0.07 already indicate that the final model can be categorized as satisfactory fit ( the acceptable level is RMSEA should be less than 0.05 to indicate a good fit, or values between 0.05 – 0.08 may also indicate satisfactory fit). The Goodness of fit (GFI), Adjusted

goodness of fit (AGFI) and Comparative fit index (CFI) values are 0.99, 0.96 and 0.98 respectively ( the GFI, AGFI and CFI value should bigger than 0.95 to indicate a good fit) that already indicate a good fit. The independence, model and saturated AIC (Akaike information criterion) value which is 122.89, 29.26 and 30.00 respectively are smaller than the value of CAIC (consistent akaike information criterion) for the independence, model and saturated which are 142.03, 75.20 and 87.42. This indicate that the final model is parsimonious. The last one is for the RMR (root mean square residual), the final model show the value of RMR equal to 0.05 (the acceptable level, RMR shoul be less than 0.05), this can be accepted since the value o RMR is in the edge of the acceptable level.

**4.7. The Hypotheses Evaluation and Research Findings**

After the final model has been established, and the goodness of fits statistics have already shown that the final model is acceptable and good in term of the statistical term. The researcher will evaluate the hypotheses developed for this research. After the final model, The 8 hypotheses that already been developed in chapter II of this research was modified into 7 hyphoteses, so in this evaluation of hypotheses, only 7 hypotheses that will evaluated. The following table summarized the results of hyphoteses testing:

**Table 4.17 Summary of Hypotheses Testing**

| Hypothesis | Hypothesized Effect | β or γ (*t*-value/α level) | Result |
|---|---|---|---|
| H1: The people who score high on their internal locus of control are more likely to engage in word of mouth communication with their out-groups compared to individuals who score low on their internal locus of control | + | [illegible] | Not supported |
| H2: Individuals who score high on their internal locus of control are less likely to engage in word of mouth communication with their in-groups compared to individuals who score low on their internal locus of control | - | [illegible] | [illegible] |
| H3: Individuals who score high on their external locus of control are more likely to engage in WOM communication with their in group compare to individual who score low on their external locus of control | + | 0.35(2.81/ 0.12) | Supported |
| H4: Individuals who score high on their external locus of control are less likely to engage in WOM communication with their out group compared to individual who score low on their external locus of control | - | [illegible] | [illegible] |
| H6: The higher the customer's satisfaction, the higher the possibility to conduct word of mouth communication with their out groups | [illegible] | [illegible] | [illegible] |
| H7: The higher the customer satisfaction, the higher the possibility the individuals who score high on their internal locus of control to communicate their experiences to other people | + | 0.28(3.00/ 0.09) | Supported |

| Hypothesis | Hypothesized Effect | β or γ (*t*-value/α level) | Result |
|---|---|---|---|
| H8: The higher the customer satisfaction, the higher the possibility the individuals who score high on their external locus of control to communicate their experiences to other people | + | 0.15(1.50/ 0.10) | Not Supported |

The findings from this research regarding the influences of customer satisfaction on word of mouth communication in the study of the roles of individual locus of control on the purchasing of shopping product in Kodya Jogjakarta was that the word of mouth communication was influenced by locus of control and customer satisfaction. This study found that the higher the customer satisfaction, the higher the possibility the individuals who score high on their internal locus of control to communicate their experiences to other people. While on the other hand, individuals with high external locus of control were more likely to engage in word of mouth communication with their in-group. This based on the previous research which has found that external will desire more companionship (Flaherty et al, 1998).

The findings from this research support one of the Lam and Mizerski (2005) findings that the individual with high external locus of control were more likely to engage in word of mouth communication with their in-group. Where based on the past research conducted by Chiu, Lee and Dengerink (1992) that found that the in-group word of mouth communication may be more proliferate in Asian Societies than in Western societies. Since the current research was conducted in Jogjakarta which is part of the Asian societies, it was reasonable that the In-group word of mouth communication was found to be more proliferate rather than out-group word of mouth communication.

For the hypothesis 1 (The people who score high on their internal locus of control are more likely to engage in word of mouth communication with their out-groups compared to individuals who score low on their internal locus of control) which

was rejected, the explanation is that since this research was conducted in Indonesia, which is part of Asian society, where based on the past research conducted by Chiu, Lee and Dengerink (1992) that found that the in-group word of mouth communication may be more proliferate in Asian Societies than in Western societies. Based on this justification, it can be understandable that the Indonesian people with high internal locus of control, will not likely to engage in the out-group word of mouth communication. This finding is contrary with Lam and Mizersky findings where they found that individual with high internal locus of control were more likely to engage in the out-group word of mouth communication

For the hypothesis 2 (Individuals who score high on their internal locus of control are less likely to engage in word of mouth communication with their in-groups compared to individuals who score low on their internal locus of control) which was also rejected. The justification is that since internal found to be activity-oriented (Hoffman et al, 2003) and risk-taking characteristics (Howell and Avolio, 1993), it seems unlikely that internals will engage in the in active communication with their in-groups.

Furthermore, in relation with the hypothesis 4 (Individuals who score high on their external locus of control are less likely to engage in WOM communication with their out group compared to individual who score low on their external locus of control) which was rejected. The justification is that since external found to be often engage in the avoidance behavior (Janssen and Carton, 1999) and also have

greater need for affiliation (Steinfatt, 1987), as such they are found to be more likely to fall back on their in-group memeber.

Hyphotesis 6 (The higher the customer's satisfaction, the higher the possibility to conduct word of mouth communication with their out groups) which was rejected, the justificatition is that based on the previous research which only found that the customer satisfaction will lead to positive word of mouth activity (Prince and File, 1992), not in-group or out-group word of mouth specifically, but word of mouth acitivity in general. So the satisfied customer will not directly involve on the out-group word of mouth communication.

So based on the above explanation, it can be concluded that locus of control, especially internal locus of control, have a mediating role in the process of word of mouth communication in the case of the customer satisfaction regarding the shopping product. The characteristic of this product are high in economic and have psychological importance, since this product have psychologycal important, it will be make sense that the personality, especially internal locus of control have a mediating role in the word of mouth communication.

**4.8. Research Implications.**

The major findings from this study found that individuals with high external locus of control were more likely to engage in word of mouth communication with their in-group. The customer who was satisfied with the product will not directly inform or involve in the word of mouth communication, but it depend on whether those satisfied customer have a high internal (low external) locus of control. The knowledge of locus of control may become highly valuable and

important for a company in enabling alternative promotional strategies. It give an implication for the marketer and company that in managing word of mouth communication (negative and positive), especially in the Asian society such as Indonesia, the flow of word of mouth communication is more proliferate in the in-group (close friends and family). For the marketers and the company that targeting the Asian markets such Indonesia, additional promotional efforts at the families and friends of the opinion leaders may become more effective and efficient that will enhance the product information diffusion. This was based on the previous conducted by Dawar et al (1996) where the opinion leader believed to be highly influential and help generates word of mouth communication.

# CHAPTER V

# CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Conclusions

Customer satisfaction, personality and word of mouth communication is indeed cannot be separated in understanding the consumer decision making regarding the purchasing of shopping product which is characterized by medium level of customer involvement. The highly satisfied customer will not directly involve in word of mouth activity, but it depends on the personality those satisfied costumer possess, the individual with high external locus will engage in word of mouth with their in-group. This finding was important, since based on the fact that the Asian society is tend to involve in the word of mouth communication with their in-group. The findings will help the marketer, company and the academic practitioner in effectively and efficiently identify the community that will be more receptive to the word of mouth activity, especially in-group word of mouth communication. Since word of mouth is the most honest medium of information flow and non-commercial tools of advertising, the company and marketer that enable to use this as promotional tools hopefully can reduce the overall cost in their promotional activity.

## 5.2. Recommendations

From this research finding, it is strongly recommended for the organization, company, marketer, academic practitioner and all the party which involve in the marketing activity that targeting their promotional activity in Asian society, especially in Jogjakarta, to focus their promotional in the in-group

community such as family, friends and close friends, since based on the fact that this group of people is more receptive and engage in more word of mouth communication, compared with the out-group (people other than friend and family). This will hopefully make the diffusion of the information flows faster.

Since internal locus of control found to have mediating roles in the word of mouth communication regarding the satisfaction of the shopping product, it is recomendded to the marketer and academic practitioner to be able to identify the people who have high external and internal locus of control in order to be able to manage the flow of word mouth communication.

Future research should try to replicate the same study by investigating the same personality construct and by investigating the specific brand of the shopping product in order to make this research more generalize.

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# APPENDIX A
# QUESTIONNAIRE

## THE QUESTIONNAIRE

### PART 1: INTERNAL LOCUS OF CONTROL

| | ***Statements below related to your personality. Show your opinions by giving cross (X) sign in the most appropriate number.*** | **Strongly disagree** | | | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| 1 | My life is determined by my own actions | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | When I get what I want it is usually because I worked hard for it | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | I can pretty much determine what will happen in my life | 1 | 2 | 3 | 4 | 5 | 6 |

**Note:** 1 = Strongly disagree 2 = Disagree 3 = Somehow disagree
4 = Somehow agree 5 = Agree 6 = Strongly agree

### PART 2: EXTERNAL LOCUS OF CONTROL

| | ***Statements below related to your personality. Show your opinions by giving cross (X) sign in the most appropriate number.*** | **Strongly disagree** | | | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| 1 | To a great extent my life is controlled by accidental happenings | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | When I get what I want it is usually because I am lucky | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | It is not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad luck | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | I feel like what happens in my life is mostly determined by powerful people | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | My life is chiefly controlled by powerful others | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | People like me have little chance of protecting our personal interests when they conflict with those of strong pressure groups | 1 | 2 | 3 | 4 | 5 | 6 |

## PART 3: CUSTOMER SATISFACTION

| ***Statements below related to the product you already bought such as cloths, shoes and bags. Show your opinion by giving cross sign (X) in the most suitable number.*** | | **Strongly disagree** | | | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| 1 | The performance of the product that I bought exceeds my expectation | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | In overall, I feel satisfied with the product I bought | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | The product that I bought was the best product compare with other same product | 1 | 2 | 3 | 4 | 5 | 6 |

## PART 4: WORD OF MOUTH COMMUNICATION (IN-GROUP)

| ***Statements below related to your habit communicating brands or products to other people. Show your opinion by giving cross sign (X) in the most suitable number.*** | | **Strongly disagree** | | | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| 1 | I like introducing new brands and products only to my close friends or family | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | I only provide information about new brands and products to my close friends or family | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | I like to seek advice or information only from my close friends or family when making a purchase decision | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | I only gather information about a product before I buy from my close friends or family | 1 | 2 | 3 | 4 | 5 | 6 |

**Note:** 1 = Strongly disagree 2 = Disagree 3 = Somehow disagree
4 = Somehow agree 5 = Agree 6 = Strongly agree

## PART 5: WORD OF MOUTH COMMUNICATION (OUT-GROUP)

| ***Statements below related to your habit communicating brands or products to other people. Show your opinion by giving cross sign (X) in the most suitable number.*** | | **Strongly disagree** | | | | | **Strongly Agree** |
|---|---|---|---|---|---|---|---|
| 1 | I like to provide people other than my close friends or family with information about new brands or products | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | I share information about new brands and products with people other than my close friends or family | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | I seek out the advice of people other than my close friends or family regarding which brand to buy | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | I like to seek information and advice of people other than my close friends or family before making a purchase decision | 1 | 2 | 3 | 4 | 5 | 6 |

## PART 6: DEMOGRAPHICS CHARACTERISTICS

***Questions below related with your personal information. Answer the questions by giving cross sign (X) in the most suitable number***

1. In the last birthday, how old are you?
   1. less than 20
   2. 20 – 25
   3. 26 – 30
   4. 31 – 35
   5. 36 – 40
   6. more than 40

2. What is your gender?
   1. Male
   2. Female

3. What is your last education?
   1. Elementary school
   2. Junior high school
   3. Senior high school
   4. Diploma
   5. Under graduate
   6. Post graduate

4. What is your occupation?
   1. Government officer
   2. Army/Police officer
   3. Non-government officer
   4. Entrepreneur
   5. Housewives
   6. Students

5. How much is the salary of your family in each month?
   1. less than Rp1 million
   2. Rp1 – Rp1,5 million
   3. Rp1,51 – Rp2 million
   4. Rp2,01 – Rp2,5 million
   5. Rp2,51 – Rp3 million
   6. Rp3,01 – Rp3,5 million
   7. Rp3,51 – Rp4 million
   8. more than 4 million

# THE QUESTIONNAIRE

## BAGIAN 1: INTERNAL LOCUS OF CONTROL

| ***Pernyataan-pernyataan dibawah ini berkenaan dengan kepribadian anda. Tunjukkan pendapat anda dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.*** | | **Sama Sekali Tidak Setuju** | | | | | **Setuju Sekali** |
|---|---|---|---|---|---|---|---|
| 1 | Hidup saya ditentukan oleh apa yang saya lakukan | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Ketika saya memperoleh apa yang saya inginkan, itu dikarenakan oleh usaha keras yang saya lakukan | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Saya bisa menentukan apa yang akan terjadi pada hidup saya | 1 | 2 | 3 | 4 | 5 | 6 |

**Catatan:** 1 = Sama Sekali Tidak Setuju 2 = Tidak Setuju 3 = Agak Tidak Setuju
4 = Agak Setuju 5 = Setuju 6 = Setuju Sekali

## BAGIAN 2: EXTERNAL LOCUS OF CONTROL

| ***Pernyataan-pernyataan dibawah ini berkenaan dengan kepribadian anda. Tunjukkan pendapat anda dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.*** | | **Sama Sekali Tidak Setuju** | | | | | **Setuju Sekali** |
|---|---|---|---|---|---|---|---|
| 1 | Dalam banyak hal, hidup saya ditentukan oleh kejadian di luar dugaan saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Ketika saya memperoleh apa yang saya inginkan, itu dikarenakan oleh keberuntungan saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Bagi saya nampaknya kurang bijak untuk merencanakan sesuatu terlalu jauh, karena segala sesuatu tidak lepas dari masalah keberuntungan atau ketidak-beruntungan | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | Saya merasa apa yang terjadi pada hidup saya sebagian besar ditentukan oleh kekuatan atau kekuasaan orang lain | 1 | 2 | 3 | 4 | 5 | 6 |
| 5 | Pada dasarnya hidup saya dipengaruhi oleh kekuatan atau kekuasaan orang lain | 1 | 2 | 3 | 4 | 5 | 6 |
| 6 | Orang seperti saya sangat susah untuk melindungi kepentingan pribadi ketika kepentingan tersebut bertentangan dengan kepentingan kelompok yang lebih kuat | 1 | 2 | 3 | 4 | 5 | 6 |

## BAGIAN 3: CUSTOMER SATISFACTION

| | ***Pernyataan-pernyataan dibawah ini berkenaan dengan produk yang telah anda beli seperti pakaian, sepatu dan tas. Tunjukkan pendapat anda dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.*** | **Sama Sekali Tidak Setuju** | | | | | **Setuju Sekali** |
|---|---|---|---|---|---|---|---|
| 1 | Kinerja produk yang saya beli melebihi harapan saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Secara keseluruhan saya merasa puas dengan produk yang saya beli | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Produk yang saya beli tersebut adalah produk yang paling baik dibandingkan dengan produk sejenis lainnya | 1 | 2 | 3 | 4 | 5 | 6 |

## BAGIAN 4: WORD OF MOUTH COMMUNICATION (IN-GROUP)

| | ***Pernyataan-pernyataan dibawah ini berkenaan dengan kebiasaan anda membicarakan merek atau produk dengan orang lain. Tunjukkan pendapat anda dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.*** | **Sama Sekali Tidak Setuju** | | | | | **Setuju Sekali** |
|---|---|---|---|---|---|---|---|
| 1 | Saya suka memperkenalkan merek dan produk baru kepada teman dekat atau keluarga saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Saya hanya memberikan informasi tentang merek dan produk baru kepada teman dekat atau keluarga saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Saya suka mencari informasi atau saran hanya dari teman dekat atau keluarga saya ketika akan memutuskan pembelian sebuah produk | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | Saya hanya mencari informasi tentang sebuah produk yang akan saya beli dari teman dekat atau keluarga saya | 1 | 2 | 3 | 4 | 5 | 6 |

**Catatan:** 1 = Sama Sekali Tidak Setuju 2 = Tidak Setuju 3 = Agak Tidak Setuju
4 = Agak Setuju 5 = Setuju 6 = Setuju Sekali

## BAGIAN 5: WORD OF MOUTH COMMUNICATION (OUT-GROUP)

| | ***Pernyataan-pernyataan dibawah ini berkenaan dengan kebiasaan anda membicarakan merek atau produk dengan orang lain. Tunjukkan pendapat anda dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.*** | **Sama Sekali Tidak Setuju** | | | | | **Setuju Sekali** |
|---|---|---|---|---|---|---|---|
| 1 | Saya lebih suka memperkenalkan merek dan produk baru kepada orang lain daripada kepada teman dekat atau keluarga saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 2 | Saya lebih suka berbagi informasi tentang merek dan produk baru dengan orang lain daripada dengan teman dekat atau keluarga saya | 1 | 2 | 3 | 4 | 5 | 6 |
| 3 | Saya lebih suka meminta saran dari orang lain daripada dari teman dekat atau keluarga saya tentang merek yang akan saya beli | 1 | 2 | 3 | 4 | 5 | 6 |
| 4 | Saya lebih suka mencari informasi dan saran dari orang lain daripada dari teman dekat atau keluarga saya sebelum saya memutuskan pembelian suatu produk | 1 | 2 | 3 | 4 | 5 | 6 |

## BAGIAN 6: KARAKTERISTIK DEMOGRAFI

***Pertanyaan berikut berkenaan dengan informasi personal anda. Jawablah pertanyaan tersebut dengan memberi tanda silang (X) pada nomor yang anda anggap paling sesuai.***

1. Berapa usia anda pada ulang tahun terakhir ?
   1. kurang dari 20
   2. 20 – 25
   3. 26 – 30
   4. 31 – 35
   5. 36 – 40
   6. lebih dari 40

2. Apa jenis kelamin anda?
   1. Laki-laki
   2. Perempuan

3. Apa pendidikan terakhir anda?
   1. SD
   2. SMP
   3. SMA
   4. Diploma
   5. Sarjana
   6. Pasca Sarjana

4. Apa pekerjaan anda?
   1. Pegawai Negeri Sipil
   2. TNI/POLRI
   3. Pegawai Swasta
   4. Wiraswasta
   5. Ibu Rumah Tangga
   6. Mahasiswa

5. Berapa penghasilan (keluarga) anda setiap bulan?
   1. kurang dari Rp1 juta
   2. Rp1 juta – Rp1,5 juta
   3. Rp1,51 juta – Rp2 juta
   4. Rp2,01 juta – Rp2,5 juta
   5. Rp2,51 juta – Rp3 juta
   6. Rp3,01 juta – Rp3,5 juta
   7. Rp3,51 juta – Rp4 juta
   8. lebih dari p4 juta

# APPENDIX B
# LIST OF 160 SAMPLES

## THE LIST 160 SAMPLES

| Respondent | ILC1 | ILC2 | ILC3 | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 5 | 5 | 3 | 3 | 2 | 2 | 2 | 4 | 3 | 4 | 2 | 4 |
| 2 | 6 | 5 | 6 | 3 | 3 | 3 | 1 | 1 | 1 | 4 | 5 | 4 | 6 |
| 3 | 5 | 5 | 5 | 4 | 2 | 2 | 4 | 4 | 2 | 2 | 5 | 5 | 5 |
| 4 | 6 | 6 | 4 | 3 | 4 | 3 | 2 | 4 | 3 | 4 | 4 | 5 | 5 |
| 5 | 6 | 6 | 5 | 4 | 3 | 1 | 2 | 1 | 3 | 3 | 3 | 3 | 2 |
| 6 | 5 | 5 | 2 | 5 | 4 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| 7 | 5 | 4 | 3 | 6 | 2 | 2 | 1 | 1 | 1 | 5 | 5 | 2 | 1 |
| 8 | 5 | 5 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 5 | 5 | 5 |
| 9 | 5 | 5 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 |
| 10 | 6 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 2 | 4 | 6 | 6 | 6 |
| 11 | 6 | 6 | 4 | 4 | 2 | 2 | 2 | 1 | 3 | 4 | 5 | 5 | 6 |
| 12 | 6 | 6 | 4 | 5 | 6 | 4 | 3 | 1 | 3 | 5 | 5 | 5 | 5 |
| 13 | 4 | 4 | 2 | 4 | 4 | 5 | 3 | 3 | 3 | 3 | 4 | 3 | 3 |
| 14 | 5 | 5 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| 15 | 6 | 6 | 5 | 6 | 5 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 |
| 16 | 6 | 5 | 3 | 5 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 5 | 4 |
| 17 | 6 | 6 | 3 | 6 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 6 | 6 |
| 18 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 3 |
| 19 | 6 | 5 | 1 | 3 | 3 | 2 | 1 | 1 | 1 | 2 | 5 | 4 | 5 |
| 20 | 6 | 6 | 4 | 5 | 3 | 4 | 2 | 1 | 2 | 4 | 5 | 5 | 5 |
| 21 | 6 | 5 | 5 | 2 | 3 | 3 | 2 | 2 | 3 | 5 | 5 | 4 | 5 |
| 22 | 6 | 6 | 4 | 5 | 4 | 4 | 1 | 1 | 3 | 3 | 4 | 3 | 5 |
| 23 | 5 | 5 | 5 | 4 | 4 | 2 | 2 | 2 | 3 | 3 | 5 | 4 | 3 |
| 24 | 6 | 5 | 5 | 4 | 4 | 3 | 2 | 2 | 4 | 4 | 4 | 5 | 5 |
| 25 | 5 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 |
| 26 | 6 | 5 | 3 | 3 | 5 | 1 | 1 | 2 | 3 | 2 | 3 | 4 | 4 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | 4 | 4 | 4 | 2 | 2 | 4 | 1 | 2 | 4 | 2 | 3 | 2 | 4 |
| 28 | 5 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 5 |
| 29 | 5 | 5 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 4 | 4 | 4 | 4 |
| 30 | 5 | 5 | 5 | 2 | 3 | 5 | 2 | 2 | 2 | 5 | 5 | 5 | 5 |
| 31 | 6 | 3 | 3 | 5 | 5 | 4 | 4 | 3 | 4 | 2 | 5 | 5 | 2 |
| 32 | 1 | 5 | 5 | 1 | 5 | 2 | 2 | 3 | 2 | 6 | 3 | 4 | 1 |
| 33 | 6 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 2 | 2 |
| 34 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 |
| 35 | 6 | 6 | 4 | 5 | 6 | 4 | 4 | 3 | 4 | 4 | 5 | 6 | 6 |
| 36 | 6 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 3 | 2 | 4 | 3 | 2 |
| 37 | 4 | 6 | 2 | 5 | 4 | 6 | 2 | 2 | 4 | 4 | 4 | 4 | 4 |
| 38 | 5 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 5 | 5 | 5 | 5 | 2 |
| 39 | 6 | 6 | 3 | 2 | 5 | 5 | 1 | 1 | 2 | 4 | 5 | 5 | 5 |
| 40 | 6 | 5 | 1 | 5 | 3 | 3 | 2 | 4 | 2 | 4 | 4 | 4 | 2 |
| 41 | 6 | 6 | 5 | 4 | 3 | 3 | 1 | 1 | 2 | 3 | 4 | 5 | 4 |
| 42 | 5 | 5 | 2 | 5 | 5 | 2 | 1 | 1 | 5 | 2 | 5 | 5 | 5 |
| 43 | 6 | 6 | 2 | 5 | 2 | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 5 |
| 44 | 6 | 5 | 4 | 5 | 4 | 1 | 3 | 2 | 5 | 5 | 3 | 4 | 5 |
| 45 | 5 | 4 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 4 |
| 46 | 5 | 5 | 5 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 4 | 5 |
| 47 | 6 | 6 | 3 | 5 | 5 | 3 | 1 | 1 | 1 | 3 | 3 | 5 | 5 |
| 48 | 2 | 2 | 1 | 4 | 1 | 2 | 4 | 3 | 4 | 3 | 3 | 2 | 1 |
| 49 | 4 | 5 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 |
| 50 | 6 | 6 | 6 | 3 | 3 | 1 | 2 | 2 | 2 | 2 | 4 | 3 | 3 |
| 51 | 5 | 6 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 6 |
| 52 | 4 | 4 | 3 | 2 | 4 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 |
| 53 | 5 | 5 | 3 | 4 | 2 | 4 | 2 | 2 | 3 | 3 | 5 | 3 | 2 |
| 54 | 2 | 5 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 5 | 4 | 4 |
| 55 | 5 | 2 | 1 | 5 | 2 | 2 | 2 | 2 | 5 | 3 | 4 | 4 | 5 |
| 56 | 6 | 6 | 2 | 2 | 2 | 2 | 1 | 2 | 5 | 2 | 4 | 3 | 3 |
| 57 | 5 | 5 | 4 | 5 | 4 | 3 | 1 | 1 | 3 | 5 | 4 | 4 | 5 |
| 58 | 5 | 1 | 1 | 4 | 4 | 1 | 1 | 1 | 1 | 4 | 5 | 6 | 6 |
| 59 | 5 | 5 | 5 | 4 | 2 | 1 | 1 | 1 | 1 | 4 | 4 | 2 | 1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | 6 | 6 | 4 | 2 | 5 | 1 | 1 | 2 | 3 | 1 | 5 | 5 | 6 |
| 61 | 4 | 5 | 5 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 |
| 62 | 6 | 4 | 2 | 3 | 2 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 5 |
| 63 | 3 | 6 | 4 | 3 | 3 | 4 | 3 | 3 | 5 | 4 | 4 | 4 | 4 |
| 64 | 5 | 2 | 2 | 5 | 2 | 3 | 2 | 2 | 3 | 2 | 5 | 5 | 5 |
| 65 | 3 | 4 | 3 | 4 | 2 | 2 | 2 | 2 | 2 | 3 | 5 | 5 | 5 |
| 66 | 6 | 5 | 2 | 4 | 3 | 3 | 3 | 2 | 5 | 4 | 5 | 3 | 5 |
| 67 | 6 | 5 | 3 | 5 | 3 | 2 | 3 | 2 | 4 | 3 | 4 | 4 | 5 |
| 68 | 2 | 5 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 | 5 | 3 | 3 |
| 69 | 5 | 6 | 4 | 3 | 5 | 5 | 2 | 3 | 5 | 3 | 4 | 5 | 5 |
| 70 | 2 | 5 | 2 | 2 | 2 | 5 | 2 | 5 | 2 | 2 | 5 | 5 | 5 |
| 71 | 5 | 5 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 2 |
| 72 | 5 | 4 | 3 | 5 | 5 | 5 | 3 | 3 | 5 | 2 | 2 | 4 | 3 |
| 73 | 5 | 5 | 3 | 4 | 5 | 5 | 3 | 3 | 4 | 5 | 5 | 4 | 2 |
| 74 | 5 | 5 | 4 | 6 | 6 | 4 | 1 | 1 | 4 | 3 | 6 | 3 | 3 |
| 75 | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 4 |
| 76 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| 77 | 5 | 6 | 5 | 3 | 3 | 3 | 2 | 2 | 4 | 4 | 4 | 5 | 6 |
| 78 | 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 4 | 2 | 4 | 4 | 4 |
| 79 | 3 | 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 5 |
| 80 | 4 | 5 | 2 | 5 | 4 | 5 | 3 | 2 | 2 | 4 | 5 | 3 | 5 |
| 81 | 6 | 6 | 6 | 1 | 1 | 2 | 2 | 3 | 2 | 4 | 3 | 4 | 3 |
| 82 | 2 | 6 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 4 | 5 | 6 | 1 |
| 83 | 6 | 4 | 1 | 4 | 1 | 1 | 1 | 3 | 5 | 5 | 6 | 5 | 2 |
| 84 | 5 | 5 | 2 | 4 | 2 | 2 | 2 | 5 | 5 | 4 | 3 | 3 | 5 |
| 85 | 5 | 6 | 5 | 4 | 5 | 5 | 2 | 3 | 3 | 4 | 5 | 5 | 4 |
| 86 | 6 | 6 | 4 | 3 | 5 | 4 | 2 | 1 | 5 | 4 | 5 | 4 | 4 |
| 87 | 5 | 6 | 1 | 2 | 1 | 2 | 2 | 2 | 5 | 4 | 5 | 2 | 5 |
| 88 | 6 | 6 | 5 | 3 | 2 | 1 | 2 | 2 | 4 | 3 | 4 | 3 | 2 |
| 89 | 6 | 6 | 3 | 4 | 2 | 5 | 2 | 1 | 5 | 3 | 5 | 5 | 5 |
| 90 | 6 | 5 | 1 | 6 | 3 | 1 | 5 | 1 | 5 | 1 | 4 | 4 | 1 |
| 91 | 6 | 1 | 1 | 5 | 4 | 4 | 3 | 3 | 4 | 4 | 6 | 3 | 1 |
| 92 | 3 | 5 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 4 |

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| 93 | 2 | 1 | 2 | 2 | 2 | 3 | 1 | 1 | 1 | 3 | 5 | 4 | 6 |
| 94 | 2 | 4 | 1 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 5 | 4 | 5 |
| 95 | 5 | 6 | 5 | 4 | 1 | 1 | 1 | 1 | 2 | 5 | 5 | 4 | 2 |
| 96 | 5 | 6 | 1 | 6 | 3 | 2 | 1 | 1 | 2 | 2 | 3 | 2 | 1 |
| 97 | 6 | 6 | 6 | 1 | 2 | 2 | 2 | 2 | 3 | 2 | 6 | 6 | 6 |
| 98 | 6 | 6 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 3 | 5 | 4 | 2 |
| 99 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 4 | 4 |
| 100 | 6 | 6 | 5 | 5 | 6 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 |
| 101 | 5 | 3 | 1 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 5 | 5 | 5 |
| 102 | 6 | 5 | 3 | 5 | 3 | 3 | 3 | 2 | 3 | 3 | 5 | 4 | 5 |
| 103 | 4 | 4 | 3 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 3 |
| 104 | 6 | 3 | 6 | 6 | 3 | 1 | 1 | 1 | 2 | 3 | 4 | 1 | 4 |
| 105 | 6 | 5 | 4 | 2 | 3 | 4 | 1 | 1 | 4 | 4 | 4 | 5 | 5 |
| 106 | 6 | 6 | 5 | 2 | 2 | 5 | 2 | 1 | 2 | 5 | 5 | 5 | 5 |
| 107 | 5 | 4 | 2 | 2 | 4 | 2 | 2 | 3 | 3 | 3 | 5 | 5 | 4 |
| 108 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 4 | 5 |
| 109 | 4 | 2 | 2 | 4 | 3 | 6 | 6 | 6 | 5 | 4 | 5 | 2 | 4 |
| 110 | 1 | 1 | 1 | 1 | 5 | 1 | 1 | 1 | 2 | 2 | 5 | 4 | 2 |
| 111 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 6 | 6 | 6 |
| 112 | 6 | 6 | 5 | 1 | 2 | 1 | 1 | 1 | 4 | 4 | 4 | 3 | 4 |
| 113 | 5 | 5 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 |
| 114 | 5 | 4 | 2 | 6 | 2 | 1 | 1 | 1 | 4 | 5 | 4 | 5 | 5 |
| 115 | 5 | 3 | 2 | 4 | 4 | 2 | 2 | 2 | 5 | 4 | 4 | 5 | 4 |
| 116 | 5 | 5 | 3 | 4 | 3 | 3 | 2 | 2 | 4 | 3 | 4 | 2 | 1 |
| 117 | 3 | 5 | 1 | 4 | 5 | 4 | 1 | 3 | 4 | 1 | 4 | 2 | 5 |
| 118 | 6 | 6 | 3 | 3 | 4 | 4 | 3 | 2 | 3 | 2 | 3 | 4 | 5 |
| 119 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 2 | 6 | 1 | 4 |
| 120 | 4 | 4 | 2 | 6 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 1 | 4 |
| 121 | 2 | 6 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 6 | 6 | 5 |
| 122 | 4 | 5 | 1 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | 4 | 2 |
| 123 | 6 | 1 | 1 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 6 |
| 124 | 6 | 6 | 5 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 5 | 5 | 6 |
| 125 | 6 | 5 | 2 | 5 | 2 | 2 | 1 | 1 | 4 | 4 | 4 | 6 | 2 |

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| 126 | 5 | 5 | 3 | 5 | 4 | 2 | 1 | 1 | 1 | 2 | 5 | 2 | 2 |
| 127 | 6 | 4 | 3 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 2 | 3 | 4 |
| 128 | 5 | 5 | 5 | 5 | 4 | 3 | 2 | 2 | 5 | 4 | 5 | 5 | 5 |
| 129 | 6 | 5 | 3 | 5 | 3 | 4 | 2 | 3 | 3 | 2 | 3 | 2 | 4 |
| 130 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 2 | 2 | 5 | 3 | 2 | 4 |
| 131 | 5 | 5 | 4 | 5 | 4 | 3 | 2 | 2 | 3 | 4 | 3 | 3 | 4 |
| 132 | 6 | 3 | 3 | 5 | 3 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 5 |
| 133 | 6 | 6 | 6 | 6 | 2 | 2 | 2 | 1 | 2 | 3 | 4 | 4 | 4 |
| 134 | 3 | 4 | 5 | 4 | 3 | 4 | 2 | 2 | 5 | 4 | 4 | 3 | 2 |
| 135 | 4 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 4 |
| 136 | 2 | 6 | 1 | 6 | 3 | 3 | 2 | 2 | 3 | 4 | 5 | 2 | 1 |
| 137 | 4 | 4 | 2 | 5 | 4 | 4 | 2 | 1 | 1 | 2 | 5 | 5 | 6 |
| 138 | 5 | 5 | 2 | 6 | 4 | 2 | 2 | 2 | 5 | 3 | 3 | 2 | 1 |
| 139 | 5 | 5 | 6 | 4 | 2 | 2 | 2 | 1 | 2 | 3 | 5 | 3 | 3 |
| 140 | 3 | 4 | 2 | 2 | 3 | 4 | 4 | 2 | 2 | 2 | 4 | 2 | 4 |
| 141 | 4 | 4 | 2 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 5 | 2 | 2 |
| 142 | 4 | 4 | 2 | 5 | 2 | 2 | 2 | 1 | 4 | 4 | 5 | 5 | 5 |
| 143 | 6 | 6 | 2 | 5 | 5 | 5 | 2 | 5 | 2 | 5 | 5 | 5 | 5 |
| 144 | 6 | 5 | 2 | 3 | 4 | 4 | 4 | 5 | 2 | 5 | 5 | 3 | 3 |
| 145 | 6 | 6 | 6 | 6 | 5 | 5 | 2 | 2 | 5 | 5 | 5 | 5 | 5 |
| 146 | 1 | 2 | 2 | 5 | 4 | 4 | 5 | 5 | 4 | 4 | 3 | 5 | 6 |
| 147 | 3 | 3 | 2 | 4 | 3 | 5 | 5 | 4 | 4 | 3 | 3 | 4 | 2 |
| 148 | 4 | 4 | 4 | 5 | 6 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 |
| 149 | 4 | 5 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 | 5 | 5 | 3 |
| 150 | 3 | 5 | 5 | 2 | 2 | 3 | 2 | 3 | 1 | 4 | 4 | 4 | 2 |
| 151 | 5 | 5 | 4 | 5 | 4 | 2 | 5 | 1 | 2 | 6 | 5 | 5 | 6 |
| 152 | 6 | 5 | 2 | 5 | 4 | 5 | 5 | 3 | 2 | 5 | 4 | 4 | 5 |
| 153 | 6 | 5 | 2 | 4 | 4 | 3 | 1 | 1 | 3 | 3 | 2 | 3 | 4 |
| 154 | 4 | 3 | 2 | 5 | 4 | 5 | 1 | 1 | 2 | 2 | 5 | 3 | 5 |
| 155 | 4 | 6 | 2 | 4 | 2 | 2 | 2 | 2 | 1 | 6 | 5 | 4 | 2 |
| 156 | 6 | 4 | 2 | 5 | 4 | 2 | 4 | 2 | 5 | 4 | 5 | 5 | 4 |
| 157 | 6 | 5 | 4 | 4 | 4 | 4 | 2 | 2 | 6 | 4 | 3 | 5 | 5 |
| 158 | 2 | 3 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 4 | 5 | 3 | 2 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 159 | 5 | 4 | 4 | 4 | 3 | 3 | 2 | 1 | 1 | 4 | 4 | 4 | 2 |
| 160 | 6 | 5 | 5 | 2 | 3 | 3 | 2 | 4 | 2 | 4 | 5 | 5 | 5 |

**APPENDIX B (CONTINUE)**

**THE LIST 160 SAMPLES**

| Respondent | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 | CS1 | CS2 | CS3 | D1 | D2 | D3 | D4 | D5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 3 | 5 |
| 2 | 4 | 5 | 3 | 4 | 3 | 1 | 3 | 2 | 2 | 5 | 4 | 1 |
| 3 | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 2 | 5 | 3 | 3 |
| 4 | 4 | 4 | 6 | 3 | 2 | 2 | 3 | 3 | 1 | 5 | 4 | 3 |
| 5 | 6 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 1 | 5 | 6 | 1 |
| 6 | 3 | 4 | 3 | 2 | 1 | 1 | 1 | 3 | 2 | 4 | 5 | 1 |
| 7 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 2 | 4 | 3 | 1 |
| 8 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 6 |
| 9 | 5 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 1 | 5 | 4 | 8 |
| 10 | 1 | 6 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | 2 |
| 11 | 5 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 5 | 1 | 6 |
| 12 | 5 | 5 | 6 | 3 | 1 | 1 | 3 | 4 | 1 | 5 | 3 | 8 |
| 13 | 4 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 3 | 3 |
| 14 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 5 | 3 | 6 |
| 15 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 5 | 4 | 6 |
| 16 | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 2 | 5 | 3 | 1 |
| 17 | 3 | 5 | 3 | 3 | 2 | 2 | 2 | 1 | 2 | 3 | 5 | 2 |
| 18 | 5 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 2 | 3 |
| 19 | 5 | 5 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 2 | 3 |
| 20 | 5 | 6 | 3 | 4 | 4 | 3 | 4 | 2 | 2 | 3 | 6 | 1 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 5 | 5 | 5 | 3 | 3 | 2 | 2 | 5 | 1 | 5 | 3 | 8 |
| 22 | 5 | 5 | 4 | 2 | 2 | 2 | 1 | 2 | 2 | 3 | 6 | 8 |
| 23 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 1 | 3 | 6 | 1 |
| 24 | 4 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 6 | 1 |
| 25 | 4 | 5 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 6 | 5 |
| 26 | 5 | 5 | 4 | 2 | 2 | 2 | 2 | 3 | 2 | 5 | 4 | 2 |
| 27 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 4 | 1 |
| 28 | 5 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | 1 |
| 29 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 2 | 2 | 5 | 3 | 1 |
| 30 | 5 | 5 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 4 | 3 | 3 |
| 31 | 5 | 5 | 5 | 2 | 5 | 5 | 5 | 2 | 2 | 3 | 4 | 2 |
| 32 | 3 | 4 | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 3 | 4 | 6 |
| 33 | 2 | 3 | 2 | 2 | 3 | 4 | 3 | 3 | 1 | 6 | 3 | 8 |
| 34 | 4 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 6 | 8 |
| 35 | 5 | 6 | 4 | 5 | 4 | 6 | 6 | 1 | 2 | 3 | 6 | 8 |
| 36 | 3 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 5 | 6 | 8 |
| 37 | 2 | 4 | 2 | 2 | 4 | 4 | 2 | 3 | 2 | 3 | 3 | 1 |
| 38 | 3 | 2 | 2 | 5 | 5 | 5 | 3 | 5 | 2 | 4 | 1 | 6 |
| 39 | 5 | 5 | 5 | 4 | 5 | 4 | 4 | 2 | 2 | 5 | 6 | 2 |
| 40 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 3 | 3 |
| 41 | 4 | 5 | 5 | 1 | 1 | 5 | 5 | 2 | 2 | 5 | 6 | 1 |
| 42 | 5 | 5 | 2 | 2 | 2 | 2 | 5 | 6 | 2 | 5 | 4 | 2 |
| 43 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 3 |
| 44 | 5 | 3 | 1 | 4 | 5 | 5 | 3 | 2 | 1 | 5 | 3 | 2 |
| 45 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 2 | 1 | 5 | 3 | 2 |
| 46 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 4 | 1 | 5 | 3 | 7 |
| 47 | 5 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 5 | 3 | 3 |
| 48 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 2 | 5 | 3 | 2 |
| 49 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 1 | 5 | 3 | 5 |
| 50 | 3 | 3 | 4 | 2 | 2 | 2 | 2 | 4 | 2 | 5 | 4 | 7 |
| 51 | 4 | 4 | 4 | 4 | 1 | 1 | 2 | 3 | 1 | 5 | 3 | 3 |
| 52 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | 2 | 2 | 3 | 6 | 1 |
| 53 | 5 | 5 | 5 | 2 | 3 | 2 | 2 | 2 | 1 | 5 | 4 | 5 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 5 | 3 | 4 | |
| 55 | 2 | 2 | 3 | 1 | 2 | 2 | 2 | 2 | 1 | 5 | 4 | 1 | |
| 56 | 5 | 2 | 2 | 5 | 2 | 5 | 5 | 6 | 1 | 5 | 1 | 4 | |
| 57 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 5 | 5 | 8 | |
| 58 | 1 | 6 | 1 | 2 | 6 | 2 | 6 | 6 | 1 | 5 | 4 | 8 | |
| 59 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 5 | 6 | 6 | |
| 60 | 5 | 6 | 4 | 3 | 4 | 5 | 4 | 2 | 2 | 5 | 6 | 1 | |
| 61 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 2 | 1 | 5 | 3 | 4 | |
| 62 | 4 | 6 | 2 | 1 | 2 | 1 | 1 | 3 | 1 | 4 | 4 | 8 | |
| 63 | 4 | 5 | 5 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 2 | 4 | |
| 64 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 1 | 2 | 3 | 6 | 2 | |
| 65 | 3 | 5 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 5 | 3 | 8 | |
| 66 | 5 | 3 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 6 | 3 | |
| 67 | 5 | 5 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 6 | 2 | |
| 68 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 2 | 5 | 3 | 8 | |
| 69 | 4 | 5 | 3 | 4 | 5 | 6 | 5 | 2 | 2 | 4 | 4 | 2 | |
| 70 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 1 | 2 | 4 | 3 | 2 | |
| 71 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 1 | 5 | 3 | 3 | |
| 72 | 4 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 3 | 5 | |
| 73 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 5 | 4 | 7 | |
| 74 | 2 | 1 | 2 | 2 | 5 | 3 | 3 | 6 | 1 | 3 | 1 | 2 | |
| 75 | 4 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 4 | 4 | 2 | |
| 76 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 3 | 3 | |
| 77 | 1 | 6 | 1 | 5 | 5 | 3 | 3 | 2 | 2 | 5 | 6 | 7 | |
| 78 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 4 | 1 | 5 | 1 | 6 | |
| 79 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 2 | 2 | 3 | 6 | 1 | |
| 80 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 3 | 1 | |
| 81 | 2 | 2 | 3 | 4 | 5 | 5 | 4 | 3 | 1 | 5 | 3 | 4 | |
| 82 | 2 | 6 | 6 | 2 | 3 | 6 | 6 | 1 | 2 | 3 | 6 | 2 | |
| 83 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 6 | 3 | |
| 84 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 6 | 1 | |
| 85 | 4 | 4 | 4 | 2 | 3 | 2 | 3 | 4 | 1 | 3 | 2 | 3 | |
| 86 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 5 | 1 | 3 | 2 | 4 | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 87 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 2 |
| 88 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 1 | 5 | 3 | 3 |
| 89 | 2 | 3 | 3 | 1 | 3 | 1 | 3 | 2 | 1 | 4 | 3 | 2 |
| 90 | 4 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 3 | 6 | 2 |
| 91 | 1 | 6 | 3 | 1 | 1 | 4 | 4 | 1 | 1 | 3 | 6 | 4 |
| 92 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 5 | 3 | 1 |
| 93 | 3 | 6 | 6 | 1 | 1 | 2 | 2 | 3 | 2 | 5 | 4 | 2 |
| 94 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 3 | 1 |
| 95 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 3 | 6 | 8 |
| 96 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 3 | 6 | 2 |
| 97 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 1 | 5 | 1 | 8 |
| 98 | 5 | 5 | 4 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | 6 | 8 |
| 99 | 4 | 4 | 2 | 3 | 3 | 2 | 2 | 3 | 1 | 5 | 3 | 8 |
| 100 | 6 | 6 | 4 | 4 | 4 | 3 | 3 | 2 | 1 | 3 | 6 | 2 |
| 101 | 2 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 1 | 4 |
| 102 | 3 | 6 | 3 | 5 | 3 | 2 | 2 | 3 | 2 | 5 | 3 | 1 |
| 103 | 5 | 4 | 2 | 3 | 2 | 1 | 1 | 3 | 2 | 5 | 4 | 1 |
| 104 | 5 | 5 | 2 | 2 | 6 | 3 | 4 | 2 | 1 | 5 | 3 | 3 |
| 105 | 3 | 5 | 2 | 5 | 5 | 4 | 5 | 4 | 1 | 6 | 4 | 8 |
| 106 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 6 | 1 | 6 | 4 | 8 |
| 107 | 3 | 2 | 1 | 3 | 2 | 4 | 4 | 5 | 1 | 6 | 4 | 8 |
| 108 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 2 | 1 | 4 | 4 | 3 |
| 109 | 4 | 2 | 1 | 2 | 2 | 2 | 2 | 3 | 1 | 3 | 4 | 3 |
| 110 | 1 | 2 | 2 | 1 | 5 | 6 | 6 | 6 | 1 | 5 | 1 | 7 |
| 111 | 6 | 1 | 6 | 1 | 1 | 1 | 1 | 4 | 1 | 3 | 4 | 2 |
| 112 | 5 | 5 | 5 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 5 |
| 113 | 3 | 5 | 5 | 3 | 4 | 3 | 4 | 2 | 1 | 5 | 3 | 5 |
| 114 | 2 | 3 | 3 | 1 | 3 | 2 | 3 | 6 | 1 | 5 | 4 | 3 |
| 115 | 2 | 4 | 2 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 3 |
| 116 | 4 | 4 | 2 | 3 | 2 | 2 | 2 | 5 | 1 | 5 | 4 | 2 |
| 117 | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 2 | 2 |
| 118 | 5 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 2 | 5 | 6 | 1 |
| 119 | 4 | 1 | 1 | 3 | 3 | 1 | 1 | 2 | 1 | 3 | 6 | 1 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 120 | 2 | 5 | 3 | 4 | 5 | 4 | 5 | 2 | 1 | 5 | 4 | 1 |
| 121 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 3 | 1 |
| 122 | 3 | 1 | 4 | 5 | 1 | 1 | 4 | 2 | 2 | 3 | 3 | 1 |
| 123 | 6 | 1 | 1 | 6 | 1 | 6 | 1 | 6 | 1 | 1 | 1 | 1 |
| 124 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 8 |
| 125 | 5 | 5 | 2 | 5 | 5 | 2 | 5 | 1 | 2 | 3 | 4 | 1 |
| 126 | 4 | 5 | 5 | 5 | 5 | 2 | 2 | 4 | 2 | 3 | 5 | 1 |
| 127 | 4 | 5 | 5 | 3 | 4 | 5 | 3 | 2 | 1 | 3 | 6 | 3 |
| 128 | 5 | 4 | 4 | 3 | 3 | 2 | 2 | 2 | 1 | 5 | 6 | 1 |
| 129 | 4 | 5 | 5 | 2 | 4 | 2 | 5 | 2 | 2 | 5 | 6 | 2 |
| 130 | 4 | 5 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 6 | 2 |
| 131 | 4 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 6 | 1 |
| 132 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 6 | 1 |
| 133 | 5 | 4 | 4 | 2 | 3 | 2 | 2 | 2 | 1 | 3 | 6 | 1 |
| 134 | 4 | 5 | 4 | 5 | 2 | 2 | 3 | 6 | 1 | 2 | 1 | 3 |
| 135 | 2 | 2 | 2 | 2 | 3 | 4 | 5 | 2 | 2 | 5 | 3 | 1 |
| 136 | 3 | 3 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 1 |
| 137 | 5 | 2 | 2 | 1 | 1 | 1 | 3 | 4 | 2 | 6 | 3 | 8 |
| 138 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 6 | 3 |
| 139 | 3 | 2 | 3 | 5 | 4 | 2 | 3 | 3 | 1 | 4 | 6 | 2 |
| 140 | 3 | 2 | 4 | 2 | 3 | 3 | 3 | 6 | 2 | 5 | 4 | 8 |
| 141 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 5 | 6 | 2 |
| 142 | 2 | 4 | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 5 | 6 | 1 |
| 143 | 5 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | 1 |
| 144 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | 1 |
| 145 | 4 | 4 | 2 | 6 | 6 | 5 | 5 | 6 | 2 | 6 | 4 | 1 |
| 146 | 6 | 5 | 5 | 3 | 3 | 2 | 2 | 3 | 1 | 4 | 1 | 3 |
| 147 | 2 | 1 | 1 | 3 | 3 | 4 | 4 | 3 | 1 | 5 | 4 | 3 |
| 148 | 4 | 5 | 6 | 4 | 4 | 3 | 3 | 2 | 1 | 5 | 1 | 2 |
| 149 | 4 | 3 | 3 | 5 | 4 | 5 | 4 | 4 | 1 | 5 | 3 | 4 |
| 150 | 1 | 2 | 3 | 4 | 5 | 4 | 4 | 2 | 2 | 5 | 4 | 5 |
| 151 | 5 | 6 | 5 | 1 | 1 | 1 | 1 | 6 | 1 | 5 | 3 | 5 |
| 152 | 4 | 5 | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 1 | 2 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 153 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 2 | 3 |
| 154 | 2 | 5 | 3 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 3 | 1 |
| 155 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 2 | 1 | 3 | 4 | 8 |
| 156 | 5 | 6 | 4 | 3 | 2 | 2 | 3 | 3 | 1 | 5 | 4 | 2 |
| 157 | 4 | 5 | 4 | 4 | 4 | 3 | 4 | 3 | 1 | 3 | 4 | 1 |
| 158 | 3 | 3 | 3 | 4 | 4 | 5 | 5 | 3 | 1 | 5 | 4 | 5 |
| 159 | 2 | 3 | 2 | 3 | 3 | 4 | 4 | 2 | 2 | 5 | 4 | 3 |
| 160 | 4 | 4 | 4 | 2 | 3 | 3 | 2 | 3 | 1 | 4 | 3 | 2 |

# APPENDIX C
# LIST OF 35 OUTLIERS

## THE LIST 35 REMOVED OUTLIER

| Respondent | ILC1 | ILC2 | ILC3 | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 5 | 5 | 5 | 4 | 2 | 2 | 4 | 4 | 2 | 2 | 5 | 5 | 5 |
| 7 | 5 | 4 | 3 | 6 | 2 | 2 | 1 | 1 | 1 | 5 | 5 | 2 | 1 |
| 8 | 5 | 5 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 5 | 5 | 5 |
| 18 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 6 | 3 |
| 31 | 6 | 3 | 3 | 5 | 5 | 4 | 4 | 3 | 4 | 2 | 5 | 5 | 2 |
| 32 | 1 | 5 | 5 | 1 | 5 | 2 | 2 | 3 | 2 | 6 | 3 | 4 | 1 |
| 42 | 5 | 5 | 2 | 5 | 5 | 2 | 1 | 1 | 5 | 2 | 5 | 5 | 5 |
| 46 | 5 | 5 | 5 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 4 | 4 | 5 |
| 58 | 5 | 1 | 1 | 4 | 4 | 1 | 1 | 1 | 1 | 4 | 5 | 6 | 6 |
| 60 | 6 | 6 | 4 | 2 | 5 | 1 | 1 | 2 | 3 | 1 | 5 | 5 | 6 |
| 64 | 5 | 2 | 2 | 5 | 2 | 3 | 2 | 2 | 3 | 2 | 5 | 5 | 5 |
| 70 | 2 | 5 | 2 | 2 | 2 | 5 | 2 | 5 | 2 | 2 | 5 | 5 | 5 |
| 82 | 2 | 6 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 4 | 5 | 6 | 1 |
| 87 | 5 | 6 | 1 | 2 | 1 | 2 | 2 | 2 | 5 | 4 | 5 | 2 | 5 |
| 90 | 6 | 5 | 1 | 6 | 3 | 1 | 5 | 1 | 5 | 1 | 4 | 4 | 1 |
| 91 | 6 | 1 | 1 | 5 | 4 | 4 | 3 | 3 | 4 | 4 | 6 | 3 | 1 |
| 97 | 6 | 6 | 6 | 1 | 2 | 2 | 2 | 2 | 3 | 2 | 6 | 6 | 6 |
| 101 | 5 | 3 | 1 | 4 | 5 | 1 | 1 | 1 | 1 | 2 | 5 | 5 | 5 |
| 103 | 4 | 4 | 3 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 3 |
| 104 | 6 | 3 | 6 | 6 | 3 | 1 | 1 | 1 | 2 | 3 | 4 | 1 | 4 |
| 107 | 5 | 4 | 2 | 2 | 4 | 2 | 2 | 3 | 3 | 3 | 5 | 5 | 4 |
| 109 | 4 | 2 | 2 | 4 | 3 | 6 | 6 | 6 | 5 | 4 | 5 | 2 | 4 |
| 116 | 5 | 5 | 3 | 4 | 3 | 3 | 2 | 2 | 4 | 3 | 4 | 2 | 1 |
| 117 | 3 | 5 | 1 | 4 | 5 | 4 | 1 | 3 | 4 | 1 | 4 | 2 | 5 |
| 119 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 2 | 6 | 1 | 4 |
| 120 | 4 | 4 | 2 | 6 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 1 | 4 |
| 122 | 4 | 5 | 1 | 2 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | 4 | 2 |
| 123 | 6 | 1 | 1 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 6 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 124 | 6 | 6 | 5 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 5 | 5 | 6 |
| 126 | 5 | 5 | 3 | 5 | 4 | 2 | 1 | 1 | 1 | 2 | 5 | 2 | 2 |
| 130 | 5 | 5 | 5 | 5 | 3 | 4 | 4 | 2 | 2 | 5 | 3 | 2 | 4 |
| 136 | 2 | 6 | 1 | 6 | 3 | 3 | 2 | 2 | 3 | 4 | 5 | 2 | 1 |
| 137 | 4 | 4 | 2 | 5 | 4 | 4 | 2 | 1 | 1 | 2 | 5 | 5 | 6 |
| 140 | 3 | 4 | 2 | 2 | 3 | 4 | 4 | 2 | 2 | 2 | 4 | 2 | 4 |
| 154 | 4 | 3 | 2 | 5 | 4 | 5 | 1 | 1 | 2 | 2 | 5 | 3 | 5 |

## APPENDIX C (CONTINUE)

| Respondent | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 | CS1 | CS2 | CS3 | D1 | D2 | D3 | D4 | D5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 5 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 2 | 5 | 3 | 3 |
| 7 | 4 | 5 | 5 | 1 | 2 | 1 | 1 | 2 | 2 | 4 | 3 | 1 |
| 8 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 6 |
| 18 | 5 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 2 | 3 |
| 31 | 5 | 5 | 5 | 2 | 5 | 5 | 5 | 2 | 2 | 3 | 4 | 2 |
| 32 | 3 | 4 | 2 | 2 | 2 | 4 | 2 | 2 | 2 | 3 | 4 | 6 |
| 42 | 5 | 5 | 2 | 2 | 2 | 2 | 5 | 6 | 2 | 5 | 4 | 2 |
| 46 | 2 | 2 | 2 | 3 | 3 | 2 | 2 | 4 | 1 | 5 | 3 | 7 |
| 58 | 1 | 6 | 1 | 2 | 6 | 2 | 6 | 6 | 1 | 5 | 4 | 8 |
| 60 | 5 | 6 | 4 | 3 | 4 | 5 | 4 | 2 | 2 | 5 | 6 | 1 |
| 64 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 1 | 2 | 3 | 6 | 2 |
| 70 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 1 | 2 | 4 | 3 | 2 |
| 82 | 2 | 6 | 6 | 2 | 3 | 6 | 6 | 1 | 2 | 3 | 6 | 2 |
| 87 | 2 | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 2 |
| 90 | 4 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | 3 | 6 | 2 |
| 91 | 1 | 6 | 3 | 1 | 1 | 4 | 4 | 1 | 1 | 3 | 6 | 4 |
| 97 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 1 | 5 | 1 | 8 |
| 101 | 2 | 5 | 5 | 2 | 2 | 2 | 2 | 2 | 2 | 6 | 1 | 4 |
| 103 | 5 | 4 | 2 | 3 | 2 | 1 | 1 | 3 | 2 | 5 | 4 | 1 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 104 | 5 | 5 | 2 | 2 | 6 | 3 | 4 | 2 | 1 | 5 | 3 | 3 |
| 107 | 3 | 2 | 1 | 3 | 2 | 4 | 4 | 5 | 1 | 6 | 4 | 8 |
| 109 | 4 | 2 | 1 | 2 | 2 | 2 | 2 | 3 | 1 | 3 | 4 | 3 |
| 116 | 4 | 4 | 2 | 3 | 2 | 2 | 2 | 5 | 1 | 5 | 4 | 2 |
| 117 | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | 2 | 2 |
| 119 | 4 | 1 | 1 | 3 | 3 | 1 | 1 | 2 | 1 | 3 | 6 | 1 |
| 120 | 2 | 5 | 3 | 4 | 5 | 4 | 5 | 2 | 1 | 5 | 4 | 1 |
| 122 | 3 | 1 | 4 | 5 | 1 | 1 | 4 | 2 | 2 | 3 | 3 | 1 |
| 123 | 6 | 1 | 1 | 6 | 1 | 6 | 1 | 6 | 1 | 1 | 1 | 1 |
| 124 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 1 | 5 | 3 | 8 |
| 126 | 4 | 5 | 5 | 5 | 5 | 2 | 2 | 4 | 2 | 3 | 5 | 1 |
| 130 | 4 | 5 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 5 | 6 | 2 |
| 136 | 3 | 3 | 5 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 3 | 1 |
| 137 | 5 | 2 | 2 | 1 | 1 | 1 | 3 | 4 | 2 | 6 | 3 | 8 |
| 140 | 3 | 2 | 4 | 2 | 3 | 3 | 3 | 6 | 2 | 5 | 4 | 8 |
| 154 | 2 | 5 | 3 | 1 | 1 | 2 | 2 | 3 | 1 | 3 | 3 | 1 |

# APPENDIX D

# MEASUREMENT MODEL CONFIRMATORY FACTOR ANALYSIS

DATE: 7/31/2007
TIME: 18:59

L I S R E L 8.30

BY

Karl G. Jöreskog and [illegible]



The following lines were read from file C:\CONGEN\CS\CS.LS8:

```
one congenen
DA NI=3 NO=125 MA=pm
LA
CS1 CS2 CS3
pm=C:\congen\CS\CS.pmm
ac=C:\congen\CS\CS.acm
SE
1 2 3 /
MO NX=3 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
CS
PD
OU MI FS SS AD=OFF
```

Number of Input Variables 3
Number of Y - Variables 0
Number of X - Variables 3
Number of ETA - Variables 0
Number of KSI - Variables 1
Number of Observations 125

## Correlation Matrix to be Analyzed

| | CS1 | CS2 | CS3 |
|---|---|---|---|
| CS1 | 1.00 | | |
| CS2 | 0.57 | 1.00 | |
| CS3 | 0.56 | 0.51 | 1.00 |

*CUSTOMER SATISFACTION CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

### LAMBDA-X

| | CS |
|---|---|
| CS1 | 1 |
| CS2 | 2 |
| CS3 | 3 |

### THETA-DELTA

| CS1 | CS2 | CS3 |
|---|---|---|
| 4 | 5 | 6 |

*CUSTOMER SATISFACTION CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 7

## LISREL Estimates (Weighted Least Squares)

### LAMBDA-X

| | CS |
|---|---|
| CS1 | 0.79 |
| | (0.05) |
| | 14.32 |
| CS2 | 0.72 |
| | (0.06) |
| | 11.26 |

| | |
|---|---|
| CS3 | 0.71 |
| | (0.07) |
| | 9.99 |

**PHI**

| CS |
|---|
| 1.00 |

**THETA-DELTA**

| CS1 | CS2 | CS3 |
|---|---|---|
| 0.38 | 0.48 | 0.49 |
| (0.12) | (0.13) | (0.14) |
| 3.08 | 3.71 | 3.64 |

**Squared Multiple Correlations for X - Variables**

| CS1 | CS2 | CS3 |
|---|---|---|
| 0.62 | 0.52 | 0.51 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

*CUSTOMER SATISFACTION CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-DELTA

## Factor Scores Regressions

### KSI

| | CS1 | [illegible] | [illegible] |
|---|---|---|---|
| CS | 0.43 | 0.32 | 0.31 |

*CUSTOMER SATISFACTION CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

### LAMBDA-X

| | CS |
|---|---|
| CS1 | 0.79 |
| CS2 | 0.72 |
| CS3 | 0.71 |

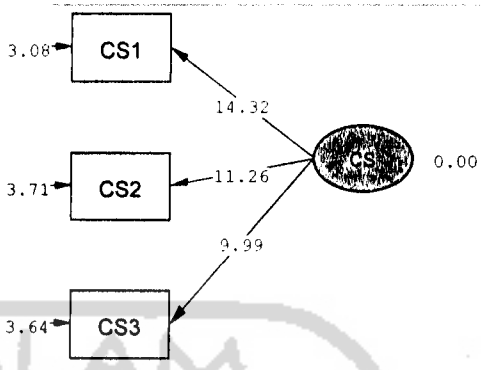
### PHI

| CS |
|---|
| 1.00 |

The Problem used [illegible] Bytes ([illegible]) of available Workspace

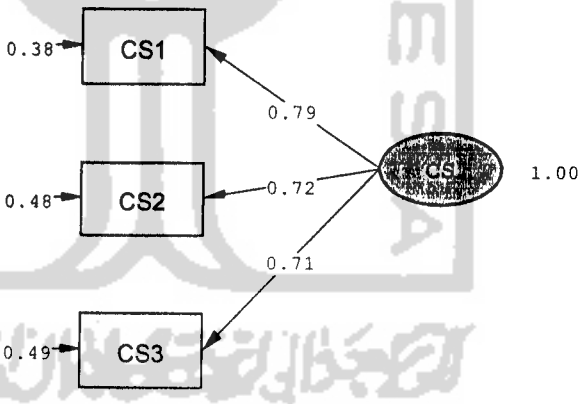
Time used: [illegible] Seconds

**Path diagram (t-values)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 20:11

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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Chicago, IL 60646-1704, U.S.A.
Phone: (800)247-6113, (847)675-0720, Fax: (847)675-2140


The following lines were read from file **C:\CONGEN\ELC\ELC.LS8:**

```
ONE CONGEN
DA NI=6 NO=125 MA=PM
LA
ELC1 ELC2 ELC3 ELC4 ELC5 ELC6
PM=C:\CONGEN\ELC\ELC.PMM
AC=C:\CONGEN\ELC\ELC.ACM
SE
1 2 3 4 5 6 $$
MO NX=6 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ELC
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 6 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 6 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

## Correlation Matrix to be Analyzed

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|---|
| **ELC1** | 1.00 | | | | | |
| **ELC2** | 0.33 | 1.00 | | | | |
| **ELC3** | 0.19 | 0.59 | 1.00 | | | |
| **ELC4** | 0.26 | 0.36 | 0.53 | 1.00 | | |
| **ELC5** | 0.04 | 0.25 | 0.50 | 0.77 | 1.00 | |
| **ELC6** | 0.15 | 0.18 | 0.18 | 0.25 | 0.29 | 1.00 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

### LAMBDA-X

| | ELC |
|---|---|
| **ELC1** | 1 |
| **ELC2** | 2 |
| **ELC3** | 3 |
| **ELC4** | 4 |
| **ELC5** | 5 |
| **ELC6** | 6 |

### THETA-DELTA

| ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|
| 7 | 8 | 9 | 10 | 11 | 12 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 11

## LISREL Estimates (Weighted Least Squares)

### LAMBDA-X

| | ELC |
|---|---|
| ELC1 | 0.41 |
| | (0.07) |
| | 5.71 |
| ELC2 | 0.68 |
| | (0.07) |
| | 9.84 |
| ELC3 | 0.82 |
| | (0.04) |
| | 19.88 |
| ELC4 | 0.96 |
| | (0.04) |
| | 27.11 |
| ELC5 | 0.85 |
| | (0.03) |
| | 24.53 |
| ELC6 | 0.30 |
| | (0.07) |
| | 4.19 |

### PHI

| ELC |
|---|
| 1.00 |

### THETA-DELTA

| ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|
| 0.84 | 0.54 | 0.33 | 0.09 | 0.27 | 0.91 |
| (0.11) | (0.13) | (0.11) | (0.11) | (0.11) | (0.10) |
| 7.84 | 4.12 | 2.90 | 0.77 | 2.53 | 9.19 |

### Squared Multiple Correlations for X - Variables

| ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|
| 0.16 | 0.46 | 0.67 | 0.91 | 0.73 | 0.09 |

## Goodness of Fit Statistics

Degrees of Freedom = 9
Minimum Fit Function Chi-Square = 46.09 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 37.09
90 Percent Confidence Interval for NCP = (19.51 ; 62.18)

Minimum Fit Function Value = 0.37
Population Discrepancy Function Value (F0) = 0.30
90 Percent Confidence Interval for F0 = (0.16 ; 0.50)
Root Mean Square Error of Approximation (RMSEA) = 0.18
90 Percent Confidence Interval for RMSEA = (0.13 ; 0.24)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.57
90 Percent Confidence Interval for ECVI = (0.42 ; 0.77)
ECVI for Saturated Model = 0.34
ECVI for Independence Model = 6.57

Chi-Square for Independence Model with 15 Degrees of Freedom = 802.81
Independence AIC = 814.81
Model AIC = 70.09
Saturated AIC = 42.00
Independence CAIC = 837.78
Model CAIC = 116.03
Saturated CAIC = 122.39

Root Mean Square Residual (RMR) = 0.15
Standardized RMR = 0.15
Goodness of Fit Index (GFI) = 0.96
Adjusted Goodness of Fit Index (AGFI) = 0.91
Parsimony Goodness of Fit Index (PGFI) = 0.41

Normed Fit Index (NFI) = 0.94
Non-Normed Fit Index (NNFI) = 0.92
Parsimony Normed Fit Index (PNFI) = 0.57
Comparative Fit Index (CFI) = 0.95
Incremental Fit Index (IFI) = 0.95
Relative Fit Index (RFI) = 0.90

Critical N (CN) = 59.30

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Index [illegible]

**Modification Indices for THETA-DELTA**

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|---|
| **ELC1** | - - | | | | | |
| **ELC2** | 1.08 | - - | | | | |
| **ELC3** | 1.11 | 20.74 | - - | | | |
| **ELC4** | 17.21 | 5.81 | 1.69 | - - | | |
| **ELC5** | 17.43 | 0.02 | 0.01 | 16.53 | - - | |
| **ELC6** | 0.13 | 0.15 | 0.73 | 0.79 | 2.37 | - - |

**Expected Change for THETA-DELTA**

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|---|
| **ELC1** | - - | | | | | |
| **ELC2** | 0.07 | - - | | | | |
| **ELC3** | -0.06 | 0.38 | - - | | | |
| **ELC4** | 0.19 | -0.10 | -0.07 | - - | | |
| **ELC5** | -0.18 | 0.01 | -0.01 | 0.51 | - - | |
| **ELC6** | 0.03 | 0.02 | -0.05 | -0.05 | 0.10 | - - |

Maximum Modification Index is 20.74 for Element ( 3, 2) of THETA-DELTA



## Factor Scores Regressions

**KSI**

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 | ELC6 |
|---|---|---|---|---|---|---|
| **ELC** | 0.03 | 0.07 | 0.14 | 0.63 | 0.18 | 0.02 |

## Standardized Solution

**LAMBDA-X**

| | ELC |
|---|---|
| **ELC1** | 0.41 |
| **ELC2** | 0.68 |
| **ELC3** | 0.82 |
| **ELC4** | 0.96 |
| **ELC5** | 0.85 |
| **ELC6** | 0.30 |

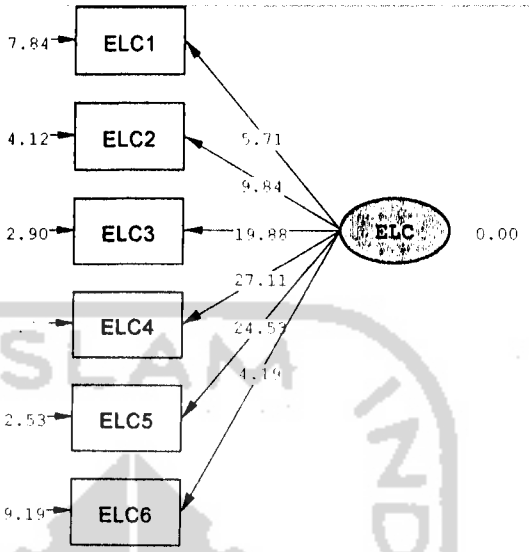
**PHI**

| ELC |
|---|
| 1.00 |

The Problem used 8360 Bytes (

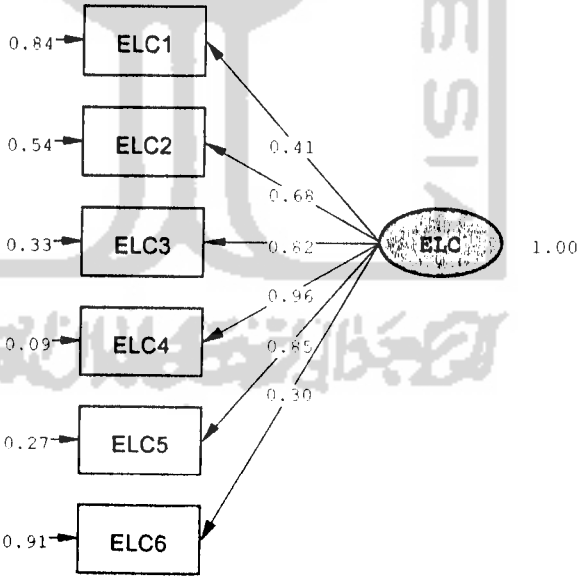
Time used:

**Path diagram (t-values)**




Chi-Square=46.09, df=9, P-value=0.00000, RMSEA=0.182

**Path diagram (estimates)**




Chi-Square=46.09, df=9, P-value=0.00000, RMSEA=0.182

DATE: 7/31/2007
TIME: 20:52

L I S R E L 8.30

BY

Karl G. Jöreskog and [illegible]



The following lines were read from file **C:\CONGEN\ELC\ELC1.LS8:**

```
ONE CONGEN
DA NI=6 NO=125 MA=PM
LA
ELC1 ELC2 ELC3 ELC4 ELC5 ELC6
PM=C:\CONGEN\ELC\ELC.PMM
AC=C:\CONGEN\ELC\ELC.ACM
SE
1 2 3 4 5 /
MO NX=5 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ELC
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 6 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 5 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |



*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Correlation Matrix to be Analyzed

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|---|
| **ELC1** | 1.00 | | | | |
| **ELC2** | 0.33 | 1.00 | | | |
| **ELC3** | 0.19 | 0.59 | 1.00 | | |
| **ELC4** | 0.26 | 0.36 | 0.53 | 1.00 | |
| **ELC5** | 0.04 | 0.25 | 0.50 | 0.77 | 1.00 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | ELC |
|---|---|
| **ELC1** | 1 |
| **ELC2** | 2 |
| **ELC3** | 3 |
| **ELC4** | 4 |
| **ELC5** | 5 |

**THETA-DELTA**

| ELC1 | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|
| 6 | 7 | 8 | 9 | 10 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 10

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | ELC |
|---|---|
| **ELC1** | 0.42 |
| | (0.07) |
| | 5.87 |
| **ELC2** | 0.67 |

| | |
|---|---|
| | (0.07) |
| | 9.58 |
| **ELC3** | 0.81 |
| | (0.04) |
| | 19.05 |
| **ELC4** | 0.97 |
| | (0.04) |
| | 25.69 |
| **ELC5** | 0.82 |
| | (0.04) |
| | 19.60 |

**PHI**

| **ELC** |
|---|
| 1.00 |

**THETA-DELTA**

| **ELC1** | **ELC2** | **ELC3** | **ELC4** | **ELC5** |
|---|---|---|---|---|
| 0.82 | 0.55 | 0.34 | 0.06 | 0.33 |
| (0.11) | (0.13) | (0.11) | (0.12) | (0.11) |
| 7.63 | 4.21 | 2.97 | 0.49 | 2.94 |

**Squared Multiple Correlations for X - Variables**

| **ELC1** | **ELC2** | **ELC3** | **ELC4** | **ELC5** |
|---|---|---|---|---|
| 0.18 | 0.45 | 0.66 | 0.94 | 0.67 |

## Goodness of Fit Statistics

Degrees of Freedom = 5
Minimum Fit Function Chi-Square = 43.37 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 38.37
90 Percent Confidence Interval for NCP = (20.95 ; 63.26)

Minimum Fit Function Value = 0.35
Population Discrepancy Function Value (F0) = 0.31
90 Percent Confidence Interval for F0 = (0.17 ; 0.51)
Root Mean Square Error of Approximation (RMSEA) = 0.25
90 Percent Confidence Interval for RMSEA = (0.18 ; 0.32)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.51
90 Percent Confidence Interval for ECVI = (0.37 ; 0.71)
ECVI for Saturated Model = 0.24
ECVI for Independence Model = 6.13

Chi-Square for Independence Model with 10 Degrees of Freedom = 750.27
Independence AIC = 760.27
Model AIC = 63.37
Saturated AIC = 30.00
Independence CAIC = 779.41
Model CAIC = 101.65
Saturated CAIC = 87.42

Root Mean Square Residual (RMR) = 0.17
Standardized RMR = 0.17
Goodness of Fit Index (GFI) = 0.96
Adjusted Goodness of Fit Index (AGFI) = 0.88
Parsimony Goodness of Fit Index (PGFI) = 0.32

Normed Fit Index (NFI) = 0.94
Non-Normed Fit Index (NNFI) = 0.90
Parsimony Normed Fit Index (PNFI) = 0.47
Comparative Fit Index (CFI) = 0.95
Incremental Fit Index (IFI) = 0.95
Relative Fit Index (RFI) = 0.88

Critical N (CN) = 44.14

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

### Modification Indices for THETA-DELTA

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|---|
| **ELC1** | - - | | | | |
| **ELC2** | 1.64 | - - | | | |
| **ELC3** | 2.28 | 21.16 | - - | | |
| **ELC4** | 16.00 | 4.84 | 3.89 | - - | |
| **ELC5** | 15.84 | 0.04 | 0.14 | 20.15 | - - |

**Expected Change for THETA-DELTA**

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|---|
| ELC1 | - - | | | | |
| ELC2 | 0.09 | - - | | | |
| ELC3 | -0.09 | 0.38 | - - | | |
| ELC4 | 0.20 | -0.10 | -0.12 | - - | |
| ELC5 | -0.19 | -0.01 | 0.02 | 0.60 | - - |

Maximum Modification Index is 21.16 for Element ( 3, 2) of THETA-DELTA

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Factor Scores Regressions

**KSI**

| | ELC1 | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|---|
| ELC | 0.02 | 0.05 | 0.11 | 0.76 | 0.11 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | ELC |
|---|---|
| ELC1 | 0.42 |
| ELC2 | 0.67 |
| ELC3 | 0.81 |
| ELC4 | 0.97 |
| ELC5 | 0.82 |

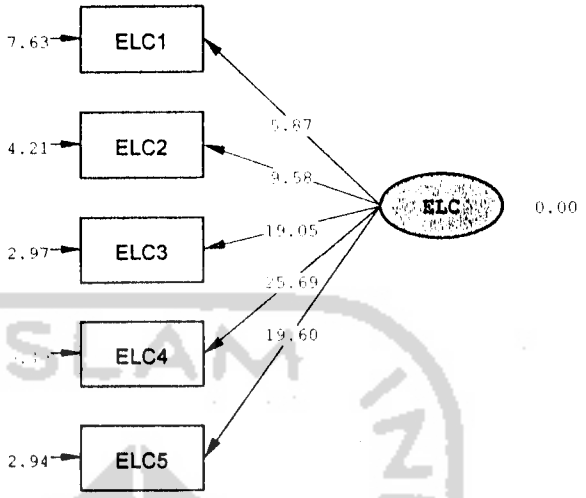
**PHI**

| ELC |
|---|
| 1.00 |

The Problem used 6848 Bytes (= 0.0 of Available Workspace)

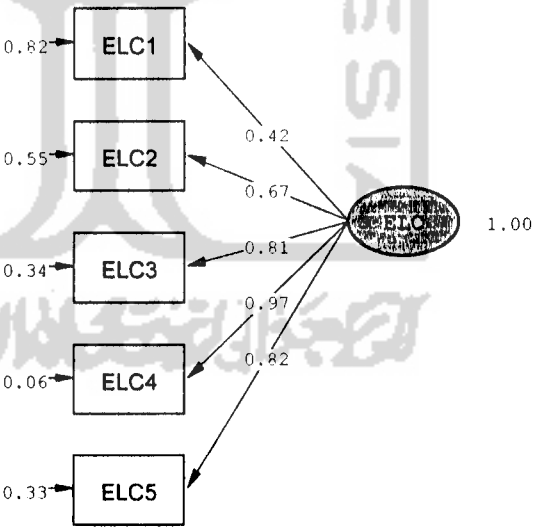
Time used: 0.016 Seconds

**Path diagram (t-values)**




Chi-Square=43.37, df=5, P-value=0.00000, RMSEA=0.249

**Path diagram (estimates)**




Chi-Square=43.37, df=5, P-value=0.00000, RMSEA=0.249

DATE: 7/31/2007
TIME: 21:11

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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Website: www.ssicentral.com

The following lines were read from file **C:\CONGEN\ELC\ELC2.LS8:**

```
ONE CONGEN
DA NI=6 NO=125 MA=PM
LA
ELC1 ELC2 ELC3 ELC4 ELC5 ELC6
PM=C:\CONGEN\ELC\ELC.PMM
AC=C:\CONGEN\ELC\ELC.ACM
SE
2 3 4 5 /
MO NX=4 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ELC
PD
OU MI FS SS AD=OFF
```

Number of Input Variables 6
Number of Y - Variables 0
Number of X - Variables 4
Number of ETA - Variables 0
Number of KSI - Variables 1
Number of Observations 125

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Correlation Matrix to be Analyzed

| | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|
| ELC2 | 1.00 | | | |
| ELC3 | 0.59 | 1.00 | | |
| ELC4 | 0.36 | 0.53 | 1.00 | |
| ELC5 | 0.25 | 0.50 | 0.77 | 1.00 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

### LAMBDA-X

| | ELC |
|---|---|
| ELC2 | 1 |
| ELC3 | 2 |
| ELC4 | 3 |
| ELC5 | 4 |

### THETA-DELTA

| ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 9

## LISREL Estimates (Weighted Least Squares)

### LAMBDA-X

| | ELC |
|---|---|
| ELC2 | 0.68 |
| | (0.07) |
| | 9.24 |
| ELC3 | 0.78 |
| | (0.05) |
| | 17.25 |

| | |
|---|---|
| **ELC4** | 0.89 |
| | (0.04) |
| | 20.79 |
| **ELC5** | 0.84 |
| | (0.04) |
| | 18.78 |

**PHI**

| ELC |
|---|
| 1.00 |

**THETA-DELTA**

| ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|
| 0.54 | 0.39 | 0.20 | 0.29 |
| (0.13) | (0.11) | (0.12) | (0.12) |
| 3.98 | 3.44 | 1.72 | 2.48 |

**Squared Multiple Correlations for X - Variables**

| ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|
| 0.46 | 0.61 | 0.80 | 0.71 |

## Goodness of Fit Statistics

Degrees of Freedom = 2
Minimum Fit Function Chi-Square = 23.61 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 21.61
90 Percent Confidence Interval for NCP = (9.51 ; 41.14)

Minimum Fit Function Value = 0.19
Population Discrepancy Function Value (F0) = 0.17
90 Percent Confidence Interval for F0 = (0.077 ; 0.33)
Root Mean Square Error of Approximation (RMSEA) = 0.30
90 Percent Confidence Interval for RMSEA = (0.20 ; 0.41)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.32
90 Percent Confidence Interval for ECVI = (0.22 ; 0.48)
ECVI for Saturated Model = 0.16
ECVI for Independence Model = 5.62

Chi-Square for Independence Model with 6 Degrees of Freedom = 688.70
Independence AIC = 696.70
Model AIC = 39.61

Saturated AIC = 20.00
Independence CAIC = 712.02
Model CAIC = 70.23
Saturated CAIC = 58.28

Root Mean Square Residual (RMR) = 0.15
Standardized RMR = 0.15
Goodness of Fit Index (GFI) = 0.97
Adjusted Goodness of Fit Index (AGFI) = 0.86
Parsimony Goodness of Fit Index (PGFI) = 0.19

Normed Fit Index (NFI) = 0.97
Non-Normed Fit Index (NNFI) = 0.91
Parsimony Normed Fit Index (PNFI) = 0.32
Comparative Fit Index (CFI) = 0.97
Incremental Fit Index (IFI) = 0.97
Relative Fit Index (RFI) = 0.90

Critical N (CN) = 49.39

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

### Modification Indices for THETA-DELTA

| | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|
| ELC2 | - - | | | |
| ELC3 | 21.00 | - - | | |
| ELC4 | 0.24 | 6.89 | - - | |
| ELC5 | 6.89 | 0.24 | 21.00 | - - |

### Expected Change for THETA-DELTA

| | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|
| ELC2 | - - | | | |
| ELC3 | 0.46 | - - | | |
| ELC4 | 0.03 | -0.16 | - - | |
| ELC5 | -0.13 | 0.03 | 0.65 | - - |

Maximum Modification Index is 21.00 for Element ( 2, 1) of THETA-DELTA

## Factor Scores Regressions

**KSI**

| | ELC2 | ELC3 | ELC4 | ELC5 |
|---|---|---|---|---|
| ELC | 0.13 | 0.20 | 0.45 | 0.30 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | ELC |
|---|---|
| ELC2 | 0.68 |
| ELC3 | 0.78 |
| ELC4 | 0.89 |
| ELC5 | 0.84 |

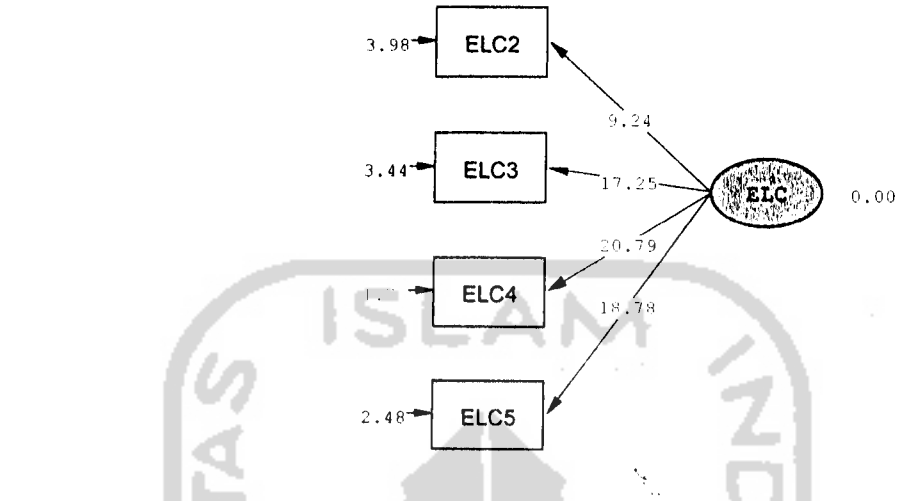
**PHI**

| ELC |
|---|
| 1.00 |

The Problem used 5544 Bytes (= 0.0 of Available Workspace)

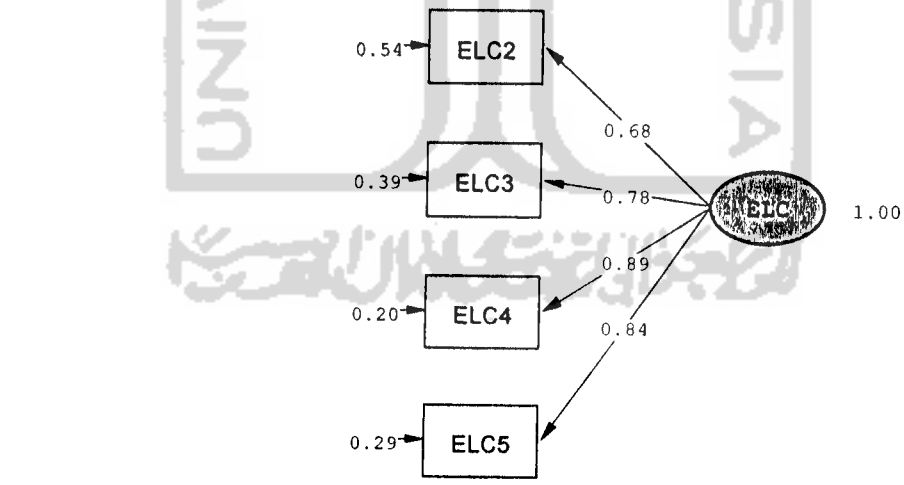
Time used: 0.016 Seconds

**Path diagram (t-values)**




Chi-Square=23.61, df=2, P-value=0.00001, RMSEA=0.295

**Path diagram (estimates)**




Chi-Square=23.61, df=2, P-value=0.00001, RMSEA=0.295

DATE: 7/31/2007
TIME: 21:41

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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The following lines were read from file **C:\CONGEN\ELC\ELC3.LS8:**

```
ONE CONGEN
DA NI=6 NO=125 MA=PM
LA
ELC1 ELC2 ELC3 ELC4 ELC5 ELC6
PM=C:\CONGEN\ELC\ELC.PMM
AC=C:\CONGEN\ELC\ELC.ACM
SE
3 4 5 /
MO NX=3 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ELC
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 6 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 3 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | ELC3 | ELC4 | ELC5 |
|---|---|---|---|
| **ELC3** | 1.00 | | |
| **ELC4** | 0.53 | 1.00 | |
| **ELC5** | 0.50 | 0.77 | 1.00 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | ELC |
|---|---|
| **ELC3** | 1 |
| **ELC4** | 2 |
| **ELC5** | 3 |

**THETA-DELTA**

| ELC3 | ELC4 | ELC5 |
|---|---|---|
| 4 | 5 | 6 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 0

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | ELC |
|---|---|
| **ELC3** | 0.58 |
| | (0.06) |
| | 9.35 |
| **ELC4** | 0.91 |
| | (0.06) |
| | 14.67 |
| **ELC5** | 0.85 |
| | (0.05) |

| | |
|---|---|
| | 15.80 |

**PHI**

| ELC |
|---|
| 1.00 |

**THETA-DELTA**

| ELC3 | ELC4 | ELC5 |
|---|---|---|
| 0.66 | 0.18 | 0.28 |
| (0.12) | (0.14) | (0.13) |
| 5.71 | 1.22 | 2.18 |

**Squared Multiple Correlations for X - Variables**

| ELC3 | ELC4 | ELC5 |
|---|---|---|
| 0.34 | 0.82 | 0.72 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.0 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-EPS

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Factor Scores Regressions

### KSI

| | ELC3 | ELC4 | ELC5 |
|---|---|---|---|
| ELC | 0.10 | 0.59 | 0.35 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

### LAMBDA-X

| | ELC |
|---|---|
| ELC3 | 0.58 |
| ELC4 | 0.91 |
| ELC5 | 0.85 |

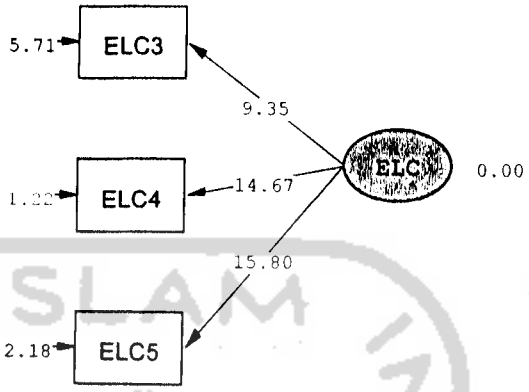
### PHI

| ELC |
|---|
| 1.00 |

The Problem used 4464 Bytes ( 0.0% of Available Workspace)

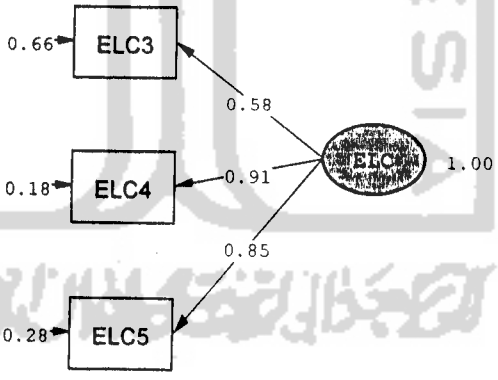
Time used: 0.063 Seconds

**Path diagram (t-values)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 21:55

**L I S R E L 8.30**

BY

Karl G. Jöreskog and D. Sörbom

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Website: www.ssicentral.com

The following lines were read from file **C:\CONGEN\ELC\ELC4.LS8:**

```
ONE CONGEN
DA NI=6 NO=125 MA=PM
LA
ELC1 ELC2 ELC3 ELC4 ELC5 ELC6
PM=C:\CONGEN\ELC\ELC.PMM
AC=C:\CONGEN\ELC\ELC.ACM
SE
4 5 /
MO NX=2 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ELC
EQ TD 1 1 TD 2 2
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 6 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 2 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

*/*

***EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | ELC4 | ELC5 |
|---|---|---|
| ELC4 | 1.00 | |
| ELC5 | 0.77 | 1.00 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | ELC |
|---|---|
| ELC4 | 1 |
| ELC5 | 2 |

**THETA-DELTA**

| ELC4 | ELC5 |
|---|---|
| 3 | 3 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 5

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | ELC |
|---|---|
| ELC4 | 0.88 |
| | (0.05) |
| | 18.27 |
| ELC5 | 0.88 |
| | (0.05) |
| | 18.27 |

**PHI**

| ELC |
|---|
| 1.00 |

**THETA-DELTA**

| ELC4 | ELC5 |
|---|---|
| 0.23 | 0.23 |
| (0.08) | (0.08) |
| 2.72 | 2.72 |

**Squared Multiple Correlations for X - Variables**

| ELC4 | ELC5 |
|---|---|
| 0.77 | 0.77 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !



## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-EPS

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Factor Scores Regressions

**KSI**

| | ELC4 | ELC5 |
|---|---|---|
| ELC | 0.50 | 0.50 |

*EXTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | ELC |
|---|---|
| ELC4 | 0.88 |
| ELC5 | 0.88 |

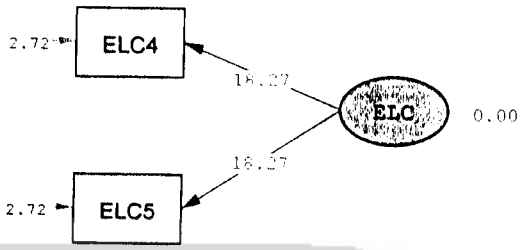
**PHI**

| ELC |
|---|
| 1.00 |

The Problem used [illegible] Bytes [illegible] Allocated Workspace

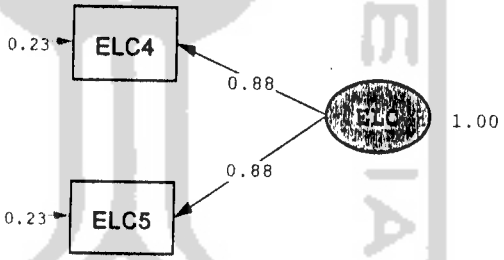
Time used: [illegible] Seconds

**Path diagram (t-values)**




hi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

/

DATE: 7/31/2007
TIME: 22:07

BY

and



The following lines were read from file **C:\CONGEN\ILC\ILC.LS8:**

```
ONE CONGENERY
DA NI=3 NO=125 MA=PM
LA
ILC1 ILC2 ILC3
PM=C:\CONGEN\ILC\ILC.PMM
AC=C:\CONGEN\ILC\ILC.ACM
SE
1 2 3 /
MO NX=3 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ILC
PD
OU MI RS FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 3 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 3 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

## Correlation Matrix to be Analyzed

| | ILC1 | ILC2 | ILC3 |
|---|---|---|---|
| ILC1 | 1.00 | | |
| ILC2 | 0.62 | 1.00 | |
| ILC3 | 0.32 | 0.54 | 1.00 |

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | ILC |
|---|---|
| ILC1 | 1 |
| ILC2 | 2 |
| ILC3 | 3 |

**THETA-DELTA**

| ILC1 | ILC2 | ILC3 |
|---|---|---|
| 4 | 5 | 6 |

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 0

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | ILC |
|---|---|
| ILC1 | 0.61 |
| | (0.09) |
| | 6.62 |
| ILC2 | 1.02 |
| | (0.09) |
| | 11.00 |
| ILC3 | 0.53 |
| | (0.07) |
| | 7.38 |

**PHI**

| ILC |
|---|
| 1.00 |

**THETA-DELTA**

| ILC1 | ILC2 | ILC3 |
|---|---|---|
| 0.62 | -0.04 | 0.72 |
| (0.14) | (0.21) | (0.12) |
| 4.32 | -0.19 | 6.18 |

**Squared Multiple Correlations for X - Variables**

| ILC1 | ILC2 | ILC3 |
|---|---|---|
| 0.38 | 1.04 | 0.28 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-DELTA

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Factor Scores Regressions

**KSI**

| | ILC1 | ILC2 | ILC3 |
|---|---|---|---|
| ILC | -0.04 | 1.06 | -0.03 |

## Standardized Solution

**LAMBDA-X**

| | ILC |
|---|---|
| ILC1 | 0.61 |
| ILC2 | 1.02 |
| ILC3 | 0.53 |

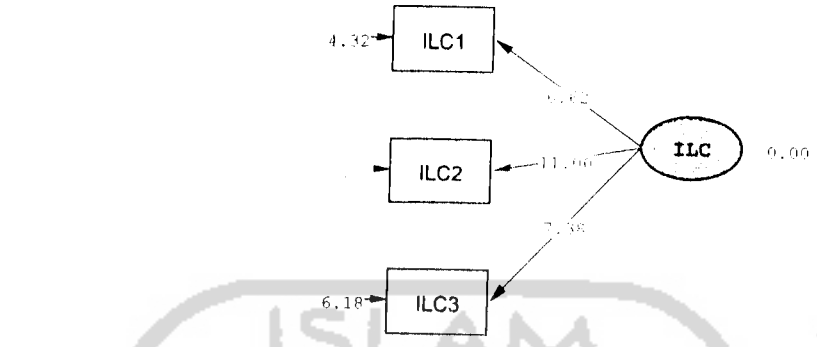
**PHI**

| ILC |
|---|
| 1.00 |

The Problem used 2664 Bytes (= 0.0 of Available Workspace)

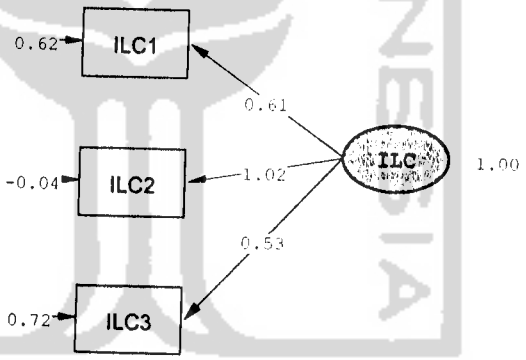
Time used: 0.063 Seconds

**Path diagram (t-values)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 22:18

L I S R E L 8.30

BY

Karl G. Jöreskog and D. Sörbom

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The following lines were read from file **C:\CONGEN\ILC\ILC1.LS8:**

```
ONE CONGENERY
DA NI=3 NO=125 MA=PM
LA
ILC1 ILC2 ILC3
PM=C:\CONGEN\ILC\ILC.PMM
AC=C:\CONGEN\ILC\ILC.ACM
SE
1 2 /
MO NX=2 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
ILC
EQ TD 1 1 TD 2 2
PD
OU MI RS FS SS AD=OFF
```

Number of Input Variables 3
Number of Y - Variables 0
Number of X - Variables 2
Number of ETA - Variables 0
Number of KSI - Variables 1
Number of Observations 125

/

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Correlation Matrix to be Analyzed

| | ILC1 | ILC2 |
|---|---|---|
| ILC1 | 1.00 | |
| ILC2 | 0.62 | 1.00 |

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | ILC |
|---|---|
| ILC1 | 1 |
| ILC2 | 2 |

**THETA-DELTA**

| ILC1 | ILC2 |
|---|---|
| 3 | 3 |

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 6

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | ILC |
|---|---|
| ILC1 | 0.79 |
| | (0.06) |
| | 12.57 |
| ILC2 | 0.79 |
| | (0.06) |
| | 12.57 |

**PHI**

| ILC |
|---|
| 1.00 |

**THETA-DELTA**

| ILC1 | ILC2 |
|---|---|
| 0.38 | 0.38 |
| (0.10) | (0.10) |
| 3.78 | 3.78 |

**Squared Multiple Correlations for X - Variables**

| ILC1 | ILC2 |
|---|---|
| 0.62 | 0.62 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-EPS

*INTERNAL LOCUS OF CONTROL CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Factor Scores Regressions

**KSI**

| | ILC1 | ILC2 |
|---|---|---|
| ILC | 0.49 | 0.49 |

## Standardized Solution

### LAMBDA-X

| | ILC |
|---|---|
| ILC1 | 0.79 |
| ILC2 | 0.79 |

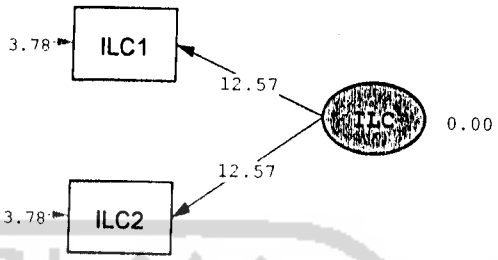
### PHI

| ILC |
|---|
| 1.00 |

The Problem used [illegible]

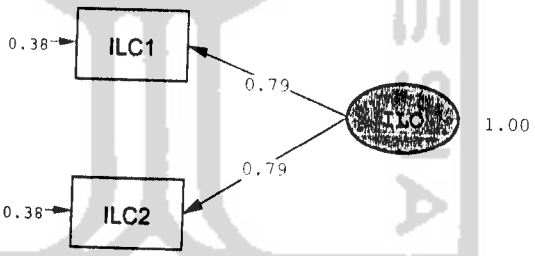
Time used: [illegible]

**Path diagram (t-values)**




hi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 22:25

L I S R E L 8.30

BY

[illegible] and [illegible]



The following lines were read from file
**C:\CONGEN\INWOM\INWOM.LS8:**

```
ONE CONGENERY
DA NI=4 NO=125 MA=PM
LA
INWOM1 INWOM2 INWOM3 INWOM4
PM=C:\CONGEN\INWOM\INWOM.PMM
AC=C:\CONGEN\INWOM\INWOM.ACM
SE
1 2 3 4 /
MO NX=4 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
INWOM
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 4 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 4 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

/

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|
| INWOM1 | 1.00 | | | |
| INWOM2 | 0.34 | 1.00 | | |
| INWOM3 | 0.51 | 0.41 | 1.00 | |
| INWOM4 | 0.30 | 0.53 | 0.44 | 1.00 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | INWOM |
|---|---|
| INWOM1 | 1 |
| INWOM2 | 2 |
| INWOM3 | 3 |
| INWOM4 | 4 |

**THETA-DELTA**

| INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 7

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | INWOM |
|---|---|
| INWOM1 | 0.61 |
| | (0.08) |
| | 7.95 |
| INWOM2 | 0.71 |
| | (0.06) |

| | |
|---|---|
| | 11.63 |
| INWOM3 | 0.77 |
| | (0.09) |
| | 8.44 |
| INWOM4 | 0.69 |
| | (0.05) |
| | 12.94 |

**PHI**

| INWOM |
|---|
| 1.00 |

**THETA-DELTA**

| INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|
| 0.63 | 0.49 | 0.40 | 0.53 |
| (0.13) | (0.13) | (0.17) | (0.12) |
| 4.84 | 3.95 | 2.39 | 4.55 |

**Squared Multiple Correlations for X - Variables**

| INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|
| 0.37 | 0.51 | 0.60 | 0.47 |

## Goodness of Fit Statistics

Degrees of Freedom = 2
Minimum Fit Function Chi-Square = 4.57 (P = 0.10)
Estimated Non-centrality Parameter (NCP) = 2.57
90 Percent Confidence Interval for NCP = (0.0 ; 12.96)

Minimum Fit Function Value = 0.037
Population Discrepancy Function Value (F0) = 0.021
90 Percent Confidence Interval for F0 = (0.0 ; 0.10)
Root Mean Square Error of Approximation (RMSEA) = 0.10
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.23)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.18

Expected Cross-Validation Index (ECVI) = 0.17
90 Percent Confidence Interval for ECVI = (0.15 ; 0.25)
ECVI for Saturated Model = 0.16
ECVI for Independence Model = 2.33

Chi-Square for Independence Model with 6 Degrees of Freedom = 281.41
Independence AIC = 289.41

Model AIC = 20.57
Saturated AIC = 20.00
Independence CAIC = 304.72
Model CAIC = 51.19
Saturated CAIC = 58.28

Root Mean Square Residual (RMR) = 0.073
Standardized RMR = 0.073
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.96
Parsimony Goodness of Fit Index (PGFI) = 0.20

Normed Fit Index (NFI) = 0.98
Non-Normed Fit Index (NNFI) = 0.97
Parsimony Normed Fit Index (PNFI) = 0.33
Comparative Fit Index (CFI) = 0.99
Incremental Fit Index (IFI) = 0.99
Relative Fit Index (RFI) = 0.95

Critical N (CN) = 251.03

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

### Modification Indices for THETA-DELTA

| | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|
| INWOM1 | - - | | | |
| INWOM2 | 0.07 | - - | | |
| INWOM3 | 3.99 | 2.11 | - - | |
| INWOM4 | 2.11 | 3.99 | 0.07 | - - |

### Expected Change for THETA-DELTA

| | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|
| INWOM1 | - - | | | |
| INWOM2 | 0.02 | - - | | |
| INWOM3 | 0.30 | -0.15 | - - | |
| INWOM4 | -0.12 | 0.31 | 0.03 | - - |

Maximum Modification Index is 3.99 for Element ( 3, 1) of THETA-DELTA

## Factor Scores Regressions

**KSI**

| | INWOM1 | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|---|
| INWOM | 0.19 | 0.29 | 0.39 | 0.26 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | INWOM |
|---|---|
| INWOM1 | 0.61 |
| INWOM2 | 0.71 |
| INWOM3 | 0.77 |
| INWOM4 | 0.69 |

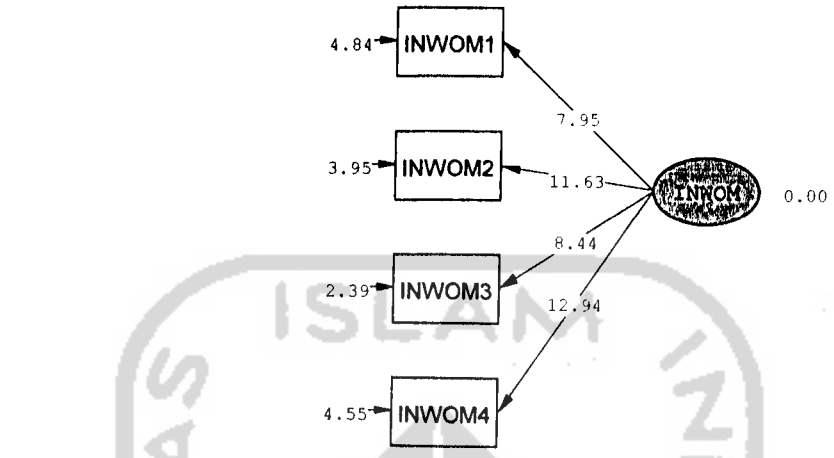
**PHI**

| INWOM |
|---|
| 1.00 |

The Problem used 4048 Bytes (= 0.0% of Available Workspace)

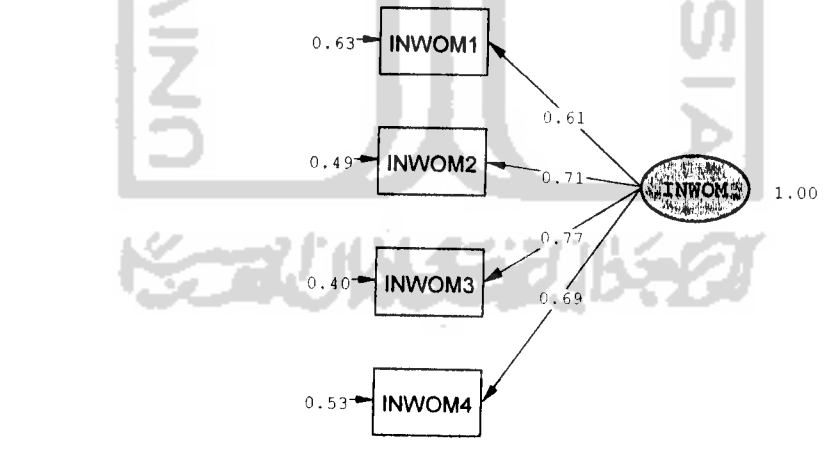
Time used: 0.016 Seconds

**Path diagram (t-values)**




Chi-Square=4.57, df=2, P-value=0.10187, RMSEA=0.102

**Path diagram (estimates)**




Chi-Square=4.57, df=2, P-value=0.10187, RMSEA=0.102

/

DATE: 7/31/2007
TIME: 22:38

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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Website: www.ssicentral.com

The following lines were read from file
**C:\CONGEN\INWOM\INWOM1.LS8:**

```
ONE CONGENERY
DA NI=4 NO=125 MA=PM
LA
INWOM1 INWOM2 INWOM3 INWOM4
PM=C:\CONGEN\INWOM\INWOM.PMM
AC=C:\CONGEN\INWOM\INWOM.ACM
SE
2 3 4 /
MO NX=3 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
INWOM
PD
OU MI FS SS AD=OFF
```

Number of Input Variables 4
Number of Y - Variables 0
Number of X - Variables 3
Number of ETA - Variables 0
Number of KSI - Variables 1
Number of Observations 125

/

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|
| **INWOM2** | 1.00 | | |
| **INWOM3** | 0.41 | 1.00 | |
| **INWOM4** | 0.53 | 0.44 | 1.00 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | INWOM |
|---|---|
| **INWOM2** | 1 |
| **INWOM3** | 2 |
| **INWOM4** | 3 |

**THETA-DELTA**

| INWOM2 | INWOM3 | INWOM4 |
|---|---|---|
| 4 | 5 | 6 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 0

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | INWOM |
|---|---|
| **INWOM2** | 0.71 |
| | (0.08) |
| | 8.71 |
| **INWOM3** | 0.59 |
| | (0.13) |
| | 4.55 |
| **INWOM4** | 0.75 |

| | |
|---|---|
| | (0.07) |
| | 10.14 |

**PHI**

| INWOM |
|---|
| 1.00 |

**THETA-DELTA**

| INWOM2 | INWOM3 | INWOM4 |
|---|---|---|
| 0.50 | 0.66 | 0.43 |
| (0.15) | (0.18) | (0.14) |
| 3.41 | 3.75 | 2.99 |

**Squared Multiple Correlations for X - Variables**

| INWOM2 | INWOM3 | INWOM4 |
|---|---|---|
| 0.50 | 0.34 | 0.57 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-EPS

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Factor Scores Regressions

**KSI**

| | INWOM2 | INWOM3 | INWOM4 |
|---|---|---|---|
| INWOM | 0.37 | 0.23 | 0.46 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | INWOM |
|---|---|
| INWOM2 | 0.71 |
| INWOM3 | 0.59 |
| INWOM4 | 0.75 |

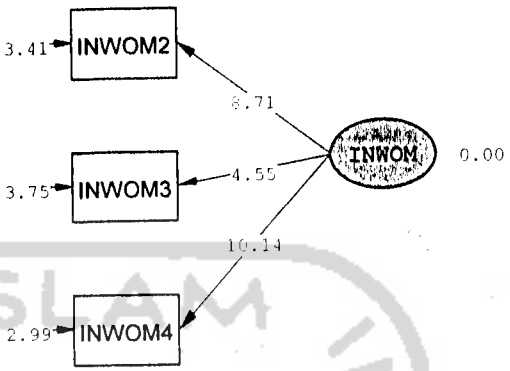
**PHI**

| INWOM |
|---|
| 1.00 |

The Problem used 2968 Bytes (= 0.0% of Available Workspace)

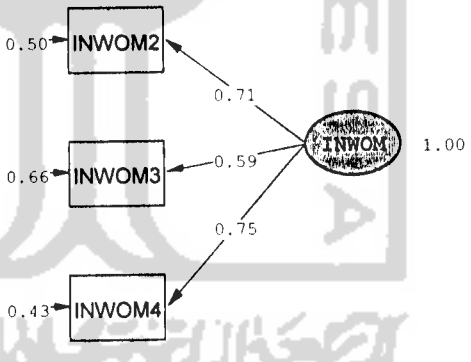
Time used: 0.016 Seconds

**Path diagram (t-values)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Path diagram (estimates)**




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 22:54

**L I S R E L 8.30**

BY

Karl G. Jöreskog and Dag Sörbom

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The following lines were read from file
**C:\CONGEN\INWOM\INWOM2.LS8:**

```
ONE CONGENERY
DA NI=4 NO=125 MA=PM
LA
INWOM1 INWOM2 INWOM3 INWOM4
PM=C:\CONGEN\INWOM\INWOM.PMM
AC=C:\CONGEN\INWOM\INWOM.ACM
SE
2 4 /
MO NX=2 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
INWOM
EQ TD 1 1 TD 2 2
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 4 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 2 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | INWOM2 | INWOM4 |
|---|---|---|
| **INWOM2** | 1.00 | |
| **INWOM4** | 0.53 | 1.00 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

## Parameter Specifications

**LAMBDA-X**

| | INWOM |
|---|---|
| **INWOM2** | 1 |
| **INWOM4** | 2 |

**THETA-DELTA**

| INWOM2 | INWOM4 |
|---|---|
| 3 | 3 |

*INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)*

Number of Iterations = 5

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-X**

| | INWOM |
|---|---|
| **INWOM2** | 0.73 |
| | (0.06) |
| | 11.75 |
| **INWOM4** | 0.73 |
| | (0.06) |
| | 11.75 |

**PHI**

| INWOM |
|---|
| 1.00 |

**THETA-DELTA**

| INWOM2 | INWOM4 |
|---|---|
| 0.47 | 0.47 |
| (0.09) | (0.09) |
| 5.11 | 5.11 |

**Squared Multiple Correlations for X - Variables**

| INWOM2 | INWOM4 |
|---|---|
| 0.53 | 0.53 |

## Goodness of Fit Statistics

Degrees of Freedom = 0
Minimum Fit Function Chi-Square = 0.00 (P = 1.00)

The Model is Saturated, the Fit is Perfect !

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

No Non-Zero Modification Indices for THETA-EPS

***INGROUP WORD OF MOUTH CONFIRMATORY FACTOR ANALYSIS (CFA)***

## Factor Scores Regressions

**KSI**

| | INWOM2 | INWOM4 |
|---|---|---|
| INWOM | 0.48 | 0.48 |

## Standardized Solution

### LAMBDA-X

| | INWOM |
|---|---|
| INWOM2 | 0.73 |
| INWOM4 | 0.73 |

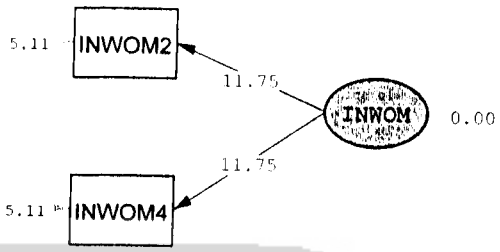
### PHI

| INWOM |
|---|
| 1.00 |

The Problem used 1960 Bytes (= 0.[illegible] of Available Workspace)

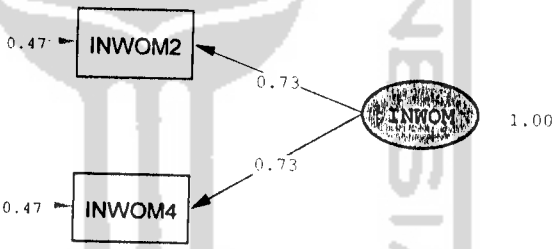
Time used: 0.[illegible]

## Path diagram (t-values)




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

## Path diagram (estimates)




Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

DATE: 7/31/2007
TIME: 23:05

BY

and



The following lines were read from file
**C:\CONGEN\OUTWOM\OUTWOM.LS8:**

```
ONE CONGENERY
DA NI=4 NO=125 MA=PM
LA
OUTWOM1 OUTWOM2 OUTWOM3 OUTWOM4
PM=C:\CONGEN\OUTWOM\OUTWOM.PMM
AC=C:\CONGEN\OUTWOM\OUTWOM.ACM
SE
1 2 3 4 /
MO NX=4 NK=1 LX=FU,FR PH=SY,FR TD=DI
LK
OUTWOM
PD
OU MI FS SS AD=OFF
```

| | |
|---|---|
| Number of Input Variables | 4 |
| Number of Y - Variables | 0 |
| Number of X - Variables | 4 |
| Number of ETA - Variables | 0 |
| Number of KSI - Variables | 1 |
| Number of Observations | 125 |

*i*

***OUTGROUP WORD OF MOUTH CONFIRMATORY ANALYSIS (CFA)***

## Correlation Matrix to be Analyzed

| | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|---|
| OUTWOM1 | 1.00 | | | |
| OUTWOM2 | 0.70 | 1.00 | | |
| OUTWOM3 | 0.56 | 0.74 | 1.00 | |
| OUTWOM4 | 0.60 | 0.74 | 0.79 | 1.00 |

*OUTGROUP WORD OF MOUTH CONFIRMATORY ANALYSIS (CFA)*

## Parameter Specifications

### LAMBDA-X

| | OUTWOM |
|---|---|
| OUTWOM1 | 1 |
| OUTWOM2 | 2 |
| OUTWOM3 | 3 |
| OUTWOM4 | 4 |

### THETA-DELTA

| OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|
| 5 | 6 | 7 | 8 |

*OUTGROUP WORD OF MOUTH CONFIRMATORY ANALYSIS (CFA)*

Number of iterations = 7

## LISREL Estimates (Weighted Least Squares)

### LAMBDA-X

| | OUTWOM |
|---|---|
| OUTWOM1 | 0.77 |
| | (0.07) |
| | 10.80 |
| OUTWOM2 | 0.91 |
| | (0.04) |

| | |
|---|---|
| | 21.79 |
| OUTWOM3 | 0.88 |
| | (0.04) |
| | 23.75 |
| OUTWOM4 | 0.88 |
| | (0.03) |
| | 25.33 |

**PHI**

| OUTWOM |
|---|
| 1.00 |

**THETA-DELTA**

| OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|
| 0.40 | 0.18 | 0.23 | 0.22 |
| (0.14) | (0.12) | (0.11) | (0.11) |
| 2.83 | 1.54 | 2.12 | 2.05 |

**Squared Multiple Correlations for X - Variables**

| OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|
| 0.60 | 0.82 | 0.77 | 0.78 |

## Goodness of Fit Statistics

Degrees of Freedom = 2
Minimum Fit Function Chi-Square = 3.83 (P = 0.15)
Estimated Non-centrality Parameter (NCP) = 1.83
90 Percent Confidence Interval for NCP = (0.0 ; 11.59)

Minimum Fit Function Value = 0.031
Population Discrepancy Function Value (F0) = 0.015
90 Percent Confidence Interval for F0 = (0.0 ; 0.094)
Root Mean Square Error of Approximation (RMSEA) = 0.086
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.22)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.23

Expected Cross-Validation Index (ECVI) = 0.16
90 Percent Confidence Interval for ECVI = (0.15 ; 0.24)
ECVI for Saturated Model = 0.16
ECVI for Independence Model = 8.60

Chi-Square for Independence Model with 6 Degrees of Freedom = 1058.21
Independence AIC = 1066.21

Model AIC = 19.83
Saturated AIC = 20.00
Independence CAIC = 1081.52
Model CAIC = 50.46
Saturated CAIC = 58.28

Root Mean Square Residual (RMR) = 0.050
Standardized RMR = 0.050
Goodness of Fit Index (GFI) = 1.00
Adjusted Goodness of Fit Index (AGFI) = 0.98
Parsimony Goodness of Fit Index (PGFI) = 0.20

Normed Fit Index (NFI) = 1.00
Non-Normed Fit Index (NNFI) = 0.99
Parsimony Normed Fit Index (PNFI) = 0.33
Comparative Fit Index (CFI) = 1.00
Incremental Fit Index (IFI) = 1.00
Relative Fit Index (RFI) = 0.99

Critical N (CN) = 299.24

***OUTGROUP WORD OF MOUTH CONFIRMATORY ANALYSIS (CFA)***

## Modification Indices and Expected Change

No Non-Zero Modification Indices for LAMBDA-X

No Non-Zero Modification Indices for PHI

### Modification Indices for THETA-DELTA

| | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|---|
| OUTWOM1 | - - | | | |
| OUTWOM2 | 3.04 | - - | | |
| OUTWOM3 | 1.85 | 0.17 | - - | |
| OUTWOM4 | 0.17 | 1.85 | 3.04 | - - |

### Expected Change for THETA-DELTA

| | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|---|
| OUTWOM1 | - - | | | |
| OUTWOM2 | 0.16 | - - | | |
| OUTWOM3 | -0.07 | 0.02 | - - | |
| OUTWOM4 | 0.02 | -0.08 | 0.18 | - - |

Maximum Modification Index is 3.04 for Element ( 4, 3) of THETA-DELTA

## Factor Scores Regressions

**KSI**

| | OUTWOM1 | OUTWOM2 | OUTWOM3 | OUTWOM4 |
|---|---|---|---|---|
| OUTWOM | 0.14 | 0.36 | 0.27 | 0.29 |

*OUTGROUP WORD OF MOUTH CONFIRMATORY ANALYSIS (CFA)*

## Standardized Solution

**LAMBDA-X**

| | OUTWOM |
|---|---|
| OUTWOM1 | 0.77 |
| OUTWOM2 | 0.91 |
| OUTWOM3 | 0.88 |
| OUTWOM4 | 0.88 |

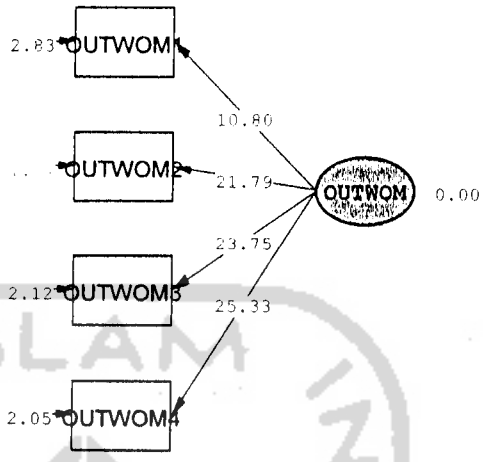
**PHI**

| OUTWOM |
|---|
| 1.00 |

The Problem used [illegible] Bytes [illegible] of Available Workspace

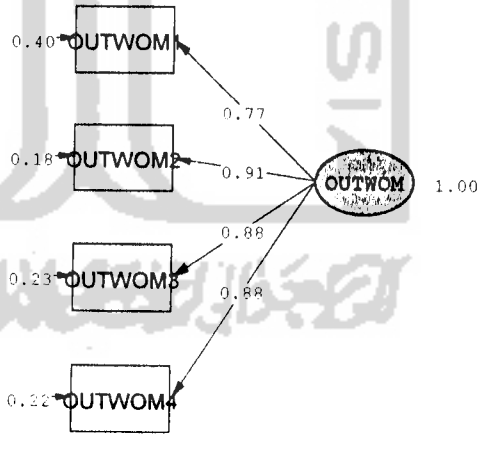
Time used: [illegible] Seconds

**Path diagram (t-values)**




Chi-Square=3.83, df=2, P-value=0.14736, RMSEA=0.086

**Path diagram (estimates)**




Chi-Square=3.83, df=2, P-value=0.14736, RMSEA=0.086

*i*

# APPENDIX E

# STRUCTURAL EQUATION MODELING (ONE FACTOR CONGENERY)

DATE: 7/31/2007
TIME: 23:12

L I S R E L [illegible]

BY

Karl G. [illegible] and [illegible]

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The following lines were read from file C:\CONGEN\CG\SEM.LS8:

```
 ONE FACTOR CONGENERY
 DA NI=5 NO=125 MA=PM
 LA
 OUTWOM
 INWOM
 ILC
 ELC
 CS
 PM =C:\CONGEN\CG\SEM.PMM
 AC =C:\CONGEN\CG\SEM.ACM
 SE
 1 2 3 4 5/
 MO NK=1 NX=1 NY=4 NE=4 GA=FU,FI BE=FU,FI LY=FU,FI TE=SY,FI PS=DI
LX=FU,FI TD=SY,FI
 LE
 OUTWOM INWOM ILC ELC
 LK
 CS
 FR BE 1 3 BE 1 4 BE 2 3 BE 2 4
 FR GA 1 1 GA 2 1 GA 3 1 GA 4 1
 FR
 VA 0.930 LY 1 1
 VA 0.072 TE 1 1
 VA 0.833 LY 2 2
 VA 0.310 TE 2 2
 VA 0.881 LY 3 3
 VA 0.233 TE 3 3
 VA 0.933 LY 4 4
 VA 0.129 TE 4 4
 VA 0.888 LX 1 1
 VA 0.211 TD 1 1
 PD
 OU MI FS SS AD=OFF
```

Number of Input Variables 5
Number of Y - Variables 4
Number of X - Variables 1
Number of ETA - Variables 4
Number of KSI - Variables 1
Number of Observations 125

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)*

## Correlation Matrix to be Analyzed

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | | | | |
| INWOM | -0.11 | 1.00 | | | |
| ILC | -0.03 | 0.36 | 1.00 | | |
| ELC | 0.15 | 0.24 | -0.09 | 1.00 | |
| CS | 0.12 | 0.21 | 0.23 | 0.09 | 1.00 |

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)*

## Parameter Specifications

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0 | 0 | 1 | 2 |
| INWOM | 0 | 0 | 3 | 4 |
| ILC | 0 | 0 | 0 | 0 |
| ELC | 0 | 0 | 0 | 0 |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 5 |
| INWOM | 6 |
| ILC | 7 |
| ELC | 8 |

**PHI**

| CS |
|---|
| 9 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 10 | 11 | 12 | 13 |

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)***

Number of Iterations = 7

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.93 | - - | - - | - - |
| INWOM | - | 0.83 | - | - |
| ILC | - | - | 0.88 | - |
| ELC | - | - | - | 0.93 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.09 | 0.10 |
| | | | (0.13) | (0.10) |
| | | | -0.75 | 0.96 |
| INWOM | - | - | 0.55 | 0.35 |
| | - | - | (0.15) | (0.13) |
| | - | - | 3.58 | 2.61 |
| ILC | - | - | - | - |
| ELC | - | - | - | - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.18 |
| | (0.11) |
| | 1.55 |
| INWOM | 0.01 |
| | (0.12) |
| | 0.11 |
| ILC | 0.28 |
| | (0.09) |
| | 3.00 |
| ELC | 0.15 |
| | (0.10) |
| | 1.50 |

**Covariance Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.07 | | | | |
| INWOM | 0.02 | 0.99 | | | |
| ILC | -0.04 | 0.56 | 0.97 | | |
| ELC | 0.12 | 0.37 | 0.04 | 1.01 | |
| CS | 0.17 | 0.22 | 0.28 | 0.15 | 1.01 |

**PHI**

| CS |
|---|
| 1.01 |
| (0.11) |
| 8.84 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 1.03 | 0.55 | 0.90 | 0.99 |
| (0.11) | (0.18) | (0.13) | (0.11) |
| 9.18 | 3.02 | 7.10 | 9.19 |

**Squared Multiple Correlations for Structural Equations**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.04 | 0.44 | 0.08 | 0.02 |

**THETA-EPS**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.07 | 0.31 | 0.23 | 0.13 |

**Squared Multiple Correlations for Y - Variables**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.93 | 0.69 | 0.76 | 0.87 |

**THETA-DELTA**

| CS |
|---|
| 0.21 |

**Squared Multiple Correlations for X - Variables**

| CS |
|---|
| 0.79 |

## Goodness of Fit Statistics

Degrees of Freedom = 2
Minimum Fit Function Chi-Square = 5.25 (P = 0.072)
Estimated Non-centrality Parameter (NCP) = 3.25
90 Percent Confidence Interval for NCP = (0.0 ; 14.17)

Minimum Fit Function Value = 0.042
Population Discrepancy Function Value (F0) = 0.026
90 Percent Confidence Interval for F0 = (0.0 ; 0.11)
Root Mean Square Error of Approximation (RMSEA) = 0.11
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.24)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.13

Expected Cross-Validation Index (ECVI) = 0.25
90 Percent Confidence Interval for ECVI = (0.23 ; 0.34)
ECVI for Saturated Model = 0.24
ECVI for Independence Model = 0.99

Chi-Square for Independence Model with 10 Degrees of Freedom = 112.89
Independence AIC = 122.89
Model AIC = 31.25
Saturated AIC = 30.00
Independence CAIC = 142.03
Model CAIC = 81.02
Saturated CAIC = 87.42

Root Mean Square Residual (RMR) = 0.054
Standardized RMR = 0.054
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.94
Parsimony Goodness of Fit Index (PGFI) = 0.13

Normed Fit Index (NFI) = 0.95
Non-Normed Fit Index (NNFI) = 0.84
Parsimony Normed Fit Index (PNFI) = 0.19
Comparative Fit Index (CFI) = 0.97
Incremental Fit Index (IFI) = 0.97
Relative Fit Index (RFI) = 0.77

Critical N (CN) = 218.38

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)***

## Modification Indices and Expected Change

### Modification Indices for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 3.99 | - - | - - |
| INWOM | 3.99 | - - | - - | - - |
| ILC | 3.33 | 2.31 | - - | 1.37 |
| ELC | 4.72 | 0.80 | 1.37 | - - |

### Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.34 | - - | - - |
| INWOM | -0.17 | - - | - - | - - |
| ILC | 0.29 | -0.49 | - - | -0.13 |
| ELC | 0.57 | -0.21 | -0.16 | - - |

### Standardized Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.34 | - - | - - |
| INWOM | -0.17 | - - | - - | - - |
| ILC | 0.30 | -0.49 | - - | -0.13 |
| ELC | 0.59 | -0.21 | -0.15 | - - |

No Non-Zero Modification Index for LAMBDA-Y

**Modification Indices for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 3.99 | - - | - - |
| INWOM | 3.99 | - - | - - | - - |
| ILC | 1.37 | 1.37 | - - | 1.37 |
| ELC | 1.37 | 1.37 | 1.37 | - - |

**Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.37 | - - | - - |
| INWOM | -0.20 | - - | - - | - - |
| ILC | -1.55 | -0.44 | - - | -0.15 |
| ELC | 1.77 | -0.30 | -0.17 | - - |

**Standardized Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.36 | - - | - - |
| INWOM | -0.19 | - - | - - | - - |
| ILC | -1.51 | -0.45 | - - | -0.15 |
| ELC | 1.70 | -0.30 | -0.17 | - - |

No Non-Zero Modification Indices for GAMMA

No Non-Zero Modification Indices for PHI

**Modification Indices for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 3.99 | - - | | |
| ILC | - - | - - | - - | |
| ELC | - - | - - | 1.37 | - - |

**Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.20 | - - | | |
| ILC | - - | - - | - - | |
| ELC | - - | - - | -0.15 | - - |

**Standardized Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.20 | - - | | |
| ILC | - - | - - | - - | |
| ELC | - - | - - | -0.15 | - - |

**Modification Indices for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 3.99 | - - | | |
| ILC | 3.99 | 3.99 | 3.99 | |
| ELC | 3.99 | 3.99 | 1.50 | 3.99 |

**Expected Change for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.16 | - - | | |
| ILC | 0.30 | -1.59 | 3.03 | |
| ELC | 0.51 | 1.62 | -0.13 | -5.24 |

**Modification Indices for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | 3.99 | 3.99 | 0.12 | 0.36 |

**Expected Change for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | 12.90 | 0.86 | -0.18 | 0.22 |

**Modification Indices for THETA-DELTA**

| CS |
|---|
| 1.70 |

**Expected Change for THETA-DELTA**

| CS |
|---|
| -3.14 |

Maximum Modification Index is 4.72 for Element ( 4, 1) of LAMBDA-Y

## Factor Scores Regressions

**ETA**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | 0.00 | -0.01 | 0.01 | 0.01 |
| INWOM | 0.00 | 0.71 | 0.19 | 0.13 | 0.02 |
| ILC | -0.02 | 0.14 | 0.80 | -0.03 | 0.06 |
| ELC | 0.01 | 0.05 | -0.02 | 0.92 | 0.01 |

**KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| CS | 0.03 | 0.01 | 0.05 | 0.02 | 0.87 |

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)*

## Standardized Solution

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.96 | - - | - - | - - |
| INWOM | - - | 0.83 | - - | - - |
| ILC | - - | - - | 0.87 | - - |
| ELC | - - | - - | - - | 0.94 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.09 | 0.10 |
| INWOM | - - | - - | 0.55 | 0.35 |
| ILC | - - | - - | - - | - - |
| ELC | - - | - - | - - | - - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.17 |
| INWOM | 0.01 |
| ILC | 0.28 |
| ELC | 0.15 |

**Correlation Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | | | | |
| INWOM | 0.02 | 1.00 | | | |
| ILC | -0.04 | 0.57 | 1.00 | | |
| ELC | 0.12 | 0.37 | 0.04 | 1.00 | |
| CS | 0.16 | 0.22 | 0.28 | 0.15 | 1.00 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.96 | 0.56 | 0.92 | 0.98 |

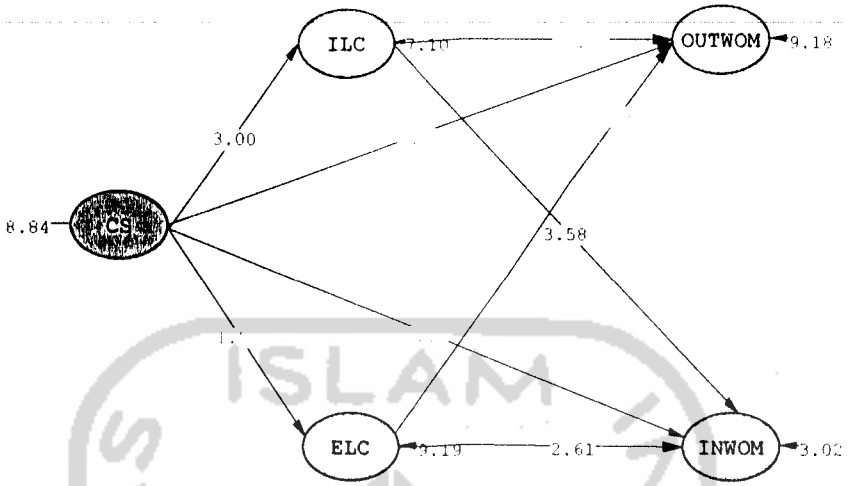
**Regression Matrix ETA on KSI (Standardized)**

| | CS |
|---|---|
| OUTWOM | 0.16 |
| INWOM | 0.22 |
| ILC | 0.28 |
| ELC | 0.15 |

The Problem used 9880 Bytes (= 0.0 of Available Workspace)

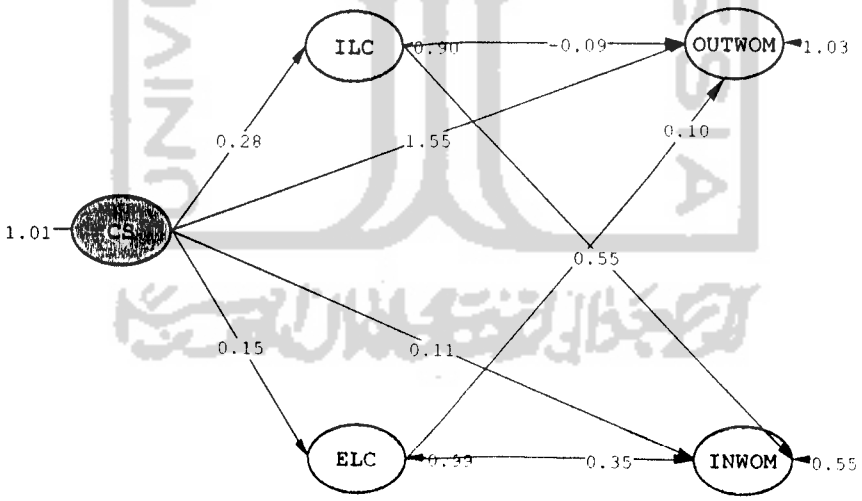
Time used: 0.188 Seconds

**Path diagram (t-values)**




Chi-Square=5.25, df=2, P-value=0.07228, RMSEA=0.115

**Path diagram (estimates)**




Chi-Square=5.25, df=2, P-value=0.07228, RMSEA=0.115

DATE: 7/31/2007
TIME: 23:51

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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The following lines were read from file **C:\CONGEN\CG\SEM2.LS8**:

```
 ONE FACTOR CONGENERY GA 2 1 EXCLUDED
 DA NI=5 NO=125 MA=PM
 LA
 OUTWOM
 INWOM
 ILC
 ELC
 CS
 PM =C:\CONGEN\CG\SEM.PMM
 AC =C:\CONGEN\CG\SEM.ACM
 SE
 1 2 3 4 5/
 MO NK=1 NX=1 NY=4 NE=4 GA=FU,FI BE=FU,FI LY=FU,FI TE=SY,FI PS=DI
LX=FU,FI TD=SY,FI
 LE
 OUTWOM INWOM ILC ELC
 LK
 CS
 FR BE 1 3 BE 1 4 BE 2 3 BE 2 4
 FR GA 1 1 GA 3 1 GA 4 1
 FR
 VA 0.930 LY 1 1
 VA 0.072 TE 1 1
 VA 0.833 LY 2 2
 VA 0.310 TE 2 2
 VA 0.881 LY 3 3
 VA 0.233 TE 3 3
 VA 0.933 LY 4 4
 VA 0.129 TE 4 4
 VA 0.888 LX 1 1
 VA 0.211 TD 1 1
 PD
 OU MI FS SS AD=OFF
```

Number of Input Variables 5
Number of Y - Variables 4
Number of X - Variables 1
Number of ETA - Variables 4
Number of KSI - Variables 1
Number of Observations 125

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED***

## Correlation Matrix to be Analyzed

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| **OUTWOM** | 1.00 | | | | |
| **INWOM** | -0.11 | 1.00 | | | |
| **ILC** | -0.03 | 0.36 | 1.00 | | |
| **ELC** | 0.15 | 0.24 | -0.09 | 1.00 | |
| **CS** | 0.12 | 0.21 | 0.23 | 0.09 | 1.00 |

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED***

## Parameter Specifications

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| **OUTWOM** | 0 | 0 | 1 | 2 |
| **INWOM** | 0 | 0 | 3 | 4 |
| **ILC** | 0 | 0 | 0 | 0 |
| **ELC** | 0 | 0 | 0 | 0 |

**GAMMA**

| | CS |
|---|---|
| **OUTWOM** | 5 |
| **INWOM** | 0 |
| **ILC** | 6 |
| **ELC** | 7 |

**PHI**

| CS |
|---|
| 8 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 9 | 10 | 11 | 12 |

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED***

Number of Iterations = 7

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.93 | - - | - - | - - |
| INWOM | - | 0.83 | - | - |
| ILC | - | - | 0.88 | - |
| ELC | - | - | - | 0.93 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.10 | 0.10 |
| | | | (0.13) | (0.10) |
| | | | -0.76 | 0.94 |
| INWOM | - | - | 0.56 | 0.35 |
| | - | - | (0.15) | (0.12) |
| | - | - | 3.70 | 2.81 |
| ILC | - | - | - | - |
| ELC | - | - | - | - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.18 |
| | (0.11) |
| | 1.59 |
| INWOM | - |
| ILC | 0.28 |
| | (0.09) |
| | 3.00 |
| ELC | 0.15 |
| | (0.10) |
| | 1.50 |

**Covariance Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.07 | | | | |
| INWOM | 0.02 | 0.99 | | | |
| ILC | -0.04 | 0.56 | 0.97 | | |
| ELC | 0.12 | 0.38 | 0.04 | 1.01 | |
| CS | 0.17 | 0.21 | 0.28 | 0.15 | 1.01 |

**PHI**

| CS |
|---|
| 1.01 |
| (0.11) |
| 8.84 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 1.03 | 0.55 | 0.89 | 0.98 |
| (0.11) | (0.18) | (0.12) | (0.11) |
| 9.15 | 3.01 | 7.16 | 9.19 |

**Squared Multiple Correlations for Structural Equations**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.04 | 0.44 | 0.08 | 0.02 |

**THETA-EPS**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.07 | 0.31 | 0.23 | 0.13 |

**Squared Multiple Correlations for Y - Variables**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.93 | 0.69 | 0.76 | 0.87 |

**THETA-DELTA**

| CS |
|---|
| 0.21 |

**Squared Multiple Correlations for X - Variables**

| CS |
|---|
| 0.79 |

## Goodness of Fit Statistics

Degrees of Freedom = 3
Minimum Fit Function Chi-Square = 5.26 (P = 0.15)
Estimated Non-centrality Parameter (NCP) = 2.26
90 Percent Confidence Interval for NCP = (0.0 ; 12.86)

Minimum Fit Function Value = 0.042
Population Discrepancy Function Value (F0) = 0.018
90 Percent Confidence Interval for F0 = (0.0 ; 0.10)
Root Mean Square Error of Approximation (RMSEA) = 0.078
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.19)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.26

Expected Cross-Validation Index (ECVI) = 0.24
90 Percent Confidence Interval for ECVI = (0.22 ; 0.32)
ECVI for Saturated Model = 0.24
ECVI for Independence Model = 0.99

Chi-Square for Independence Model with 10 Degrees of Freedom = 112.89
Independence AIC = 122.89
Model AIC = 29.26
Saturated AIC = 30.00
Independence CAIC = 142.03
Model CAIC = 75.20
Saturated CAIC = 87.42

Root Mean Square Residual (RMR) = 0.055
Standardized RMR = 0.055
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.96

Parsimony Goodness of Fit Index (PGFI) = 0.20

Normed Fit Index (NFI) = 0.95
Non-Normed Fit Index (NNFI) = 0.93
Parsimony Normed Fit Index (PNFI) = 0.29
Comparative Fit Index (CFI) = 0.98
Incremental Fit Index (IFI) = 0.98
Relative Fit Index (RFI) = 0.84

Critical N (CN) = 268.25

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED*

## Modification Indices and Expected Change

### Modification Indices for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 3.53 | - - | - - |
| INWOM | 3.15 | - - | - - | - - |
| ILC | 2.67 | 2.13 | - - | 1.34 |
| ELC | 3.72 | 0.82 | 1.34 | - - |

### Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.31 | - - | - - |
| INWOM | -0.13 | - - | - - | - - |
| ILC | 0.23 | -0.44 | - - | -0.13 |
| ELC | 0.45 | -0.21 | -0.15 | - - |

### Standardized Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.31 | - - | - - |
| INWOM | -0.14 | - - | - - | - - |
| ILC | 0.24 | -0.43 | - - | -0.13 |
| ELC | 0.47 | -0.21 | -0.15 | - - |

No Non-Zero Modification Indices for LAMBDA-X

### Modification Indices for BETA

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 3.53 | - - | - - |
| INWOM | 3.15 | - - | - - | - - |
| ILC | 1.34 | 1.24 | - - | 1.34 |
| ELC | 1.34 | 1.39 | 1.34 | - - |

**Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.33 | - - | - - |
| INWOM | -0.16 | - - | - - | - - |
| ILC | -1.55 | -0.38 | - - | -0.15 |
| ELC | 1.72 | -0.30 | -0.16 | - - |

**Standardized Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.32 | - - | - - |
| INWOM | -0.16 | - - | - - | - - |
| ILC | -1.52 | -0.38 | - - | -0.15 |
| ELC | 1.65 | -0.30 | -0.17 | - - |

No Non-Zero Modification Indices for GAMMA

No Non-Zero Modification Indices for PHI

**Modification Indices for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 3.53 | - - | | |
| ILC | - - | 0.01 | - - | |
| ELC | - - | 0.01 | 1.34 | - - |

**Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.18 | - - | | |
| ILC | - - | -0.04 | - - | |
| ELC | - - | -0.08 | -0.15 | - - |

**Standardized Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.18 | - - | | |
| ILC | - - | -0.04 | - - | |
| ELC | - - | -0.08 | -0.15 | - - |

**Modification Indices for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 3.53 | - - | | |
| ILC | 3.53 | 0.70 | 0.70 | |
| ELC | 3.53 | 0.92 | 1.30 | 0.92 |

**Expected Change for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.14 | - - | | |
| ILC | 0.27 | -0.25 | 0.47 | |
| ELC | 0.46 | 0.41 | -0.11 | -1.32 |

**Modification Indices for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | - - | 0.24 | 0.04 | 0.07 |

**Expected Change for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | - - | 0.04 | -0.03 | 0.06 |

**Modification Indices for THETA-DELTA**

| CS |
|---|
| 1.34 |

**Expected Change for THETA-DELTA**

| CS |
|---|
| -2.79 |

Maximum Modification Index is 3.72 for Element ( 4, 1) of LAMBDA-Y

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED***

## Factor Scores Regressions

**ETA**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | 0.00 | -0.01 | 0.01 | 0.01 |
| INWOM | 0.00 | 0.71 | 0.20 | 0.14 | 0.02 |
| ILC | -0.02 | 0.14 | 0.80 | -0.03 | 0.06 |
| ELC | 0.01 | 0.05 | -0.02 | 0.92 | 0.01 |

**KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| CS | 0.03 | 0.01 | 0.05 | 0.02 | 0.87 |

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED*

## Standardized Solution

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.96 | - - | - - | - - |
| INWOM | - - | 0.83 | - - | - - |
| ILC | - - | - - | 0.87 | - - |
| ELC | - - | - - | - - | 0.94 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.09 | 0.09 |
| INWOM | - - | - - | 0.55 | 0.35 |
| ILC | - - | - - | - - | - - |
| ELC | - - | - - | - - | - - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.17 |
| INWOM | - 1 |
| ILC | 0.29 |
| ELC | 0.15 |

**Correlation Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | | | | |
| INWOM | 0.02 | 1.00 | | | |
| ILC | -0.04 | 0.57 | 1.00 | | |
| ELC | 0.12 | 0.38 | 0.04 | 1.00 | |
| CS | 0.16 | 0.21 | 0.29 | 0.15 | 1.00 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.96 | 0.56 | 0.92 | 0.98 |

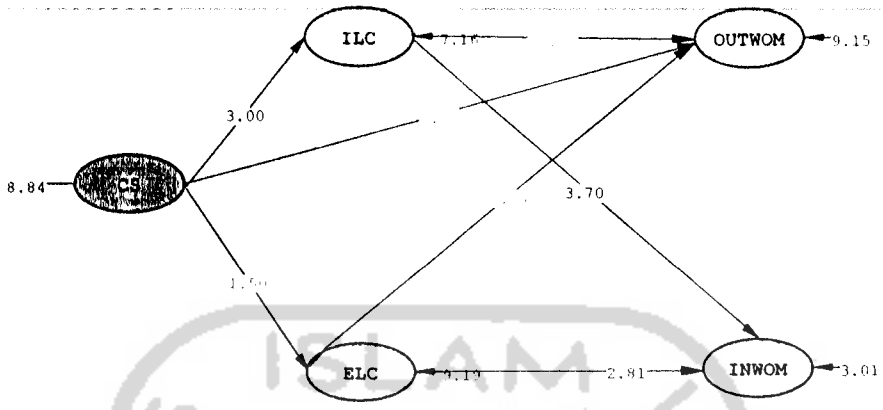
**Regression Matrix ETA on KSI (Standardized)**

| | CS |
|---|---|
| OUTWOM | 0.16 |
| INWOM | 0.21 |
| ILC | 0.29 |
| ELC | 0.15 |

The Problem used 9776 Bytes (= 0.0 % of Available Workspace)

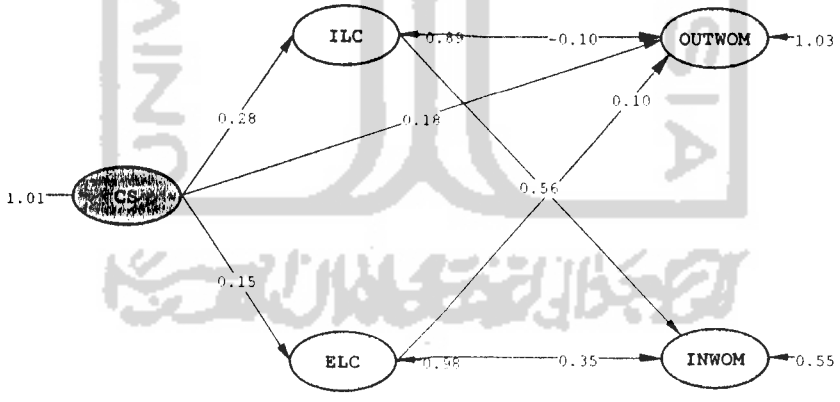
Time used: 0.141 Seconds

## Path diagram (t-values)




Chi-Square=5.26, df=3, P-value=0.15340, RMSEA=0.078

## Path diagram (estimates)




Chi-Square=5.26, df=3, P-value=0.15340, RMSEA=0.078

DATE: 8/ 1/2007
TIME: 0:34

L I S R E L 8.30

BY

Karl G. Jöreskog and Dag Sörbom

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The following lines were read from file **C:\CONGEN\CG\SEM3.LS8:**

```
 ONE FACTOR CONGENERY
 DA NI=5 NO=125 MA=PM
 LA
 OUTWOM
 INWOM
 ILC
 ELC
 CS
 PM =C:\CONGEN\CG\SEM.PMM
 AC =C:\CONGEN\CG\SEM.ACM
 SE
 1 2 3 4 5/
 MO NK=1 NX=1 NY=4 NE=4 GA=FU,FI BE=FU,FI LY=FU,FI TE=SY,FI PS=DI
LX=FU,FI TD=SY,FI
 LE
 OUTWOM INWOM ILC ELC
 LK
 CS
 FR BE 1 3 BE 1 4 BE 2 3 BE 2 4
 FR GA 3 1 GA 4 1
 FR
 VA 0.930 LY 1 1
 VA 0.072 TE 1 1
 VA 0.833 LY 2 2
 VA 0.310 TE 2 2
 VA 0.881 LY 3 3
 VA 0.233 TE 3 3
 VA 0.933 LY 4 4
 VA 0.129 TE 4 4
 VA 0.888 LX 1 1        /
 VA 0.211 TD 1 1
 PD
 OU MI FS SS AD=OFF
```

Number of Input Variables 5
Number of Y - Variables 4
Number of X - Variables 1
Number of ETA - Variables 4
Number of KSI - Variables 1
Number of Observations 125

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1*

## Correlation Matrix to be Analyzed

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | | | | |
| INWOM | -0.11 | 1.00 | | | |
| ILC | -0.03 | 0.36 | 1.00 | | |
| ELC | 0.15 | 0.24 | -0.09 | 1.00 | |
| CS | 0.12 | 0.21 | 0.23 | 0.09 | 1.00 |

*FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1*

## Parameter Specifications

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0 | 0 | 1 | 2 |
| INWOM | 0 | 0 | 3 | 4 |
| ILC | 0 | 0 | 0 | 0 |
| ELC | 0 | 0 | 0 | 0 |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | 0 |
| INWOM | 0 |
| ILC | 5 |
| ELC | 6 |

*f*

**PHI**

| CS |
|---|
| 7 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 8 | 9 | 10 | 11 |

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1***

Number of Iterations = 6

## LISREL Estimates (Weighted Least Squares)

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.93 | - - | - - | - - |
| INWOM | - | 0.83 | - | - |
| ILC | - | - | 0.88 | - |
| ELC | - | - | - | 0.93 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.03 | 0.14 |
| | | | (0.12) | (0.10) |
| | | | -0.27 | 1.39 |
| INWOM | - | - | 0.55 | 0.34 |
| | - | - | (0.15) | (0.12) |
| | - | - | 3.71 | 2.70 |
| ILC | - | - | - | - |
| ELC | - | - | - | - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | - - |
| INWOM | - |
| ILC | 0.29 |
| | (0.09) |
| | 3.06 |
| ELC | 0.12 |
| | (0.10) |
| | 1.20 |

**Covariance Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.07 | | | | |
| INWOM | 0.03 | 0.99 | | | |
| ILC | -0.03 | 0.55 | 0.97 | | |
| ELC | 0.14 | 0.36 | 0.03 | 1.01 | |
| CS | 0.01 | 0.20 | 0.29 | 0.12 | 1.00 |

**PHI**

| CS |
|---|
| 1.00 |
| (0.11) |
| 8.82 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 1.05 | 0.57 | 0.89 | 0.99 |
| (0.11) | (0.18) | (0.13) | (0.11) |
| 9.78 | 3.11 | 7.10 | 9.40 |

**Squared Multiple Correlations for Structural Equations**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.02 | 0.43 | 0.09 | 0.01 |

**THETA-EPS**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.07 | 0.31 | 0.23 | 0.13 |

**Squared Multiple Correlations for Y - Variables**

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.93 | 0.69 | 0.76 | 0.87 |

**THETA-DELTA**

| CS |
|---|
| 0.21 |

**Squared Multiple Correlations for X - Variables**

| CS |
|---|
| 0.79 |

## Goodness of Fit Statistics

Degrees of Freedom = 4
Minimum Fit Function Chi-Square = 7.97 (P = 0.093)
Estimated Non-centrality Parameter (NCP) = 3.97
90 Percent Confidence Interval for NCP = (0.0 ; 16.13)

Minimum Fit Function Value = 0.064
Population Discrepancy Function Value (F0) = 0.032
90 Percent Confidence Interval for F0 = (0.0 ; 0.13)
Root Mean Square Error of Approximation (RMSEA) = 0.089
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.18)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.19

Expected Cross-Validation Index (ECVI) = 0.24
90 Percent Confidence Interval for ECVI = (0.21 ; 0.34)
ECVI for Saturated Model = 0.24
ECVI for Independence Model = 0.99

Chi-Square for Independence Model with 10 Degrees of Freedom = 112.89
Independence AIC = 122.89
Model AIC = 29.97
Saturated AIC = 30.00
Independence CAIC = 142.03
Model CAIC = 72.08
Saturated CAIC = 87.42

Root Mean Square Residual (RMR) = 0.060
Standardized RMR = 0.060
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.96
Parsimony Goodness of Fit Index (PGFI) = 0.26

Normed Fit Index (NFI) = 0.93
Non-Normed Fit Index (NNFI) = 0.90
Parsimony Normed Fit Index (PNFI) = 0.37
Comparative Fit Index (CFI) = 0.96
Incremental Fit Index (IFI) = 0.96
Relative Fit Index (RFI) = 0.82

Critical N (CN) = 207.67

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1***

## Modification Indices and Expected Change

### Modification Indices for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 4.45 | - - | - - |
| INWOM | 4.45 | - - | - - | - - |
| ILC | 1.04 | 2.07 | - - | 1.06 |
| ELC | 2.76 | 0.46 | 1.06 | - - |

### Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.33 | - - | - - |
| INWOM | -0.16 | - - | - - | - - |
| ILC | 0.14 | -0.44 | - - | -0.12 |
| ELC | 0.42 | -0.16 | -0.14 | - - |

### Standardized Expected Change for LAMBDA-Y

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.33 | - - | - - |
| INWOM | -0.17 | - - | - - | - - |
| ILC | 0.15 | -0.44 | - - | -0.12 |
| ELC | 0.43 | -0.16 | -0.13 | - - |

No Non-Zero Modification Indices for LAMBDA-X

**Modification Indices for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | 4.45 | - - | - - |
| INWOM | 4.45 | - - | - - | - - |
| ILC | 3.70 | 1.68 | - - | 1.06 |
| ELC | 1.89 | 1.28 | 1.06 | - - |

**Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.36 | - - | - - |
| INWOM | -0.19 | - - | - - | - - |
| ILC | -0.59 | -0.45 | - - | -0.13 |
| ELC | -1.18 | -0.29 | -0.15 | - - |

**Standardized Expected Change for BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | -0.35 | - - | - - |
| INWOM | -0.19 | - - | - - | - - |
| ILC | -0.58 | -0.46 | - - | -0.13 |
| ELC | -1.13 | -0.29 | -0.15 | - - |

**Modification Indices for GAMMA**

| | CS |
|---|---|
| OUTWOM | 2.69 |
| INWOM | 0.47 |
| ILC | - - |
| ELC | - - |

**Expected Change for GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.18 |
| INWOM | 0.09 |
| ILC | - - |
| ELC | - - |

**Standardized Expected Change for GAMMA**

| | CS |
|---|---|
| OUTWOM | 0.17 |
| INWOM | 0.09 |
| ILC | - - |
| ELC | - - |

No Non-Zero Modification Indices for PSI

**Modification Indices for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 4.45 | - - | | |
| ILC | 2.69 | 0.47 | - - | |
| ELC | 2.69 | 0.47 | 1.06 | - - |

**Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.20 | - - | | |
| ILC | -0.55 | -0.26 | - - | |
| ELC | -1.53 | -0.73 | -0.13 | - - |

**Standardized Expected Change for PSI**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.20 | - - | | |
| ILC | -0.54 | -0.27 | - - | |
| ELC | -1.47 | -0.73 | -0.13 | - - |

**Modification Indices for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | 4.45 | - - | | |
| ILC | 1.43 | 0.94 | 0.74 | |
| ELC | 2.57 | 1.80 | 0.94 | 0.84 |

**Expected Change for THETA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | | | |
| INWOM | -0.16 | - - | | |
| ILC | 0.16 | -0.27 | 0.47 | |
| ELC | 0.40 | 0.59 | -0.10 | -1.33 |

**Modification Indices for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | 2.69 | 0.47 | 0.14 | 0.21 |

**Expected Change for THETA-DELTA-EPS**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| CS | 0.13 | 0.06 | -0.06 | -0.09 |

**Modification Indices for THETA-DELTA**

| CS |
|---|
| 1.07 |

**Expected Change for THETA-DELTA**

| CS |
|---|
| -3.09 |

Maximum Modification Index is 4.45 for Element ( 2, 1) of PSI

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1***

## Factor Scores Regressions

**ETA**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | 0.00 | 0.00 | 0.01 | 0.00 |
| INWOM | 0.00 | 0.71 | 0.19 | 0.13 | 0.02 |
| ILC | -0.01 | 0.14 | 0.80 | -0.03 | 0.06 |
| ELC | 0.02 | 0.05 | -0.02 | 0.92 | 0.01 |

**KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| CS | 0.00 | 0.01 | 0.05 | 0.02 | 0.87 |

***FULL SEM FOR SHOPPING PRODUCT (FIRST MAIN MODEL)AND GA 2 1 DELETED AND GA 1 1***

## Standardized Solution

**LAMBDA-Y**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | 0.96 | - - | - - | - - |
| INWOM | - - | 0.83 | - - | - - |
| ILC | - - | - - | 0.87 | - - |
| ELC | - - | - - | - - | 0.94 |

**LAMBDA-X**

| | CS |
|---|---|
| CS | 0.89 |

**BETA**

| | OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|---|
| OUTWOM | - - | - - | -0.03 | 0.13 |
| INWOM | - - | - - | 0.55 | 0.34 |
| ILC | - - | - - | - - | - - |
| ELC | - - | - - | - - | - - |

**GAMMA**

| | CS |
|---|---|
| OUTWOM | - - |
| INWOM | - - |
| ILC | 0.29 |
| ELC | 0.12 |

**Correlation Matrix of ETA and KSI**

| | OUTWOM | INWOM | ILC | ELC | CS |
|---|---|---|---|---|---|
| OUTWOM | 1.00 | | | | |
| INWOM | 0.03 | 1.00 | | | |
| ILC | -0.03 | 0.56 | 1.00 | | |
| ELC | 0.13 | 0.36 | 0.03 | 1.00 | |
| CS | 0.01 | 0.20 | 0.29 | 0.12 | 1.00 |

**PSI**

Note: This matrix is diagonal.

| OUTWOM | INWOM | ILC | ELC |
|---|---|---|---|
| 0.98 | 0.57 | 0.91 | 0.99 |

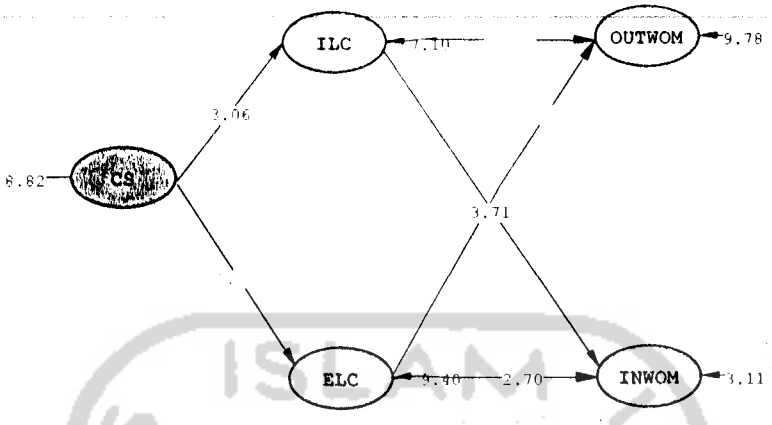
**Regression Matrix ETA on KSI (Standardized)**

| | CS |
|---|---|
| OUTWOM | 0.01 |
| INWOM | 0.20 |
| ILC | 0.29 |
| ELC | 0.12 |

The Problem used 9680 Bytes (= 0.0 of Available Workspace)

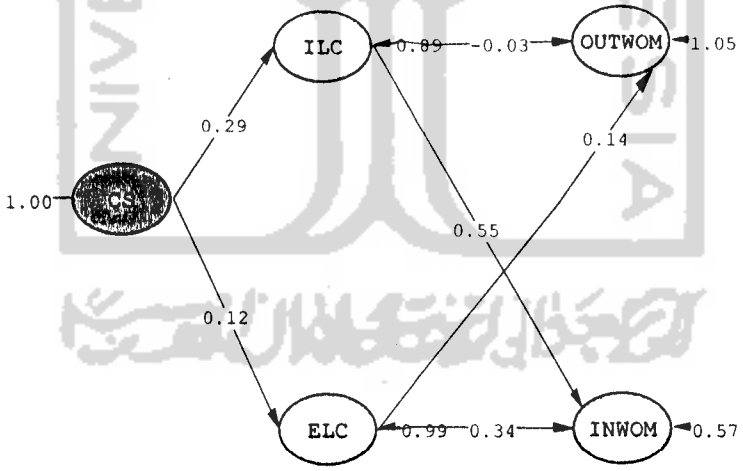
Time used: 0.156 Seconds

**Path diagram (t-values)**




Chi-Square=7.97, df=4, P-value=0.09284, RMSEA=0.089

**Path diagram (estimates)**




Chi-Square=7.97, df=4, P-value=0.09284, RMSEA=0.089