TECNOLÓGICO
DE MONTERREY

Hacemos constar que en la Ciudad de México, el día 31 de enero de 2006, el alumno:

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sustentó el examen oral en defensa de la Tesis titulada:

Measuring Consumer Attitudes about Self-Service Technologies Dimensions: An Exploratory Investigation

Presentada como requisito final para la obtención del Grado de:

Doctor en Administración

Ante la evidencia presentada en el trabajo de tesis y en este examen, El Comité Examinador, presidido por el Dr. Cuauhtémoc Olmedo Bustillo, ha tomado la siguiente resolución:

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INSTITUTO TECNOLÓGICO Y DE ESTUDIOS

SUPERIORES DE MONTERREY

CAMPUS CIUDAD DE MÉXICO

MEASURING CONSUMER ATTITUDES ABOUT SELF-SERVICE TECHNOLOGIES DIMENSIONS: AN EXPLORATORY INVESTIGATION

DOCTORADO EN ADMINISTRACIÓN

TESIS PRESENTADA POR

JESÚS ENRIQUE PORTILLO PIZAÑA

ASESOR

DR. PAUL N. BLOOM

ENERO 2006

Dedications

To my wife and daughters just for exist, be by my side, and sacrifice without any reclamation our family time.

To my parents whose survival, courage and bravery examples, let my find the needed strength to accomplish this goal and give them in live the joy of being proud of their son.

To my brothers, as a sign of my need to rectify with all my heart what ever may be needed to be a good brother for them.

But especially to my little brother for having the heart and courage of a champion, at your short age you already demonstrated that you are a winner.

Acknowledgements

This project could never have been finished without the major contribution and support of several people; I will always be grateful to all of you until the last moment of my life.

- Salvador Garza, who started all this.
- Victor Gutierrez, my perpetual recognition to an intelligent, supportive and tolerant person.
- Jesús Romero, for always challenging me to complete my goals.
- Antonio Rios and Eduardo Flores, for his wise guidance through the entire process.
- My special and eternal friends from the PhD program, who share with me their lives. Ernesto, Alberto, Daniel, Jaime, Carlos, Pepe, Mario, Ricardo, Alfonso, Julio, Andrea, Ana.
- All of my professors, without their guidance and support this will not had happen.
- My colleague professors, who always been concerned about my status in the program and collaborated with me in some way. Carolina, Rodolfo, Martha, Lupita, Armando, Ricardo, Martín, Jorge, Silvia, Nathalie.
- My students, those who contributed in a very special way in the development of this Project.
- The people who answered and actively participate with their opinions and perceptions.
- Macario Schettino, for let me understand and discover my potential.
- My lecturers, for giving me important time and advice.
- Valarie Zeithaml, who motivated this project and generously accept my petition to work with one of the most recognized authority in this field.
- And finally, but SPECIALLY, to Paul Bloom, who make me understand the real concept of a professor, the person who knows how things should be done, but challenge you to discover it by your own in order to learn.

Contents

Chapters

List of figures

List of tables

1. Introduction and Motivation

The industrial revolution is undergoing a metamorphosis… and we are discovering its new identity: the information technology revolution.

"It is useless to tell a river to stop running; the best thing is to learn how to swim in the direction it is flowing". Anonymous.

The world is getting smaller. Today, people from a small town in Mexico can find, evaluate, buy, receive, try, return or re-buy a product directly from a company located anywhere on earth. All this from the convenience of their homes - and in less than a week! Truly, they are entering the age of global digital relationships - based on information transactions between customer and companies -, where higher product quality, a wider array of information, novelty, lower costs, greater selection, and global relationships are some of the advantages offered via the Internet. Although disadvantages exist, the alternatives seem almost infinite.

In the midst of many trends taking place at this historic moment – such as deregulation of industries, privatization of state-owned enterprises, geographical diversification of powerful companies and massive destruction of small ones -, there are two forces that are shaping today's economic landscape: information technology and globalization.[1] By "shaping", we mean that we are learning to harness them, to learn from them and to channel them. They are taking form, and we are trying to contribute in a small way forming them.

Today, the marketplace concept has changed. Customers no longer need to move to where products are sold. They are now making the rules from the intimacy of their computers. Rayport, Jeffrey F. and John J. Sviokla, in their article "Managing in the Marketspace", describe the market-space concept as a "virtual realm where products and services exist as digital information and can be delivered through information based channels".[2]

In Philip Kotler´s words:

"In the coming decade marketing will be reengineered from A to Z. There is little doubt that markets and marketing will operate on quite different principles in the early years of the twenty-first century. The successor to the industrial Society – the Information Economy- will penetrate and change every aspect of daily life. The Digital Revolution has fundamentally altered our concepts of space, time and mass".[3]

There is a new way to serve and take care of customer needs, a new way to keep in touch with them, a new way to increase not only market share but also customer share, a new way to co-design products and apply mass customization, a new way to distribute products. A company doesn't need physical space anymore. It can be a virtual company, sending and receiving information in record times. A company can now provide intangible (digitalized) products like books or music.

We are witnessing the unfolding of the "Information Economy" or "Digital Revolution" as it has been called. We are facing a mass movement comparable in scope to the Industrial Revolution. There is no turning back, and no chance to move in any other direction, so we must learn about it and profit from it. Patricia B. Seybold writes: "Like most revolutions, this can't be stopped. We can't turn our backs on it. We have no choice but surrender gracefully"; and she adds: "This revolution doesn't pertain only to e-business. Every business is now an e-business…there are no e-customers, only customers".[4]

We need to understand that even as this historic moment challenges our generation with the task of defining the Information Technology Revolution, we are not merely dealing with just another management theory or strategic proposition. The Information Technology Revolution is an extensive process of "informatization" of markets which

constitutes the technological transition from standardized manufacturing to mass individualized relationships.

Marketers know that customer time is very valuable and that they spend a lot of time trying to figure out what their best buying option is. Customer decisions are now made more cautiously, examining more information about product quality, price, and convenience. They feel the need to trust people they buy from and to establish a connection with them. In the near future, and thanks to the e-market, most customers will have a broader array of products and suppliers from all over the world, and increasingly user-friendly and fast electronic formats. “Technological developments in information technology on the one hand, and increasing labor costs on the other, are leading to a period of considerable change in the design of service” Karmarkar, Uday S. and Richard Pittbaldo. [5]

Nobody can deny the extent to which technology is transforming our lives, and there surely is a negative side to this transformation. We can call it “depersonalization.” Today, e-mails, automated telephone answering machines, automated tellers, information kiosks, and an increasing number of Self Service Technologies are producing desperate and anxious consumers: people who don’t understand the reason why there is no one catering to their unique and special needs.

A study conducted by the Center for Client Retention found that “about 40 percent of time, the first thing people do when they reach an IVR (Interactive Voice Response System) is dial zero, hoping to talk to a human” Ashbrook (2001). This tells us that people don’t want to deal with talking computers (or maybe computers are not ready to talk yet). People don’t want to spend an hour going through a never ending telephone line menu or waiting on hold. They don’t want to navigate menus without ever finding what they are looking for, or face instant opening windows through their journeys. Of course, this customer position is understandable. Who hasn´t been driven nuts by a monotonous and cold bank service instruction telling you to “please dial your account number…what kind of service are you looking for? …to report a lost credit card dial 1, to

check your balance dial 2…etc, etc…if you need personal assistance dial zero…" After this, we only hear "our customer service agents are now busy. Please stay on the line"…and went back to "to check you balance dial…" This cycle can keep going and going and going like the energizer bunny. As Ashbrook (2001) points out, the message that comes across is: we don't care about you unless you're here to buy something. Our operators don't have time to talk to you, but you have time to wait. At some point during a transaction process, people may want to interact with "customer focused" company representatives, experts who know about product performance, people they can trust or who can listen to their needs. They are looking for someone who can come up with solutions instead of justifications.

What a customer feels about a brand is normally related to his experiences with that brand (it is a continuum of brand evaluations). This, of course, creates expectations which are normally positive, until they turn negative. When this happens, it likely leads customers to look for business elsewhere. So, if companies are not aware of customers' needs, expectations, and perceptions, they will die for sure. Professor Claes Fornell from the University of Michigan says: "If the market works the way it's supposed to, someone is going to figure out the value of improving these [IVR Systems], and make a lot of money off their lagging competitors". Ashbrook adds: "Up to now, though, there hasn't been much penalty for failure, because almost everyone is equally bad" (as cited on Ashbrook 2001).

In terms of customer perspective, what Patricia B. Seybold proposes makes total sense: "In the customer economy, loyal customers have become the most precious commodity. Today the hardest thing for a company to acquire is not investment capital, products, employees, or even a brand, its customer loyalty. Customer relationships are the fundamental source of value in the new customer economy". Of course we are not saying that we must forget about Information Technology and concentrate only on customer relationships, but rather that there is a strong need to adapt and transform the information overflow into strategies that build customer loyalty.

"The pace of change is so rapid that the ability to change has now become a competitive advantage"
Richard Love of Hewlett Packard.

Ashbrook (2001) states: "We live in the age of one-to-one marketing. Technology, according to virtually everyone who is anyone in the business world nowadays, has caused an epochal shift in power from sellers to buyers, putting pressure on companies of all kinds to establish close and lasting bonds of trust with their customers. How, then to explain the electronic fortress that so many companies have erected against questions and complaints? "

Efficiency and quick adaptation to change appear to be the answers for today's consumer needs. As company characteristics, they create loyalty. Whether we are talking about personal relationships or technological contact, satisfied customers represent more profits, a positive word of mouth, and a successful "caring" image. It is important then to understand the crossing line between the need and acceptance of Self Service Technologies and Personal Encounters. Selnes and Hansen[6] propose two models to understand these relationships. In the first model (the replacement model) they propose the idea that if people need less personal service and instead they look for self service, they will not create social bonds and as a result, customer loyalty will be lessened. The second model (the hybrid model) proposes the idea that self service removes operational service activities allowing service personnel to concentrate on consultative service activities. This is based on Christopher Lovelock´s idea (1983) that there are two kinds of service interactions, operative and consultative. Operative is for the service employee repetitive in nature and consultative interaction requires a high degree of individual judgment. Operative procedures are well suited for automation whereas consultative activities are not.[7]

Efficiency and quick adaptation also stimulate product adoption. If a company markets its technology in an appropriate way, this will represent an acceleration of the product adoption process. This, in turn, makes it easier for customers to do business with the

company[8]. It is extremely important for companies to maintain product quality and price leadership, but it is more important to inform appropriately about it (using the advantages of self service technologies) and to gain customer confidence (through personal customer contact with company product experts who can assist them an solve their problems).

The Internet now offers the possibility to buy directly from manufacturers at a lower cost – due to economies in areas like promotion, inventories, distribution and human resources. The problem, apparently, is that we just don't know what the exact cost of "doing things wrong" is. We don't exactly know how much customers value lower prices in comparison with expert assistance and meaningful relationships. We need to keep the learning curve concept in mind: "making things right the first time and better the second time". This will obviously cut costs for future transactions. Does this learning curve concept apply for the Customer Service department? How willing are clients to let you experiment with them? We must remember that it is more expensive to gain new clients than to retain them.

A better understanding of this technological construct will lead to a better definition of market strategies. If we have the ability to understand the rationale governing preferences for self service technologies or for personal service, we can adapt and adopt in order to create customer loyalty. The opportunity to create lasting relationships with customers through consumer education and attention programs will always be there. How can self service and personal service be integrated? That's the question we must re-frame (Selnes and Hansen, 2001).

A company can develop a better understanding of the consumer decision process related to self service or personal service. If it manages to do this in a technology-driven environment with personal relationships in mind, it will succeed. According to
Info World, April 3, 2000: "With the competition only a click away, the pressure is on every e-business to distinguish itself with better customer service".

The best promotional tool to encourage sales is word of mouth. One implication of an ill-suited technological strategy is the impact of negative word of mouth when the perceived quality of service is bad. Customers are “no longer willing to be locked in. They want great service, fair prices and innovative offerings. If they don’t get these, they’ll go elsewhere and they’ll tell the world”, Patricia B. Seybold (2001).

2. Problem definition

The preceding examples lead us to a couple of relatively old but still present problems: what should the balance between expected service and perceived service be? (as illustrated in Fig 1), and what is the size of a tolerance zone? (Zeithaml, Parasuraman, Berry, 1990) (Zeithaml and Bitner, 2000).

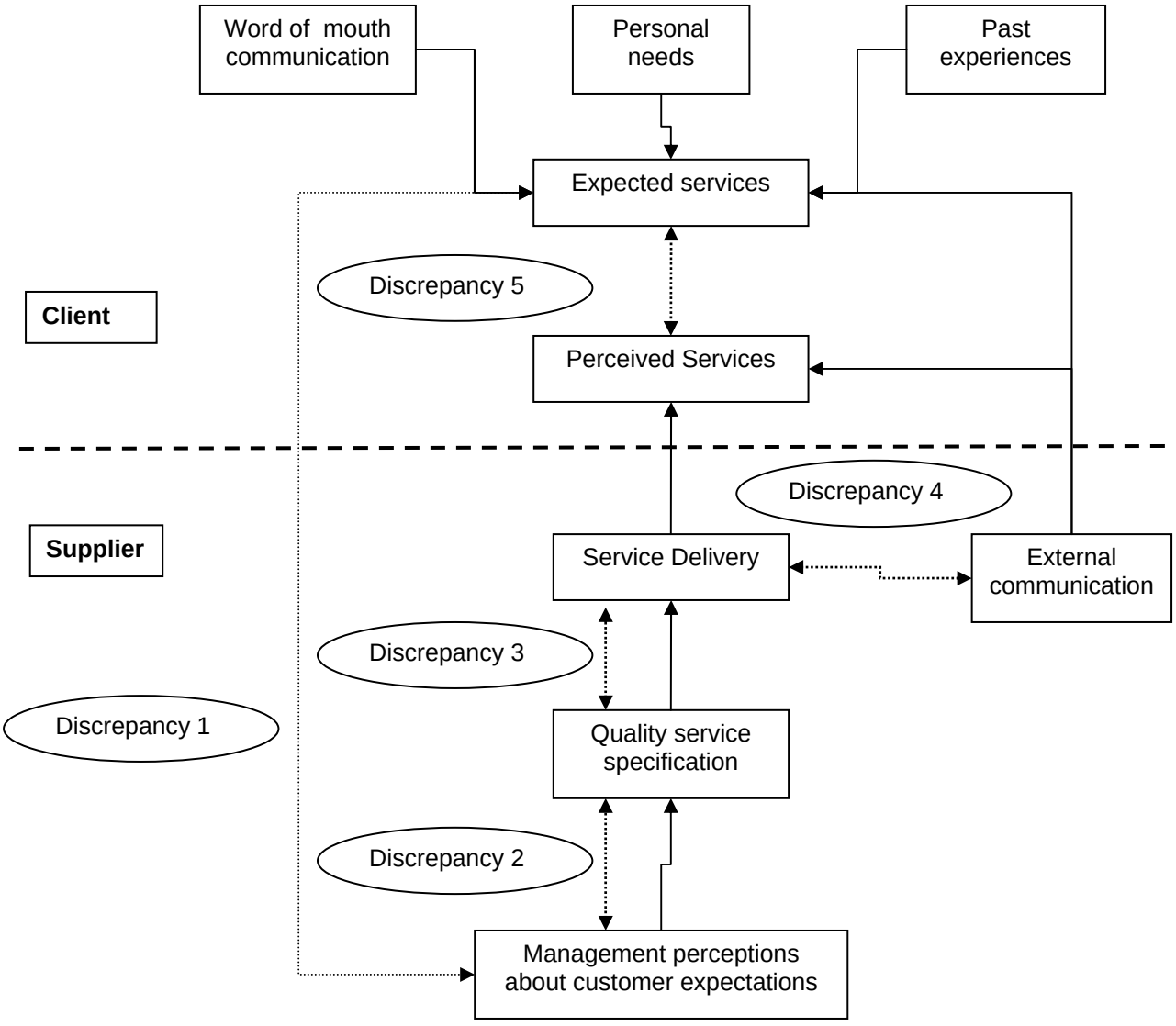


Fig. 1 Service-Quality Model

Taking these concepts as a background for our problem definition, we can consider that there might be a difference between the perceived level of satisfaction received through self service technologies, and the level of satisfaction through personal service. In fact, there is an increasing interest in this topic. There are a few articles - Parasuraman (2001), Bitner et al (2001), Dabholkar and Bagozzi (2002), Selnes and Hansen (2001) - that show the importance of knowing the difference between virtual service and personal service. Equally important is to know the factors that influence consumer preferences regarding these two options. Nowadays we know the personal service dimensions (Zeithaml, Parasuraman, Berry, 1990), but we are not sure about the one's affecting self service technologies. For the purposes of this project, we'll define self service technologies as: "technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter et. all, 2000).

2.1 Customer Economy vs. Information Economy

These days, there's an increasing discussion about the pros and cons of self service technologies. These concepts have a huge market potential in business strategy, especially if we consider the "cocooning" trend, that is, the impulse to stay inside when the outside gets too tough and scary, Popcorn (1992). However, we are still in the first stages in using self service technology, and we cannot be certain that people will always prefer this option.

In addition to this uncertainty, we may not be doing things properly. Steve Jarvis, in his article "Yes I Would like some help thank you" states: "Online retailers are both the champions of customer service and the goats, compared with their offline brethren and with companies that sell goods both on and offline, according to a study by Jupiter Media Matrix". And he adds: "Retailers should take note: a separate November 2001 JMM internet survey of more than 2000 consumers nationwide indicated that customer service e-mail response times are a significant factor weighing on future purchase decisions". Although customers are looking for some positive attributes of self service, if

they don't get them, if they don't work properly for them, or if they didn't find any assistance in using them, they will find another option; of course, this option will always be personal assistance, and here is were our discussion starts, we need to discover how to integrate both concepts, self service technologies and customer focus.

Executives know this, and they're focusing on technological customer service. Five hundred and three senior executives revealed that they perceive "improving customer service and support" as the number one concern for improving their e-business competitiveness[9] American Management Association, "American Management Association Survey: E-business in the year 2000"; New York, NY, 2000.

Why Customer Economy?

Customers are now in control, and they are tired of fighting with companies that don't care and don't want to attend their needs. Today, customers have more options and are looking for convenient relationships. They can say "if you don't want my money, somebody else will". Customers are "no longer willing to be locked in. They want great service, fair prices and innovative offerings. If they don't get these, they'll go elsewhere and they'll tell the world" Patricia B. Seybold (2001).

"The paradigm has shifted. Products come and go. The unit of value today is customer relationship" Bob Wayland[10]. If (according to this kind of marketing strategy), we need to focus primarily in customer relationships, How can we build a virtual relationship? Well, we can, we need toll free lines, 24 hour lines, we need computers with video cameras, we need internet connections with all kind of assistance buttons, but more important, we need to make things clear and easy for consumers. If we can do this, we are going to create mass individualized digital relationships with any customer in the world. If we can do this and have the prices and products customer are looking for, we are going to win the e-commerce battle by "possessing" more loyal customers in our databases.

"Today the hardest thing for a company to acquire is not investment capital, products, employees, or even a brand, its customer loyalty".
Patricia B. Seybold 2001.

Technology and globalization are raising the need for assistance. The anxiety that we face trying to use more complicated tools (like computer software and hardware) is so huge that in many cases we prefer no to buy them. We need help, and personalized assistance that gives us a comfortable feeling. Someone there to tell us: "don't worry I can help you".

Fortunately, this is not a surprise for experienced CEOs. According to a poll released on 2002 for more than 700 technology marketer's in 17 countries, the main strategy technology companies should employ to sustain their brands in challenging conditions is to reinforce relationships with their best customers[11]. From now on, challenging conditions will be a constant, not only a situation experienced during economic downturns.

Why Information Economy?

In the other hand , thanks to Internet and to all different kind of wireless devices and self service technologies, customers have now control regarding search, evaluation and buying decisions. They are better armed for the market battle, and ironically as it sounds, companies are giving them the weapons. Besides those weapons, there are peaceful keys that open companies' doors. Every company wanting to succeed in the future marketspace should give its key to every single customer; again, to understand the divergence between customer and technology focus, we need to understand the basis for each approach, customer economy focus on customer needs while information economy focus in technological development (not necessarily what customer know he need, but what technology can build for them).

There is another battle taking place inside companies' headquarters. "The competition between sales channels – electronic and brick-and-mortar - is growing more and more, with electronic channels possibly getting the upper hand in the future" Kotler (1999); the decision about which channel to select looks unnecessary, why not a combination of both strategies? The answer is not so easy. Cost, revenues, profit, customer service, competitive advantage, market share, positioning, customization, customer satisfaction and loyalty are all factors which must be considered. There are many companies that place the bet over the internet advantages, but there are some others that put more weight on the benefits and experiences consumer gets while buying inside retail stores. Companies like Barnes and Noble and Nike, are trying to compete with virtual stores by coming up with creative and amazing in-store experiences.

There is a strong opinion that electronic channels attract business away from store-based channels in many goods and services categories. Electronic markets offer a lot of advantages to the buyers, mainly:

- Availability. Seven days a week, 24hrs a day.
- No need to drive, park and shop in store, and a consequent saving of cost and time.
- Potentially lower price

Disadvantages:

- The wait to receive the ordered items. Might be as little as a day or much longer
- One cannot touch and feel the merchandise before ordering", Kotler (1999).

Notwithstanding this "indoor-outdoor" shopping battle, the learning curve seems unfavorable to e-commerce. Some criticisms are that dot-coms get low grades for customer service[12] and that on-line retailers need to radically improve customer service[13]. Due to the rapid evolution of on-line technologies, we still know relatively little about how they might be best designed or integrated in to customer service operations.

"Traditional brick and mortar service providers who are now venturing into the previously uncharted waters of the electronic marketplace find their experience with face to face customer service to be only partially applicable to this new context.
They are discovering that traditional back-office notions about the design of the customer contact episode may need significantly altered when moving from a physical environment to a virtual one".[14]
Dan Briody

We have no doubt that information technology is a vital element in the effective development of new service frontiers as well as potentially integral component for world class customer service. We need to remember that there is no need to swim against the river; the best thing we can do is to learn how to swim in the direction it is flowing.

2.2 Learn to assist.

"What you don't know, won't hurt you"
Anonymous.

The statement above may be true for personal, social or political relationships, but it is absolutely wrong for business management and strategic planning. We need to understand the how and the why of things. We need to know about their dynamics, their dimensions, and their interactions. In order to master the use of the information economy process, and to increase customer share, we need to know how it works.

But if we are trying to understand only the ups and downs of the information economy, we are going to miss the real and meaningful transformation taking place right now: customers are now in control over the market space. Customers "now expect us to harness information technology to make life more convenient to them".[15]

Let's consider the following examples:

> Corporate Apparel was launched as an internet direct sales company, selling corporate-branded clothing. The company had a promising start with an average of 1,500 clicks a month, indicating a high level of interest in the company's products. But monthly sales revenue in that first year was as low as $12,000. Then, Corporate Apparel first step was to examine the customer feedback received. "Our site had a few more navigation steps required before a customer could get to the ordering process. There are many people who still want to have that hard copy catalog in front of them. That's something you can't do on the Web" says Phillip Beukema Corporate Apparel CEO.
>
> "Companies are beginning to realize that people like to browse online and shop around" "More people are doing product evaluation and research, and often want to go to the site to make a purchase. In terms of e-commerce, the whole idea is to make the shopping experience as easy as possible." Reg Baker, COO of Market Strategies Inc.[16]

Moreover, "The Boston Consulting Group estimates that providing customer care, costs a typical on-line retailer $2.40 and that roughly 60% of the orders received, require some form of contact with customer service"[17]

However, the purpose of adaptation is evolution. Human customer service is costly. A call handled from start to finish by an IVR system costs, on average, 45 cents, according to a research conducted in 2001 by the Garner Group. When we let a human into the act the cost jumps to $7.60[18]. We need to teach and support customers shoulder to shoulder in this learning process, but we don't want to be in the "learning process" forever. As Jeff Bezos said "we'll stay on the phone and teach a customer how to place an order online, but we don't want them to get in the habit of calling us".[19]

We need to follow the river of technology to avoid drowning. We also need to understand and adapt technology to customer convenience. People still want to touch, smell and feel the products, still want to have expert assistance on complicated decisions; they still need to trust on honest company's representatives, they still need to have social encounters! What are the dimensions they are looking for in self service technologies? When do they need self service technologies?

3. Theoretical Foundations

In the past, a vast majority of services research work was made focusing on relationships between service employees and customers, and the kind of outcomes generated on those interactions. Today, this approach is no longer appropriate. Even when there is a lot of research based on the idea that an interaction between a service employee and a customer is needed for the delivery of the service to be completed, this is not necessarily true. Services "can be very well provided by hard technologies" (Thomas 1978). A good example of this is customer service over the telephone. At one time it required a company representative to talk to, and now the service in many cases is automated. We don't know how this may influence the interaction. Moreover, we don't have the service dimensions for this new type of encounter. At the beginning there were only the ATM machines, but now, "there are three main forms of self service interactions: automated response telephone lines, internet based interactions and self service machines or kiosks" (Bitner 2001).

A central purpose of any academic and scientific investigation is to propose new ways and definitions to better understand constructs and variable relationships. Today, due to the increasing amount of service delivered through self service technologies, it is crucial to understand self service technologies dimensions that influence the service encounter. In this investigation we assume that there are some variables affecting consumer selection of automated services and we also assume we can measure it.

There are many theories handling the service construct, and they all start from the existing relationship between customers and a company's service employee. There have been different attempts to integrate the idea of customer-employee interactions in several business areas. Two of the most interesting are marketing and operations management - based on the general idea that efficient operations will lead to satisfied and loyal clients.

Consequently, to understand self service dimensions, we need to start thinking about the service encounter, in other words, the “period of interaction between customer and service provider” (Gutek et al 1999). This comes straight from Customer Contact Theory.

3.1 Customer Contact Theory

Customer Contact Theory has gained renewed interest nowadays; basically because it is the departure point for understanding what consumers want from a service interaction.

The customer contact concept appeared in 1977 when Chase and Aquilano proposed a differentiation of service systems from manufacturing systems. They put forward the idea of three levels of services, from pure services to quasi-manufacturing services. Later Chase (1978) suggested the idea of classifying services along a continuum, from high to low contact, where customer contact refers to the length of time the customer is in contact with a company’s service. Service delivery process will require certain specific characteristics depending of the required level of customer contact, like operational design, prepared staff, infrastructure support, efficiency and so on. Continued work by Richard Chase on customer contact theory lead to the formal introduction of the construct idea and the first operational definition: “the time in the system relative to the total time of service creation” (Chase 1981); also Chase and Tansik (1983) presented the Customer Contact Model to introduce several dimensions of service production and comparing advantages and disadvantages for the different levels of service categories. But it was Weemmerlöv (1990) the one who designated it Customer Contact Theory; although he proposed a taxonomy for service processes, based primarily in Chase proposal of a continuum of customer contact and also based on an extended literature review in service design and operations management, he recognized that there is still a lot of research needed to understand the Customer Contact Theory.

Kellog and Chase (1995) identified however that “there are some essential dimensions or variables to be considered when defining Customer Contact. These dimensions can

be grouped under three broad theories: Coupling, Interdependence and Information Richness". But in the same article, Kellog suggest the idea that Customer Contact is defined primarily by three factors: communication time, intimacy level and information richness.

More recently, Silvestro, Fitzgerald, Johnston and Voss (1992) proposed one of the first attempts to categorize service processes considering several classifications and also based on Chase (1978) customer contact continuum. In his work, these authors proposed what could be a first movement to service categorizations:

1. Equipment/ people focus
2. Customer contact time per transaction
3. Degree of customization
4. Degree of discretion
5. Value added back office/ front office
6. Product/ process focus

3.2 Service Quality Theory

Delivering Quality Service (Zeithaml, Parasuraman and Berry, 1990) is a research work that discovered the dimensions that consumers seek on personal service relationships and also discovered the relative importance of each factor. One of the first important contributions of this "Research Journey", as the authors described it, is the general idea that there were service quality dimensions. As we can see, there was a first approach to understand Customer Assessment of Service Quality; the authors suggested the possibility of 10 dimensions (or variables) affecting the perceived Service Quality. After an exploratory research, there was a quantitative phase involving customer surveys in different sectors from where it appear the SERVQUAL's five dimensions (SERVQUAL is the authors proposed instrument for measuring customers' perceptions of service quality).

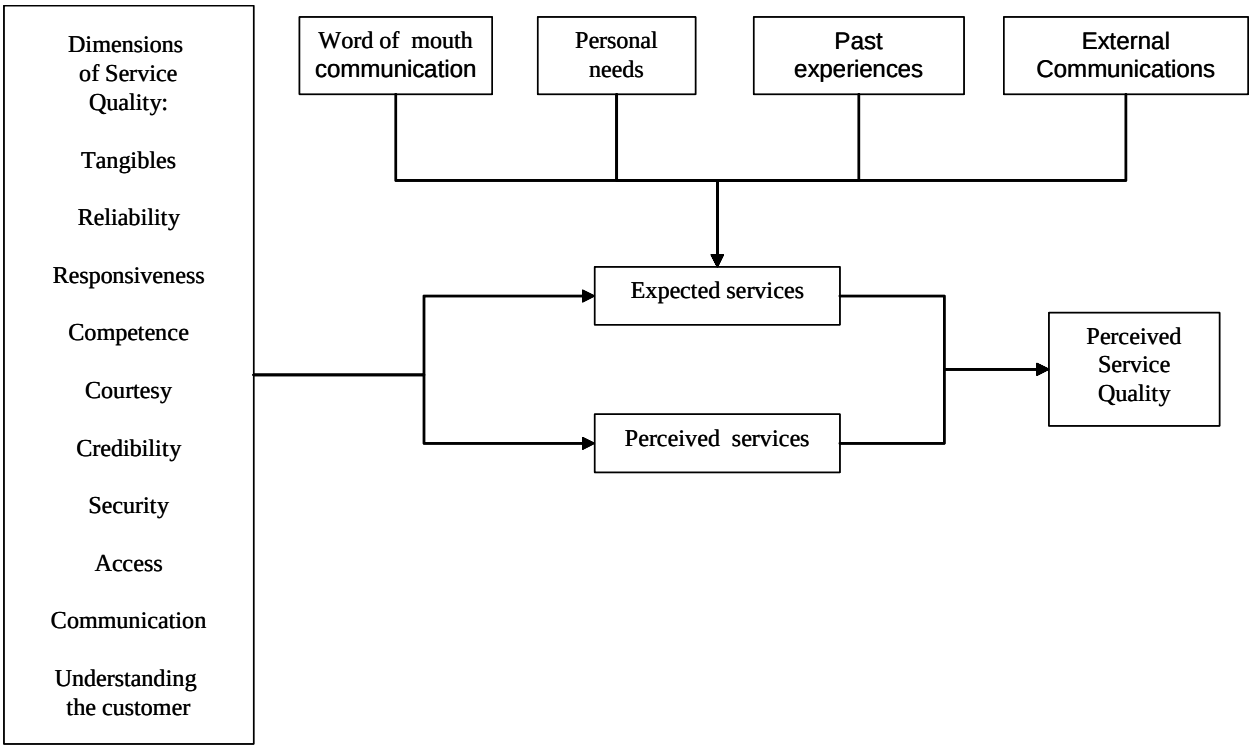


Fig. 2 Customer assessment of service quality model

When trying to identify the relative importance of the final five dimensions, the authors find that the most important one was reliability, which means consumers expect companies to do what they are supposed to do and offer.

Reliability (32%)	The ability to perform the promised service dependably and accurately
Tangibles (11%)	The appearance of physical facilities, equipment, personnel, and communications
Responsiveness (22%)	The willingness to help customers and to provide prompt service
Assurance (19%)	The knowledge and courtesy of employees and their ability to convey trust and confidence
Empathy (16%)	The provision of caring, individualized attention to customers

Table 1 Service dimensions

In self service technologies interactions, it is highly probable that this factor could have the same importance, but the meaning of reliability could be very different. In self service technologies, reliability means performance or technological systems operation. In a different way, interpersonal interactions means a person's ability to perform a service. This may sound similar, but the difference is the possibility of standardization of the outcome.

Self service technologies may offer a more standardized product. On the other hand, they might have other limitations. For example, the lack of personal assistance to complete a task, and the lack of customization.

It is important then to understand the mix of strategy, self service and personal service in order to better serve both customer and company needs. In some cases, consumers don´t have options. If you want to check your personal bank account, you first have to wait until the printed version arrives trough postal service (late in many cases) or call to the bank and interact with an automated telephone system. This leads you through different dialing numbers without giving you the chance to interact with a person if you want (or need). When this happens for the first time, consumers do not react negatively to that interaction, why should they? At the end it is an effort of the companies to give you another option to serve you (through self service technologies) or not? But, what happens when this turns to be a common experience? Do customers tolerate the service failure? Do they prefer to switch to personal assistance? For how long? How do these accumulated experiences affect the Service Quality Model? Zeithaml, Parasuraman and Berry (1990) demonstrated that in many cases consumers "accept" a lower level of achievement in first time service due to lower expectations and expect a higher level when companies offer the service for a second or third time.

Many managers understand that self service technologies are a very important tool for information, image and sales; the problem here is that in many cases, they don't understand what consumers are looking. This of course is reflected in the way they interpret the "market opportunity", they know that self service technologies give them a

chance to interact with consumers in a different level (when they needed it) and at lower cost. This lack of technology knowledge gives us the opportunity to realize the need for understanding the different dimensions of self service technologies (if there is any) based on Quality Service Theory.

At this point, and considering both the Customer Contact and Quality Service theories, we need to jump to another important theory to understand and propose a Self Service Technology Operation Paradigm. Despite the time and quality of an interaction a company thinks a customer is involved in, it is the customers' perception of that interaction which might influence his attitudes about the service encounter, not the "objective" measurements of the company's performance in each factor. So, even when appropriate measures are valuable for managers, in the marketing arena, "there is a battle of perceptions, not products" Ries and Trout (1993). Therefore, this investigation will focus on customers' perceptions and feelings about using Self Service Technologies - while gaining a more complete understanding of technology design and automated service quality encounters.

3.3 Theory of Reasoned Action

For many years, investigators from different areas have been seduced by behavioral models from social psychology as an attractive theoretical and practical option to understand and predict an individual's behavior. The Theory of Reasoned Action is one of the most adopted models to explain human behavior for a simple reason: it is "designed to explain virtually any human behavior", Ajzen and Fishbein (1980).

Managers have a very limited ability to control customer beliefs and attitudes. At best, they can only hope to appropriately design the service so that the customer will form beliefs that lead to a positive attitude (like satisfaction), making them more likely to engage in future contact and repeat business (loyalty).

Fishbein (1965) (as cited by Cohen, Fishbein and Ahtola, 1972) stated that:

> "Essentially, the theory may be stated as follows: (1) an individual holds many beliefs about any given object, that is, many different characteristics, attributes, values, goals, and concepts are positively or negatively associated with any given object; (2) associated with each of these 'related objects' is a mediating evaluative response- an attitude; (3) these evaluative responses summate; (4) through the mediation process, the summated evaluative response is associated with the attitude object; and thus (5) on future occasions the attitude object will elicit this summated evaluative response- this attitude...According to the theory, then, an individuals attitude toward any object is a function of (1) the strength of his beliefs about the object and (2) the evaluative aspect of those beliefs."

In addition, a Behavioral Intention is conceptualized as a measure of the strength of one's intention to perform a specified behavior. An Attitude is defined as an individual's positive or negative feelings about performing a specific behavior. Fishbein's Model also proposed the existence of Subjective Norms influencing behavioral intentions. A Subjective Norm is defined as: "a person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein and Ajzen 1975)

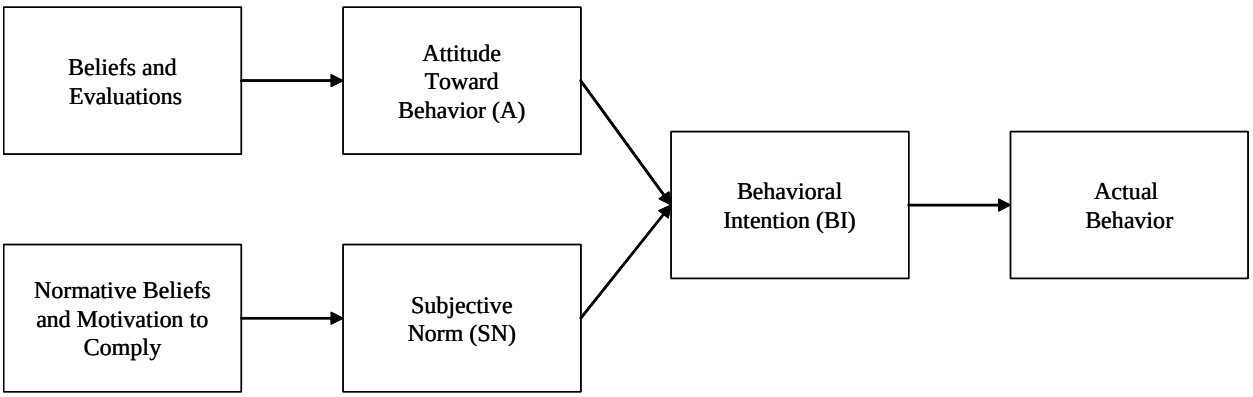


Fig. 3 Reasoned action model

The implication of this model is that there are certain beliefs associated with a specific group of characteristics (dimensions) offered in a contact experience that may lead to an attitude towards the entity offering that experience (an automated service for the purpose of this research). In addition, an evaluation of those dimensions will be correlated with customers intentions to use automated service.

In summary, we can argue that there are many beliefs associated with any particular object and that a combination of this beliefs leads to an attitude towards that object in the minds of consumers. Attitudes and norms don't directly predict behavior, they predict intentions - and intentions predict behaviors.

Any other variable that may influence behavioral intentions could do so only indirectly, trough Attitudes or Norms. This means that any perceived and evaluated aspect will fall under the classification of "external variable" (Fishbein and Ajzen 1975). If this is the case, then we must consider attitude as a moderating factor between any internal (psychological) or external (environmental) variable and behavior.

3.4 Technology Acceptance Model

A derivation of the Fishbein Model is the Technology Acceptance Model (Davis 1986). This model included and tested two specific beliefs: perceived Usefulness and perceived Ease of Use. Perceived Usefulness is defined as "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context". Perceived Ease of Use, "refers to the degree to which the prospective user expects the target system to be free of effort" (Davis et al 1989).

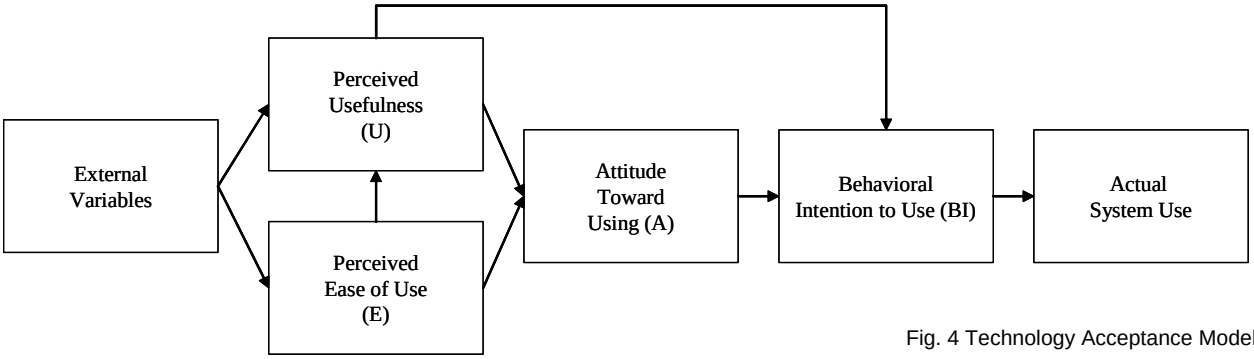


Fig. 4 Technology Acceptance Model

What's interesting from this proposal is that it suggests two possible variables affecting attitudes towards technology acceptance (in this case for computer systems). The extracted general idea from Perceived Usefulness is that users (or consumers in general) will benefit from the continuous usage of technology, and that there will be a certain kind of reward or value generated through the use of automated systems.

On the other hand, Ease of Use means that if consumers feel there are complications in using a certain technology, chances are high that they will stop using it or change to another variation of that technology. Thus, the easier it is to interact with an automated system the more positive attitude towards the intention to use it. These two factors account for about 40% of the variance in intention to use and actual usage behavior.

The main contribution of the Technology Acceptance Model is the recognition of what may well be the first two variables affecting people's choice of automated systems. This sets a precedent for identifying the names of the "external variables" recognized by the Theory of Reasoned Action (Fishbein and Ajzen 1975). The Technology Acceptance Model also shows that there is some kind of relationship between each dimension. A perceived ease of use could lead to a sense of efficacy and usefulness.

Recently, other authors are trying to propose other factors. One is "perceived risk" (Featherman and Fuller 2002). This approach suggests the idea that consumers may be influenced during the buying decision process by feelings like uncertainty, discomfort, anxiety, conflict, concern, and cognitive dissonance.

3.5 Techno-Ready Marketing

To build reliability in marketing services (Quality Service Theory), we must consider several elements to be successful. Berry and Parasuraman (1991), propose the “Three Pillars of support for service reliability”. Here, the authors emphasize the appropriate management vision (customer focused), the specific need for adequate infrastructure, and the need for testing the “product”. It is important to offer the customer new ways to approach our companies, but it is equally important to understand how they feel about us and how they interact with us.

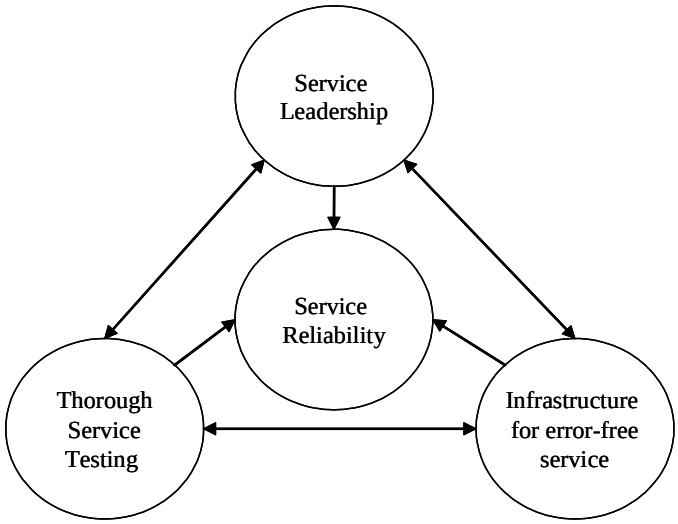


Fig. 5 Three pillars of support for service reliability

Four recent outstanding articles deal with the influence of technology in consumer behavior: “Technology readiness index (TRI): a multiple item scale to measure readiness to embrace new technologies” by A. Parasuraman (2001); “Self Service Technologies: Understanding customer satisfaction with technology-based service encounters” by Meuter et al (2001); “Paradoxes of Technology: customer cognizance, emotions and coping strategies” by Mick and Fournier (1998); and “An attitudinal model of Technology-based self service technologies: moderating effects of consumer traits and situational factors by Dabholkar and Bagozzi (2002).

These articles show different approaches to understand the influence of technology in our daily lives, especially in service encounters. In addition to the theories presented before, there are some other important factors considered as a base to identify an empirical definition of what could be the dimensions of self service technologies interactions: fulfillment of needs, efficiency, performance, safety, convenience, design, human touch, and novelty. These concepts are important in measuring the level of satisfaction for individuals using this kind of virtual service, as well as their level of willingness and disposition to interact with automated systems.

We also have the following forces, called the Digital Dozen, Seybold (2001).

1. Open, equal access	2. Convenient access	3. Pricing transparency
4. Control over their information	5. Information portability	6. Choice of distribution channels
7. Real time information	8. Process transparency	9. The ability to set prices
10. Specialist information	11. Logistics transparency	12. Fair, global pricing

Table 2 The digital dozen forces

How many cases do we know of managers who were so impatient to implement new technologies that they did it before they were ready, before having the appropriate infrastructure or before enough testing with consumers? How did this lack of information and this misguided process affect consumers' decisions?

Here is where the concept of Techno-Ready Marketing (Parasuraman and Colby, 2001) comes into play. It introduces the idea of taking personal care in consumer support. Clients trust the specialist, and they need this specialist at the beginning of a process when they don't know how to use the "new products". Clients need education and support during the initial moments of fear and frustration. In the next years, "we are going to see the need to invest in consumer education programs; not because they are more stupid, but because they are more intelligent due to the information age" (Honevbein, 1996).

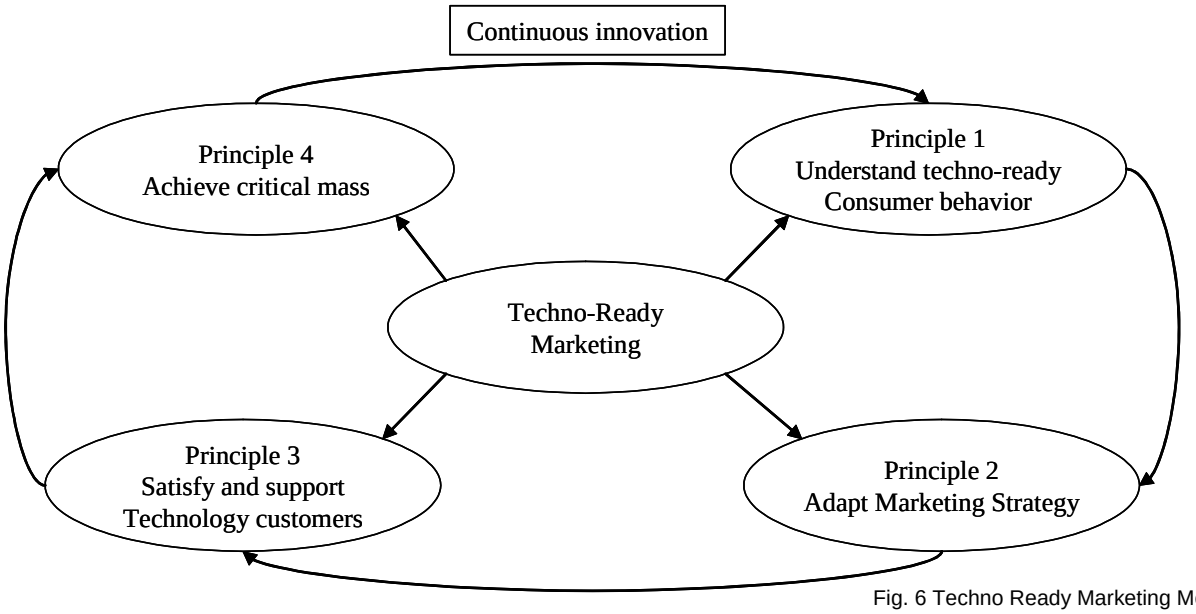


Fig. 6 Techno Ready Marketing Model

Self Service Technologies do not require interpersonal contact to complete a transaction. In many cases, the flexibility, adaptability, availability and profitability of technology may compete with the company's customer service employees and sellers. In other cases, technology may not be the appropriate answer or may not be able to directly an immediately address customers needs.

There are basically three types of interfaces for self service technologies known: Telephone/Interactive Voice Recognition Systems (IVR's), Internet and Interactive Kiosks/ATM's (IK's) (Meuter et. all, 2000). We exclude the video/CD alternative proposed by Meuter, because it includes any of the other three alternatives.

3.6 Satisfaction Theory

Trying to propose a new definition of consumer satisfaction could result in time wasting and is not a meaningful activity for the purpose of this research. There are several researchers attempting to offer a definition of what could be the construct of consumer satisfaction and they also distinguish different characteristics, from "attitude-like post

consumption evaluative judgment" where "satisfaction is not an emotion itself, but has been suggested to be the evaluation of an emotion" (Hunt 1977), to a "continuum evaluative process" (Oliver, 1989; Westbrook and Oliver 1991). There's also a Differential Emotions Scale (Izard 1977) that contains 10 subscales representing the intensity with which subjects experience the 10 fundamental emotions of Izard's Theory. Researchers also distinguish between the influence of emotions and evaluations on satisfaction (Cohen and Areni, 1991). Some try to distinguish between the individual level of satisfaction and the market level satisfaction (Johnson, Anderson and Fornell, 1995). Others look for satisfaction as an individual transaction-specific measure or evaluation of a particular product or service experience (Cronin and Taylor 1992). There's even an apparent disagreement as "to whether perceived service quality is an antecedent to transaction-specific satisfaction (Parasuraman, Zeithaml, and Berry 1988) or transaction –specific satisfaction is an antecedent to perceived service quality (Bitner 1990; Bolton and Drew, 1991)" as cited by Johnson, Anderson and Fornell (1995). In the same article (Johnson, Anderson and Fornell 1995) the authors present a different approach to the customer satisfaction definition. They argue that "satisfaction is an abstract construct that describes customers total consumption experience with a product or service… (because) directly affects customer loyalty and subsequent profitability, it serves as a common denominator for describing differences across firms and industries". There is also an excellent early "Critical Review of Consumer Satisfaction" by Youjae Yi (1990) that presents the Consumer Satisfaction construct from different perspectives: definitions, measurements, antecedents, determinants and consequences.

For simplification reasons, we will consider a definition of satisfaction based on Westbrook's (1987) idea of satisfaction as the result of two possible effect states after a specific transaction based on positive or negative effects (emotions). Moreover, we are considering the One Factor Theory "postulating that satisfaction and dissatisfaction are opposites on a single, bipolar continuum", Yi (1990).

3.7 Expectation-Disconfirmation Paradigm

The outcome of a product or service interaction-evaluation process gives us the same level of ambiguity and abstraction as the satisfaction construct. There have been some attempts to understand consumer satisfaction consequences. Again, one of the most complete compilations is the one made by Youjae Yi (1990) “Critical Review of Consumer Satisfaction”.

In this work, the author presents some key variables and definitions to understand Consumer Satisfaction. The Expectation-Disconfirmation Paradigm is a modification of the Adaptation-Level Theory (Helson 1964). This paradigm is used in several research papers (Oliver, 1977, 1980, 1981, 1989), and tells us that we need to recognize that the outcome of Consumer Satisfaction could be summarized in three forms: Positive disconfirmation (performance exceeds expectations), confirmation (performance equals expectations), and negative disconfirmation (performance is below expectations). It is important to also recognize the proposed deficiency of this paradigm by La tour and Peat (1979): they argued that the Expectation-Disconfirmation Paradigm did not consider the consumer past experiences and other consumer experiences as sources of expectations in consumer’s minds.

Some authors proposed a modification of the Comparison Level Theory (Thibaut and Kelley, 1959), considering basically three factors: (1) Consumer’s prior experiences with similar products, (2) situational product expectations and (3) the experience of other consumers who serve as referent persons. For the purpose of this research, we are going to work on the basis of consumer’s ability to form expectations and perceptions no matter what sources are involved in their evaluations.

Disconfirmation is the disparity between expectations and performance. There are two types of disconfirmation: objective disconfirmation (real product/service performance) and subjective disconfirmation (consumer’s perceived performance). Again, for the purpose of this research, it is important to consider only the idea that a discrepancy may

exist between expectations and perceptions met, and that as a result of this evaluation process an emotion could emerge in every consumer's mind. That emotion influences a consumers' decision to stay with product/service or step aside from it. For further clarification of the expectation-consumer satisfaction sequence see Yi (1990), Figure 2 p. 81.

4. Conceptual Model and Formal Hypotheses

4.1 Conceptual Model

After reviewing several different theories and literature related to Self Service Technology Adoption and considering the Service Quality Theory, the Theory of Reasoned Action and the Technology Acceptance Model as a basis for this investigation, a conceptual model came up. First of all, taking the customer assessment of Service Quality, we can argue that there might be different variables (Dimensions) influencing expectations (or attitudes) and this attitudes will have moderating effects on behavioral intentions which may in turn have an influence on actual behavior and Perceived Service Quality. Subsequently - and including the first two tested variables in the model, Usefulness and Ease of use (Davis 1986) -, we are hypothesizing about the rest of the external variables and their relationships. We assume that even when Davis (1986) stated that all other variables would affect usefulness and ease of use, there might be some other factors equally influencing the attitude towards behavior. We should say at this time that there could be some similarity between some of our proposed variables (efficiency and convenience) and the first two. They may even be the same. In addition, we are considering the Expectation-Disconfirmation Paradigm as an outcome of actual behavior (perceived service quality). As a result, our suggested first model will be:

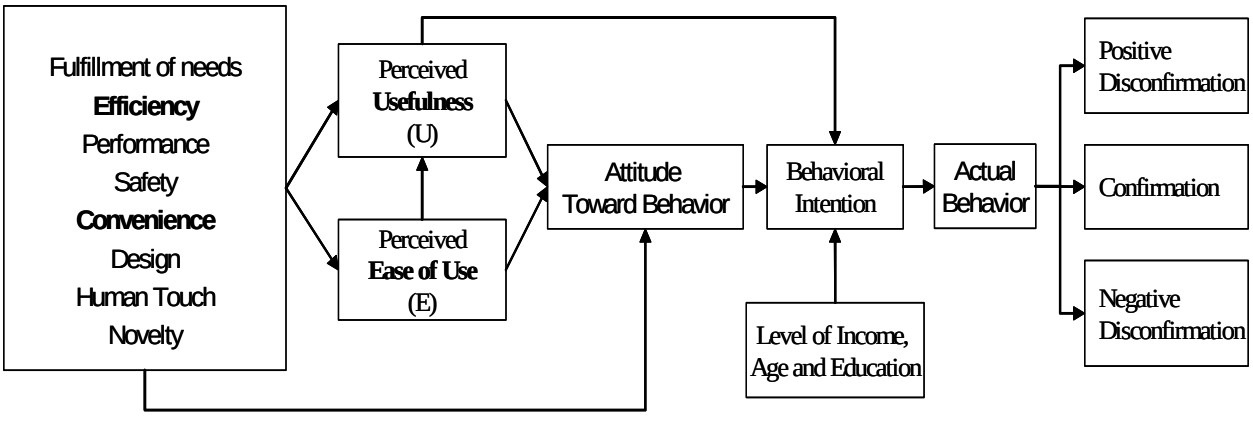


Fig. 7 Initial Conceptual Model

4.2 Operational Definitions and Formal Hypotheses

To understand the "relationship between the different factors influencing satisfaction" (Meuter et al 2000) or attitude towards the "interaction with a self service technology" (Dabholkar and Bagozzi 2002), we read different articles and books and found similarities that helped us to build a general summary from which this research can advance. After this first step, we then generated the following service dimensions to be tested.

Fulfillment of needs

Self Service Technologies can facilitate the fulfillment of needs or desires, and technology can lead to the development or awareness of needs or desires previously unrealized. Technology lets you achieve personal objectives and solve emerging problems linked to interaction with self service technologies. As new technology "enters a consumers life, it can displace knowledge used to solve current problems, raise awareness of needs that the technology can address but that were not previously noticed, and require adaptations that are irksome" (Mick and Fournier, 1998).

Fulfillment of needs has three possible interpretations:

1. It can solve basic needs, which means that if a user perceives that a Self Service Technology helps to appropriately cover a basic need that user might be more interested to use that service.
2. In the same way, it could solve intensified needs (when external environmental factors add a sense of urgency aroused from basic needs) which means a positive direct relationship with Intentions to use Technology.
3. Finally, Self Service Technologies could create needs (awareness of new ones). The connotation here is that when a consumer feel a sense of "need

to use" a new Technology, the probability that he/she will use that Technology increases

Here's where the first hypotheses appear:

H1:The more positive the consumer's beliefs about how a self service encounter has fulfilled his/her needs, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Efficiency

From a consumers' perspective, efficiency means that technology could help reach the goals he/she sets with less effort. Self Service Technologies can facilitate or reduce the time and effort spent in certain activities, but technology can also lead to more effort or time in performing certain activities. Self Service Technologies can make you more efficient in your occupations, giving you alternatives to handle your time better. In addition, you can be confident that the output of your interaction with technology will be what you wanted and what you expected. Here, it is important to consider the apparently strong relationship with the Perceived Ease of Use construct proposed by Davis (1986)

H2: The more positive the consumer's beliefs about efficiency of a self service technology encounter, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Performance

A positive perception about the performance of Self Service Technologies means that the outcome of interacting with it is reliable and accurate. Satisfaction results from "the mere fascination with the capabilities of various SSTs and a sense of

¡Wow it really works! "(Meuter et al, 2000). If the technology does not work as intended, the consumer may face a disillusion. Consequently, in order to generate a good and positive perception of an automated service, technologies must complete the task for which they have been created. In other words, they should do their job as intended, work continuously in an appropriate manner, and generate a reliable outcome.

H3: The more positive the consumer's beliefs about the performance of a self service technology encounter, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Safety

In many cases, Self Service Technologies are not so secure or safe to work with. It is common to find people who make comments about bad experiences and risks they faced using credit cards or paying trough the Internet. It is a sense of insecurity, discomfort and fragility: a lack of personal protection. A "distrust of technology and skepticism about its ability to work properly is defined as Insecurity", (Parasuraman 2000). Therefore, we need to understand that every time that a consumer faces a possible interaction with a Self Service Technology, he must feel secure about it, he must perceive an atmosphere of protection against third parties (or technology itself), and he must recognize an environment of privacy where he's the only one involved in making a purchase (usage) decision.

H4: The more positive the consumer's beliefs about safety of a self service technology encounter, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Convenience

This construct deals with the general idea of "a positive view of technology and a belief that it offers people increased control, flexibility and efficiency in their lives" (Parasuraman 2000). Consumers may perceive some type of benefit if they use a Self Service Technology. The belief that SST's offers people variety, increased task control, accessibility, money savings, permanent availability, independence, place availability, diversity and time availability, would represent a general perception of convenience. It is important again to consider the similarity with the "Perceived Usefulness" proposed construct (Davis 1986).

H5: The more positive the consumer's beliefs about convenience of using a self service technology, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Design

Definition:

Although Design has a lot in common with expected Performance (they could be interrelated), the distinction is based on system features and how they perform trough each step of a single process, and how properly the expected outcome is achieved. Design is planning step by step the desired interaction with a customer, even at the required stage of post-purchase. It's about considering the different obstacles they may face, and the different options they want to find through the complete process. Design also means technical adaptation to consumer's capabilities. It means:

- planned compensation when technology fails,
- an adequate and logical (from consumer's perspective) progression of tasks with unnecessary repetitions,
- simplified operations,

- task clarity and adaptability to consumers needs,
- including enough and clear information to proceed trough the complete process,
- service assistance at any time in case of failure, and finally,
- it means giving customers a tangible evidence of company's achievements to handle complaints.

H6: The more positive the consumer's beliefs about design of a self service technology, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Human touch

Use of Self Service Technologies can lead to human isolation. To avoid this, there may be a need for emphasis on human interaction as part of a social and psychological required behavior. There are many cases when people tend to go to an establishment or go shopping just as a social experience, looking for social interaction. In these situations, technology cannot do anything for the customer (unless it offers a virtual interaction).

There are some other cases when SST's are not the best option for the customer. In these cases, the customer needs to interact with someone who can find a solution. At this point we should have in mind that use of Self Service Technologies will depend on the life cycle of the Technology and especially on the degree of task specialization. In other words, if a service is highly repetitive and consumers already know how to use it, they will not require personal assistance to get what they want (unless technology fails). If a service is highly specialized, consumers will look for trained personnel they can trust.

On the other hand, personal services sometimes get devaluated and people don't want to deal with them any more. After having a stressful experience with a

service employee, the last thing a consumer wants to do is face the arrogance of another employee.

H7: The more positive the consumer's beliefs about using a self service technology instead of human interaction, the more positive his/her intention to use that service will be.

Novelty

There are many definitions and constructs related with Novelty. Technology innovativeness (Parasuraman, 2000) or inherent novelty seeking (Dabholkar and Bagozzi, 2002) are two of them. For the purposes of this research, we need to address a single general definition for the Novelty construct. Novelty can be stated as the level of desire to seek out new and challenging stimuli prior to other members in a society.

There are two known groups of consumers (innovators and early adopters) (Rogers 1983) willing to test and try new products or services prior to anyone else. They are pioneers enthusiastic enough to venture into new journeys. These kinds of customers look for unique products or services, trying to discover what the products can offer them. They are just curious. These customers will try to do things first in almost any occasion. For them, it is a challenge to demonstrate that they can deal with new tasks.

These customers seek complete access to products and to have an information control advantage. They want to know before anybody else how a product works so they can pass on the knowledge.

H8: The more positive the consumer's beliefs about novelty of a self service technology, the more positive his/her intention to use that service and the higher the level of satisfaction will be.

Individual Differences

Although it is extremely difficult to isolate personal differences affecting self service technologies, we need to try a first approach. Indeed, there are some papers that suggested the idea of personal differences influencing the acceptance of technology. A "set of constructs not specifically included in TAM are variables related to individual differences....individual differences refer to user factors that include traits such as personality and demographic variables" (Agarwal and Prasad 1999).

The purpose of this research is to clarify the personal factors that have a major impact in consumer satisfaction when using SST's. However we also need to address the fact that there could be a group of personal characteristics and situational factors that could influence attitude towards using technology and the level of satisfaction in different stages of a self service interaction process.

Some studies present demographic characteristics as determinants of consumer satisfaction. Consumer satisfaction increase with age (Pickle and Bruce, 1972) and level of income (Mason and Himes, 1973) and decrease with education (Pickle and Bruce, 1972).

To narrow research, this project focuses on three demographic moderators, Age, Level of Income and Education. We hypothesize that age might be a significant variable affecting consumers intentions to use Self Service Technologies. Younger people are more familiar with the use of technology – they've grown up with it. Older people don't want to move from what they already know, they are more conservative.

H9: The older the consumer, the weaker his/her intention to use self service technologies will be.

In the same way, we have Level of Income and Education. People who have a higher level of income (especially in México, where this study was made) have more access to automated services and technology. Consequently, this will give them the opportunity to have much more interaction and experience, and affect the adoption process. On the other hand, the higher the Education Level, the higher the experience, knowledge and acceptability of automated systems. This would mean that there may be young adults in high school with high appreciation for technology, and also older adults we higher education who show acceptance, knowledge and need for automated services.

H10: The higher the expressed level of income of the consumer, the stronger his/her intention to use self service technologies will be.

H11: The higher the level of education of he consumer, the stronger his/her intention to use self service technologies will be.

5. Methodology

5.1 Developing Better Measures

The article “A Paradigm for Developing Better Measures of Marketing Constructs” (Churchill 1979) is one of the most recognized articles dealing with scale development. In this article, the author suggested a specific procedure to build better measurement instruments. The problem with scale development is that we need to appeal to people’s perceptions and thoughts and assign numbers to their attitudes towards the constructs we are trying to measure. They usually offer only partial answers to what we are trying to measure. Churchill proposed a step by step methodology to assess reliability and validity. For the purpose of this research, we consider this methodology as the most appropriate to follow.

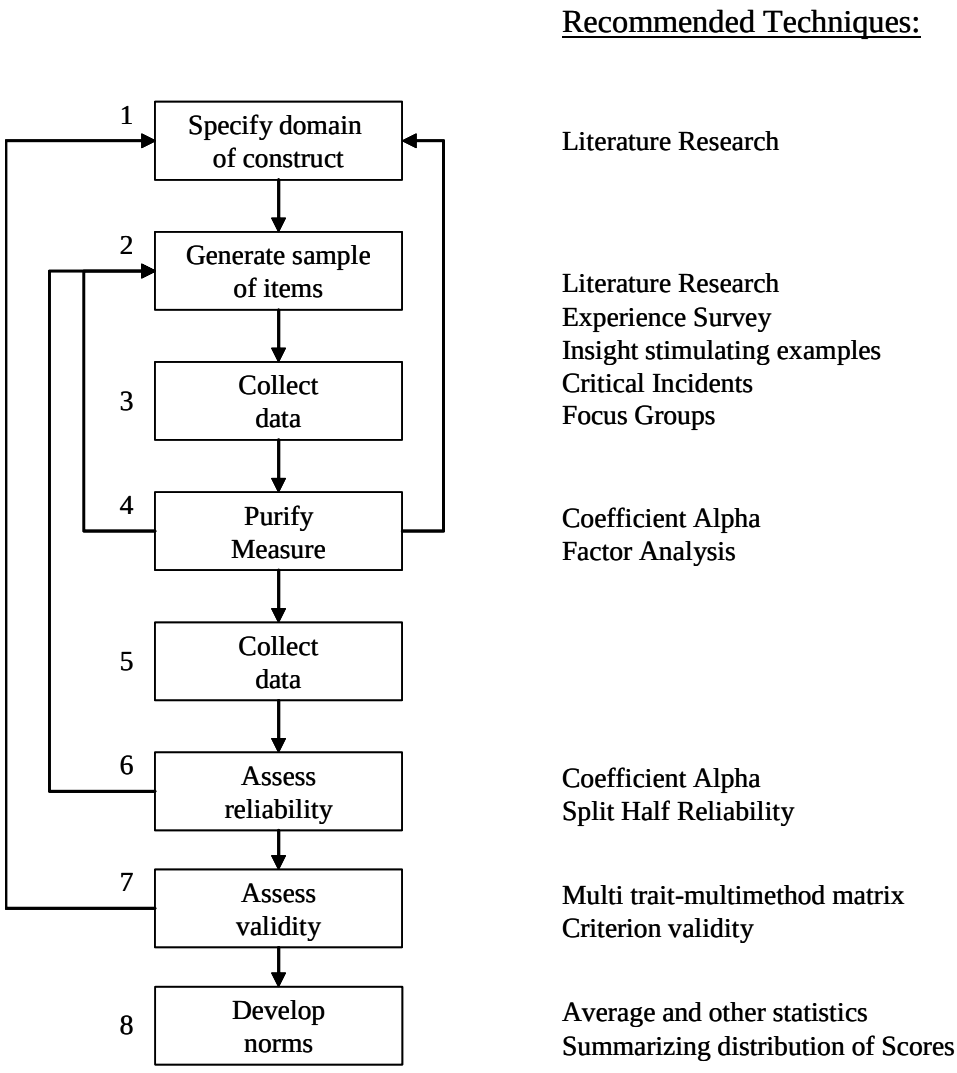


Fig. 8 A paradigm for developing better measures of marketing constructs

First of all, we conducted the recommended literature research process to understand the basis and contextualization of Self Service Technology Dimensions. We obtained several variables and concepts from literature. In the first three sections of this Doctoral Thesis we tried to delineate what we thought were the constructs for Self Service Dimensions. Nevertheless, as important as it is to address a central idea, we must remember that in a field were not so much has been done, definitions are just means, rather than ends by themselves.

Therefore, after this first definition of constructs (Specify Domain) as instructed by Churchill, we need to generate an initial sample of items to test.

5.2 Qualitative Research

5.2.1 Depth Interviews

A very important first step after reviewing a great amount of bibliography related to Self Service Technologies construct was Depth Interviews -or experience surveys. A “Depth Interview” is an “unstructured, direct, personal Interview in which a single respondent is probed by a highly skilled interviewer to uncover underlying motivations, beliefs, attitudes, and feelings on a topic” (Harris 1996). There are technology leaders that may have a better understanding of this phenomenon. Some of them indeed were working in this area when the interview was conducted. It was important to consider their opinions and thoughts about their own experiences regarding service technologies dimensions. What they know about this topic is important from a Self Service production and operation perspective. They are the ones in charge of designing and operating automated services - they have the experience about what works and what doesn’t work in this area.

In this initial stage it was necessary to conduct a small number of interviews to find an initial set of variables to analyze and subsequently compare them against the variables found in the literature. There were 5 (out of 6) interviews generated, 3 of them were conducted in Chihuahua City and two in Mexico City. One interview in Mexico City was cancelled. The interviewees were:

- a Telecommunications leader
- a Financial leader (bank)
- a Computer Systems specialist (PhD.)
- a Higher Education leader (university); and
- an Information Technology leader

We used the Laddering Technique, where a line of questioning proceeds from product characteristics to user characteristics (Malhotra 1996). To conduct the interviews, we elaborated first a general format to apply on each single meeting. The following is the applied general format:

Depth Interview

Introduction:

Hello! My name is: _____, and I will be in charge of this meeting. I appreciate your time and the opportunity to talk to you about this research we are conducting.

Purpose:

The purpose of this research is to find the forces or factors that have a major impact on consumers' satisfaction when interacting with self service technologies.

In order to complete our task properly, we are going to describe the meaning of Self Service Technologies, Interpersonal Services, and Technology Systems. We are going to give you some examples of Self Service Technologies and Technology Systems and then we are going to ask for your personal opinion (positive or negative) about the present and future of this kind of technologies.

Preliminary questions:

1. How do you define Consumer Satisfaction?
2. How do you define Technology Systems?
3. How do you define Service?
4. What do you understand by Interpersonal Service?
5. What do you understand by Self Service Technologies?

Basic questions:

Let's consider a Self Service Technology experience, the one you have when using any of the following automated services: Telephone/interactive voice response, Online/Internet and Interactive Kiosks.

6. What are the strengths of Self Service Technologies?
7. What are the weaknesses?
8. What are the opportunities?
9. What are the threats?
10. What specific factors would people avoid from Self Service Technology interactions?
11. What specific factors would people search from Self Service Technology interactions?
12. What factors do you think that an ideal Self Service Technology must have?
13. What is the difference between interpersonal services and Self Service Technologies? What are the differential factors?
14. What are the advantages and disadvantages between the two options? Which one would people prefer?
15. How did you perceived the future of this type of services?

5.2.2 Focus Groups

Similar to Depth interviews, Focus Groups are qualitative techniques “conducted in an unstructured and natural manner by a trained moderator among a small group of respondents”. (Malhotra 1996)

The purpose of using this research technique was to understand the other side of the story. Focus groups were difficult to perform when the target is a group of specialists, given that it is very hard to make them coincide in time and place. To gain specialist opinions, we used individual Depth interviews. But in the case of customers’ beliefs, it was better to conduct Focus Group sessions to gain their opinions about automated services through a free-flowing discussion.

We separated the Focus Groups considering two variables: age and type of Self Service Technology Interaction.

We assumed that age may possibly be a significant influencing variable. To keep some homogeneity in the group, we decided to separate young adults (YA) 18 to 27 years old, and mature adults (MA) 28 to 63 years old. Young adults are students or recent college graduates. In the majority of cases – in Mexico - people in this age group are still living with their parents. In the other case, people between the ages of 28 to 63 have already started their own families and show more professional maturity. Normally, above age 63 we find retired people, with very different needs.

We considered the possible influence of confusion or error while trying to evaluate three different kinds of services at the same time (Internet, IVR’s and Kiosk’s), so we decided to separate again each automated alternative. As a result, the outline for conducting each single session (6 sessions total, YA-Internet, YA-IVR’s, YA-Kiosks, MA-Internet, MA-IVR’s, and MA-Kiosks) was:

Focus Group Sessions

Introduction and warm up:

Hello! My name is Enrique Portillo and I will be in charge of this meeting. We appreciate your assistance in this focus group session.

As part of my Doctoral thesis in Marketing, I'm doing an exploratory research to find the leading forces that drive consumers when interacting with self service technologies. It is extremely important for the study to observe some rules during this session.

1. Feel free to contribute with any observation or comment whenever you want to. To maintain order during the session it is necessary to rise your hand and wait until the moderator gives you the right to speak.
2. Please respect other people's comments by letting them finish and avoiding any kind of disrespectful gestures or comments. This does not mean that you have to keep silent or cannot express your thoughts.
3. Please turn off your cell phones.
4. Feel free to stand up whenever you need to, but please return to your seat as soon as you can, in order to keep a record of your comments during the session.
5. As you may have noticed, we have some cameras installed to keep a record of all verbal and all non-verbal messages that you may express; it is important for us to keep your comments for future analysis. The cameras will give us the chance to concentrate on the exchange of ideas more deeply. If any of you feel uncomfortable with the video-recording of the session, please express your feelings and we will edit your comments form the tape before we have the final version of the session.

Purpose and definitions:

The purpose of this research is to find the forces, characteristics or factors that have a major impact on consumers' satisfaction when interacting with self service technologies.

In order to complete our task properly, we need to understand the definition of a self service technology: "SST's are technological interfaces that enable customers to produce a service independent of direct service employee involvement" (Meuter et. all).

There are three known technologies to date: IVR's, IK's and Internet. In this case we are going to discuss about: _____ experiences.

To do this appropriately we are going to introduce some questions to the group, and we are expecting you to debate and discuss them. We are trying to take advantage from group interaction.

Preliminary questions:

I will start by asking each of your names.

16. Let's consider a Self Service Technology experience, the one you have when using _____. Have you been involved with any kind of transaction with self service technologies in last 3 months?
17. How frequently did you have this kind of interactions?
18. What did you like about these interactions?
19. Was there anything that went wrong?
20. How much satisfaction did you get from that experiences?
21. What specific factors did you consider to categorize this as a satisfying/dissatisfying experience?

General questions:

22. What are the major reasons why you think people prefer this kind of services rather than going to an office or a retail store and let someone work for them? (list on board)
23. Can we try to rank these?
24. What are the major reasons why you think people resist using this kind of services? (list on board)
25. Can we try to rank these?
26. Did you feel at any moment the need to switch from self service technologies to interpersonal service or to get help from service personnel? What were the reasons?
27. Compared to interpersonal services, what are the advantages and disadvantages between the two options? Which one did you prefer?
28. How would you describe a high-quality SST's interaction?

5.2.3 Word Association Technique

As an important and helpful tool in this stage of research, we considered applying jointly an association technique (prior to the Focus Group discussion to avoid any kind of influence on participant's opinions); to understand what's on consumers minds when thinking on automated services.

An Association Technique is “a type of projective technique in which the respondent is presented with stimulus and asked to respond with the first thing that comes to mind” (Malhotra 1996).

The words and format used here were:

Word Association:

Now, we are going to work on a psychological technique. I need you to respond in the paper that we are giving you, and answer each word or phrase we’re going to tell you with the first thought or association that came into your mind related with SST’s. An example would be: Service representative.

And the answer may be: do not care

Are you ready? … Let’s start then

1. Fulfillment of needs
2. Efficiency
3. Performance
4. Safety
5. Convenience
6. Design
7. Human service
8. Failure responsibility
9. Automated service
10. Availability
11. Novelty
12. Waiting Time
13. Social Pressure
14. SSTs Satisfaction

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

5.3 Qualitative Research Outcomes

After completing step 2 (qualitative research), the next step was to conduct an empirical scale development, considered a central element for this research. Since there are some variables that weren't reported previously in literature, one of the first steps were to create a multi-item scale that might help while trying to understand the different constructs hypothesized here. In order to do this, first we try to build general constructs from Word Association Techniques, Depth Interviews and Focus Groups. Then, we compared the outputs and tried to generate one single questionnaire.

5.3.1 Depth Interviews Outcomes:

We tried to build a general idea from the meetings we have with the different interviewed leaders. After the analysis of each single idea, we arrive to the following factors (the complete categorizations are illustrated in **Appendix 12**):

Personal Interaction	**Accessibility**
Process Design	**Needs Satisfaction**
Costs	**Comfort**
Failure Response	**Independence**
Change Resistance	**Efficiency**
Speed /Time	**Tangibility**
Security	**Immediate possession**
Knowledge	

5.3.2 Focus Groups Outcomes:

The analysis of group sessions was a very complex process. It took several days to find similarities between each session's comments. It was also very difficult to find related ideas to propose possible constructs. The Focus Groups final categories were:

Human Touch
Rationalization
Change Resistance
Speed/Time
Comfort
Technology dependence
Economy (cost)
Availability
Operational Infrastructure, Physical Environment
Safety
Ignorance:
Design
Independence
Tangibility and immediate possession
Trustworthiness
Efficiency
Failure response

Looking for similarities in both techniques (Focus Groups and Depth Interviews) and trying to reduce the Self Service Technologies dimensions as much as possible, we developed a single table with a general a priori operationalization.

1. Human Interaction	The degree to which and reasons why an individual needs to interact with another individual instead of with an automated service.
2. Design	Planning and controlling functionality of Self Service Technologies infrastructures and operations
3. Economy (cost)	Resource benefits generated trough the use of automated services
4. Failure Response	The assertive response of companies when SST's fail
5. Change Resistance	An attitude towards using a new alternative
6. Time Saving	An advantage offered by SST's
7. Safety	When technology offers secure, private and risk free operations
8. Knowledge	People need to understand how to handle SST's to support their use
9. Availability	SST's offer accessibility of a huge variety of products, at any time from any place
10. Comfort	A sense of relaxation generated by an effective and convenient automated operation
11. Technological	The degree of independence offered by a SST

dependency	
12. Efficiency	Quick, reliable and guaranteed operations
13. Tangibility and immediate possession	The opportunity to feel, taste or touch the products wanted, and the chance to possess them immediately
14. Rationalization	The advantage of SST's is that they let you think and plan what you want to do
15. Needs Satisfaction	SST's must solve each and every person needs to retain users

5.3.3 Word association outcomes:

Even when there are a lot of possible answers for each word or phrase included in this technique, we try to summarize the most repeated words for each variable and the number of repetitions, see **Appendix 12** for details.

After the categorization of ideas, we obtained a general summary for this technique:

1. Fulfillment of needs	Quick, efficient, and comfortable interactions through automated services
2. Efficiency	Quick, well designed and secure automated services, in good condition and always working
3. Performance	Fast and efficient automated services
4. Safety	Confident, private, secure and reliable automated services
5. Convenience	Comfortable and high speed automated services
6. Design	Easy to handle and well presented facilities
7. Human service	Pleasant treatment
8. Failure responsibility	Fast and efficient solutions from the company
9. Automated service	Quick and comfortable services
10. Availability	Convenient and immediate access from any place
11. Novelty	Interesting modernity
12. Waiting Time	Uncomfortable, costly and frustrating loss of time
13. Social Pressure	Stressful social trends
14. SSTs Satisfaction	Agreement with excellent options

5.4 General categorization of components after qualitative research

Accordingly, and after trying to find similarities and a single general taxonomy based in all three qualitative techniques, we decided to stay with the following dimensions:

1. Human interaction	The degree and reasons in which an individual needs to interact with another individual instead of an automated service
2. Rationality	Have time to perform an operation in a rational and planned way
3. Change resistance	The attitude and reasons towards using a SST
4. Comfort	A sense of relaxation generated by a perceived advantage of SST's
5. Time saving	A general perception of profitability while preserving time
6. Ubiquity	The benefit of using any kind of device to solve your wants at the moment you need from the place you are
7. Technological dependency	The degree of independence offered by a SST
8. Tangibility and immediate possession	The opportunity to feel, taste or touch the products wanted, and the chance to possess them immediately
9. Convenience	A perceived profit trough value added and money saving
10. Efficiency	Quick, reliable and guaranteed operations
11. Failure response	Fast and assertive company solutions when technology fails
12. Safety	Confident, private, secure and risk free operations
13. Design	Easy to handle and well presented SST facilities and operations
14. Personal motivations	Personal Characteristics and motivations like novelty or age.

Table 3 General Categorization of components after qualitative research

5.5 Initial Pool of items

From all the different kind of answers and comments formulated on each technique, we obtained an initial sample of 164 items to test and measure. The purpose was to generate all kind of ideas to cover each and every dimension and then build, edit and refine the general scale (and subscales for each dimension). **Appendix 1**, presents the general format for each individual idea to be tested.

After finishing the categorization of ideas and the construction of a general scale, the following step was to purify the measure. To do so, we followed two procedures. First, we asked a group of 10 research and academic leaders their opinions about each and every single generated item. “If the sample is appropriate and the items ‘look right’, the measure is said to have face or content validity” (Churchill 1979). This instrument is also presented in **Appendix 1.**

But given the known ambiguity of face validity, a pretest of these initial items was simultaneously conducted with a specific number of selected individuals (n=50). We employed a convenience sample of High School Students, High School Parents, Undergraduate Students, Undergraduate Parents and Graduate Students (MBA’s). The purpose of these written surveys was to reduce the number of items to a more appropriate one, based on statistical tests and reliability coefficients. **Appendix 2** presents the instrument composition.

At this time, it is important to bring in two important concepts associated with quality research: validity and reliability.

As we understand, there are different kinds of validity, face validity (some, as Churchill said it is similar to content validity), construct validity, convergent validity and discriminant validity, internal and external validity. These concepts can lead to confusion sometimes, to clarify our procedure and accomplish the validity concepts, we need to understand that a measure is valid when the differences in the observed scores and the

actual or “true” scores are 0, this is $X_0 = X_t$; optimistically this is what every researcher wants to achieve, but realistically this is almost impossible.

Searching for Content validity, every researcher must be capable to clarify the complete picture of any given hypothesized idea through an appropriate and specific measurement instrument; but nothing more unrealistic than this, theoretical concepts in the social sciences are simply an approximation to peoples’ perceptions at a moment “t”. As a consequence, and given the nature of our research, we can not claim a strong accomplishment of content validity, but we do as much as we can about this concern.

In the other hand, as Churchill (1979) stated “A measure is reliable to the extent that independent but comparable measures of the same trait or construct of a given object agree. Reliability depends on how much of the variation in scores is attributable to random or chance errors”. Therefore, regarding the reliability concept for this research, and knowing the acceptance and generalization of Cronbach’s coefficient alpha (α), we were trying to address internal consistency by asking different related questions on the subject of each single dimension. All of this, under the assumption that “all items, if they belong to the domain of the concept, have an equal amount of common core” Churchill (1979); which means that if we are looking for internal consistency we need to have items with high correlations between the items belonging to one dimension; the higher the alpha score, the higher the relationship between items and the higher the possibility to fit in a common factor.

5.6 Scale Development

Prior to the generation of the final scale, we measured the convenience, wording, appropriateness and fit of each generated item. In general, each selected item for the final scale must be suggested by experts’ opinion and according to the correlations reflected by α scores in each subscale, in all cases the items pass both procedures. So, we collected data and obtained the final scale presented below. Results of experts’

interviews and pretest are shown in the following section (Analysis and Study Results) to validate the instrument.

As we can see in final scale (questionnaire) **Appendix** 2, there are four basic sections, (1) the introductory questions, to guarantee peoples knowledge and experience about SST's topic; (2) basic questions, where the proposed items took place; (3) the attitude and satisfaction questions, to complement and allow regression analysis; and (4) the demographical questions, to test for any kind of moderating effects.

5.7 Data collection

The fifth step after developing the scale was to collect data with a higher and more reliable sample size (n=511); this process was made again in a convenience sample of High School Students, High School Parents, Undergraduate Students, Undergraduate Parents and Graduate Students (MBA's), from a middle-high (and above) socioeconomic classes (based in the idea that these segments have more contact with each of the proposed SST's alternatives, compared to lower level classes), and also attempting population consistency with previous qualitative techniques. Again, analysis and results are presented in the following section.

6. Analysis and Study Results

6.1 Step 1: Scale Development

As discussed in chapter 5, the first step to develop a better measurement instrument was face validity. **Appendix 3** presents an initial approach to remove all unnecessary items. As we can se, all items that did not have at least 50% of experts' votes were separated for further analysis. Additionally, **Appendix 4** presents the summary for reliability analysis and factor analysis for the included items; in addition **Appendix 4** presents the summarized table of included/excluded variables considering both techniques.

The following table presents an abstract of the included items after face validity, statistical and Factor analysis presented in both appendixes. We also mention the assigned position in the final questionnaire.

Face Validity, Statistical analysis, Cronbach Alpha and Factor Analysis results.

Initial Items	Face validity	Alpha and Factor Analysis
Human Interaction 2	Included	Included
Human Interaction 4	Included	Included
Human Interaction 6	Included	Included
Rationality 2	Included	Included
Rationality 3	Included	Included
Change Resistance 2	Included	Included
Change Resistance 12	Included	Included
Change Resistance 14	Included	Included
Comfort 2	Included	Included
Comfort 3	Included	Included
Time Saving 2	Included	Included
Time Saving 4	Included	Included
Time Saving 6	Included	Included
Ubiquity 5	Included	Included
Dependence/independence 9	Included	Included
Dependence/independence 11	Included	Included
Dependence/independence 13	Included	Included

Convenience 7	Included	Included
Convenience 8	Included	Included
Efficiency 5	Included	Included
Efficiency 11	Included	Included
Failure Response 1	Included	Included
Failure Response 2	Included	Included
Failure Response 6	Included	Included
Safety 16	Included	Included
Safety 17	Included	Included
Safety 18	Included	Included
Design 2	Included	Included
Design 14	Included	Included
Design 15	Included	Included
Personal Motivations 3	Included	Included
Personal Motivations 4	Included	Included
Personal Motivations 5	Included	Included

Table 4 Included Items after qualitative phase for the final scale

The criteria to incorporate a variable in the final questionnaire were: variables should be included in both applied techniques, so the variables in gray are the ones included in the final scale.

The next step was to test the reliability of the general scale, and especially the subscales. The Cronbach reliability analysis follows below.

R E L I A B I L I T Y A N A L Y S I S
S C A L E (C R O N B A C H A L P H A)

N of Items	Item Id	Item Name	N of item in final questionnaire
1.	Q12	Human interaction 2	3
2.	Q14	Human interaction 4	13
3.	Q16	Human interaction 6	14
4.	Q22	Rationality 2	6
5.	Q23	Rationality 3	22
6.	Q32	Change resistance 2	9
7.	Q312	Change resistance 12	32
8.	Q314	Change resistance 14	28
9.	Q42	Comfort 2	2
10.	Q43	Comfort 3	20
11.	Q52	Time saving 2	5
12.	Q54	Time saving 4	17
13.	Q56	Time saving 6	19
14.	Q65	Ubiquity 5	1
15.	Q79	Dependence/Independence 9	10
16.	Q711	Dependence/Independence 11	15
17.	Q713	Dependence/Independence 13	24
18.	Q97	Convenience 7	11
19.	Q98	Convenience 8	16
20.	Q1005	Efficiency 5	18
21.	Q1011	Efficiency 11	29
22.	Q1101	Failure response 1	30
23.	Q1102	Failure response 2	21
24.	Q1106	Failure response 6	7
25.	Q1216	Safety 16	25
26.	Q1217	Safety 17	31
27.	Q1218	Safety 18	26
28.	Q1302	Design 2	23
29.	Q1314	Design 14	27
30.	Q1315	Design 15	8
31.	Q1403	Personal motivations 3	12
32.	Q1404	Personal motivations 4	4
33.	Q1405	Personal motivations 5	33
Reliability Coefficient Alpha = .7144			N of Cases = 48.0

Table 5 Reliability Analysis for Complete Scale

6.2 Step 2: Data Analysis and Study Results

After concluding the first part of the study, it was necessary to conduct data analysis of 511 applied questionnaires. Following are the statistical results of this analysis.

6.2.1 General Frequencies and descriptive statistics

We need to start analyzing general frequencies to understand how each variable works at the individual level.

These are some of the most important findings related with it:

- The type of interaction (with a Self Service Technology) that people best remember is the Internet with 42% followed by 36% individuals remembering ATM's and telephone experiences with 14%. This might be explained by the fact that there are more young people interviewed than older people. And this might be also explained by the underdevelopment of automated telephone systems in México.

Check the type of interaction you have had that best remember.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	telephone	*71*	*13.9*	*13.9*	*13.9*
	atm	*187*	*36.6*	*36.6*	*50.5*
	internet	*217*	*42.5*	*42.5*	*93.0*
	all	*36*	*7.0*	*7.0*	*100.0*
	Total	*511*	*100.0*	*100.0*	

- What do people think about self service technologies? Basic Questions results (**part I** of questionnaire):

  - ✓ 48% prefer to avoid human interaction
  - ✓ The perception of rationality behind SST's is divided.
  - ✓ 61% declare some kind of interest to use them
  - ✓ 82% found them comfortable to use
  - ✓ 86% think SST's save them time
  - ✓ 63% think SST's give them independence
  - ✓ 80% found them convenient to use
  - ✓ 53% think there's no one to attend failures behind SST's
  - ✓ 47% think they are safer and give privacy
  - ✓ 66% think SST's have good design and are easy to use
  - ✓ 65% look for technological novelties.

- For attitude questions (**part II**) there seems to be normal standard deviations in most of the cases (there are 3 variables with std. dev. = .96, as we can see in the following tables) this means normal variations inside each subscale.

Descriptive

	Mean	Std.	N
Ubiquity	*3.09*	*1.24*	*508*
Comfort	*3.63*	*1.28*	*509*
Human Interaction	*2.67*	*1.25*	*511*
Personal motivations	*3.23*	*1.07*	*510*
Time saving	*3.57*	*1.12*	*510*
Rationality	*3.26*	*1.17*	*511*
Failure Response	*3.55*	*1.40*	*510*
Design 15	*3.18*	*1.25*	*510*
Change Resistance	*2.58*	*1.22*	*510*
Technology dependence	*3.63*	*1.09*	*511*
Convenience	*3.77*	*1.09*	*509*
Personal Motivations	*3.24*	*1.11*	*511*
Human Interaction	*3.43*	*1.20*	*510*
Human Interaction	*3.20*	*1.18*	*511*
Technologica Dependency	*3.84*	*1.00*	*511*
Convenience	*3.42*	*.96*	*511*
Time Saving	*3.67*	*1.04*	*508*
Efficiency	*3.22*	*1.21*	*510*
Time Saving	*3.95*	*.96*	*511*
Comfort	*3.58*	*1.01*	*511*
Failure Response	*4.03*	*1.05*	*510*
Rationality	*3.69*	*1.07*	*508*
Design 2	*3.53*	*1.18*	*511*
Technologica dependency	*4.15*	*.96*	*509*
Safety 16	*3.78*	*1.14*	*509*
Safety 18	*2.92*	*1.21*	*511*
Design 14	*3.09*	*1.13*	*510*
Change Resisance	*2.73*	*1.09*	*511*
Efficiency	*3.18*	*1.13*	*511*
Failure Response	*3.88*	*1.11*	*510*
Safety 17	*2.87*	*1.14*	*511*
Change Resistance	*2.98*	*1.06*	*510*
Personal Motivtions	*3.70*	*.96*	*509*

- On the other hand, it looks like there may possibly be problems with the Kolmogorov-Smirnov univariate test of normality. The Z values are higher than the normal 1.96 value (for 95%). Additionally, the significances are lower than the .05. See **Appendix 5** for normality tests

- Fortunately, as we can distinguish in **Appendix 6** there are significant bivariate correlations that illustrate an expected association between variables to run factor analysis.

- There are some other variables that didn't help to discriminate behaviors and tend to fit in just two scales and in many cases they also match with neutral response (which it's not helpful for the analysis).

Personal motivations 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*37*	*7.2*	*7.3*	*7.3*
	disagree	*78*	*15.3*	*15.3*	*22.5*
	Neutral	*182*	*35.6*	*35.7*	*58.2*
	agree	*156*	*30.5*	*30.6*	*88.8*
	strongly agree	*57*	*11.2*	*11.2*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		

Personal Motivations 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	38	7.4	7.4	7.4
	disagree	81	15.9	15.9	23.3
	Neutral	182	35.6	35.6	58.9
	agree	138	27.0	27.0	85.9
	strongly agree	72	14.1	14.1	100.0
	Total	511	100.0	100.0	

Technological Dependency 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	3.3	3.3	3.3
	disagree	38	7.4	7.4	10.8
	Neutral	87	17.0	17.0	27.8
	agree	237	46.4	46.4	74.2
	strongly agree	132	25.8	25.8	100.0
	Total	511	100.0	100.0	

Technological dependency 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	9	1.8	1.8	1.8
	disagree	28	5.5	5.5	7.3
	Neutral	61	11.9	12.0	19.3
	agree	189	37.0	37.1	56.4
	strongly agree	222	43.4	43.6	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		

Efficiency 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	32	6.3	6.3	6.3
	disagree	123	24.1	24.1	30.3
	Neutral	146	28.6	28.6	58.9
	agree	141	27.6	27.6	86.5
	strongly agree	69	13.5	13.5	100.0
	Total	511	100.0	100.0	

- In general, people think they are going to use in some time SST's; at least 58% are prepared to do so.

Overall, how favorable did you feel about using self service technologies instead of personal services?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Definitely not going to use them	8	1.6	1.6	1.6
	Maybe I'm Not going to use them	35	6.8	6.9	8.4
	Neutral	116	22.7	22.7	31.2
	Maybe I'm Going to use them	299	58.5	58.6	89.8
	Definitely going to use them	52	10.2	10.2	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		

For complete frequencies and normality tests please refer again to **Appendix 5.**

6.2.2 Factor Analysis and Regression model

6.2.2.1 Factor Analysis

After reviewing and testing all attitude variables (please refer to questionnaire part II), the next step in this automated services research was to conduct factor, ANOVA and regression analysis. For factor analysis we followed three different approaches to test all possibilities while eliminating the appropriate variables. The main uses of this technique are summarization and data reduction to understand complex structure interrelationships.

The first procedure eliminates all those variables that did no contribute (or with lower contributions) in the Cronbach Alpha Scale Reliability Analysis according to Churchill's (1979) article. So the steps included where:

1. Check KMO Sampling Adequacy Measure. In all steps, the measure was always appropriate for factor analysis.
2. Verify Bartlett's Test of Sphericity
3. Conduct Rotated Factor Analysis
4. Check for factor loadings
5. Perform the Scale Reliability Analysis
6. Eliminate those variables that didn't not help to increase reliability
7. Start all over again until there are no chances to increase reliability.

For the complete first procedure of factor analysis please refer to **Appendix 7.**

Another option to develop factor analysis was through the elimination of those variables with low factor loadings. So, for the purpose of this second approach, we started to eliminate those variables with factor loadings lower that .500, which indicates not appropriate or unclear loadings. The procedure here changed a little:

1. Check KMO Sampling Adequacy Measure. In all steps, the measure was always appropriate for factor analysis.
2. Verify Bartlett's Test of Sphericity
3. Conduct Rotated Factor Analysis
4. Check for vague variable factor loadings

5. Eliminate the variable with the most unclear loading
6. Start the process from step one until there where no more variables with imprecise factor loadings
7. Perform the Scale Reliability Analysis until there are no chances to increase reliability.

Please refer to **Appendix 8 (A)** for this complete procedure.

A third approach is based on the idea that there where two items that still perform low factor loadings Q15 and Q19 (these two items were low since the first factor analysis, prior to eliminate low factor loadings). If we eliminate those two items, the outcome is very similar (compared with first factor analysis approach), but with the difference of two deleted components and the regrouping of one variable (33) in a different component (regrouped in the same component than second factor analysis approach). For the complete procedure, please refer to **Appendix 8 (B).**

In conclusion, even when the first and third approaches meet a higher Total Explained Variance (60.876 and 59.742), **the second approach (57.915)** reveals a more consistent and clear factor structure. So, we finally have the following components with their respective grouping variables:

Component 1

1. While purchasing, the fundamental thing is product availability. The problem is that in stores, often times products are not available; whereas on the Internet there are so many companies offering the same product that somebody will have it for sure.
2. Purchasing through Self Service Technologies lets me avoid traffic, find a parking lot or wait in lines.
5. With automated services people are going to spend less time. They are faster than personally dealing with somebody.
6. Through Self Service Technologies like the Internet you can compare prices so you can adjust your budget.

Component 2

7. When technology fails it should be easy to interact personally with somebody in case of failures or doubts.
21. Automated services should offer alternatives when they fail.
30. We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.

Component 3

22. The advantage of using Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.
23. Automated services would be easier and simpler if they offered only basic and repetitive operations.
24. I like the idea of doing business via self service technologies because I'm not limited to regular business hours

Component 4

10. Use of automated systems provides a sensation of control and independence to me.
11. The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.
15. There is a great trend that forces you to move at the speed of technology, and people use that tool to make their life more comfortable.

Component 5

13. It's uncomfortable to talk with a machine, personal service is more agreeable.
14. It is very upsetting to be waiting a recording machine to attend me.

Component 6

16. With Self Service Technologies, users will save money through price competition.
17. Personal attention implies losing time while waiting in lines for somebody to understand to you, whereas in the Internet this doesn't happen.
19. One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.

Component 7

25. I worry that information I send over the internet will be seen by other people or institutions.
26. If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.
27. I don't like automated services because companies' don't care about the infrastructure behind them, for example, maintaining ATM's clean.

Component 8

4. Compared to others I am one of the first to understand self service technologies.
12. In general, I am among the first in my circle of friends to search for new technology when it appears.
33. I am always looking for the benefits that novelty in technology can give me.

With the following suggested categorization of components:

1. Ubiquity: You can be sure that you might buy your products whenever you need them, wherever you want them, and at the time and price you want.

2. Failure Response: An appropriate response (personal or mechanical) in case of technological failures.

3. Control: Provides users a sense of situational and operational control.

4. Technological dependence: It gives a sense of technological dependence/independence while using automated services.

5. Human Interaction: A person's need to be assisted by a human being when technology doesn't work. People may want to negotiate with people to find appropriate solutions; automated services are limited when it comes to finding appropriate answers

6. Convenience: A sense of technological profitability through time and money savings.

7. Safe Design: People's need to operate in a reliable and appropriate automated service.

8. Novelty: People's readiness to interact with technology.

6.2.2.2 The Regression Model

At this point, the following step was to run a regression analysis trying to find any influence between the extracted components and people's intention to use SST's.

The objective of multiple regression analysis is to examine the relationship between a single dependent variable and a set of independent variables. The main purpose on this research is to distinguish a clear and reliable relationship between both kinds of variables in case it exists. We need to understand if there is a multivariate effect of the extracted independent variables on the selected dependent variable, we need to know if any of the extracted independent variables affect intention to use automated services.

As we mentioned earlier, the initial conceptual model, suggested a possible influence of unknown factors on actual behavior. For the purpose of this research we focused only in intentions as an antecedent of actual behavior.

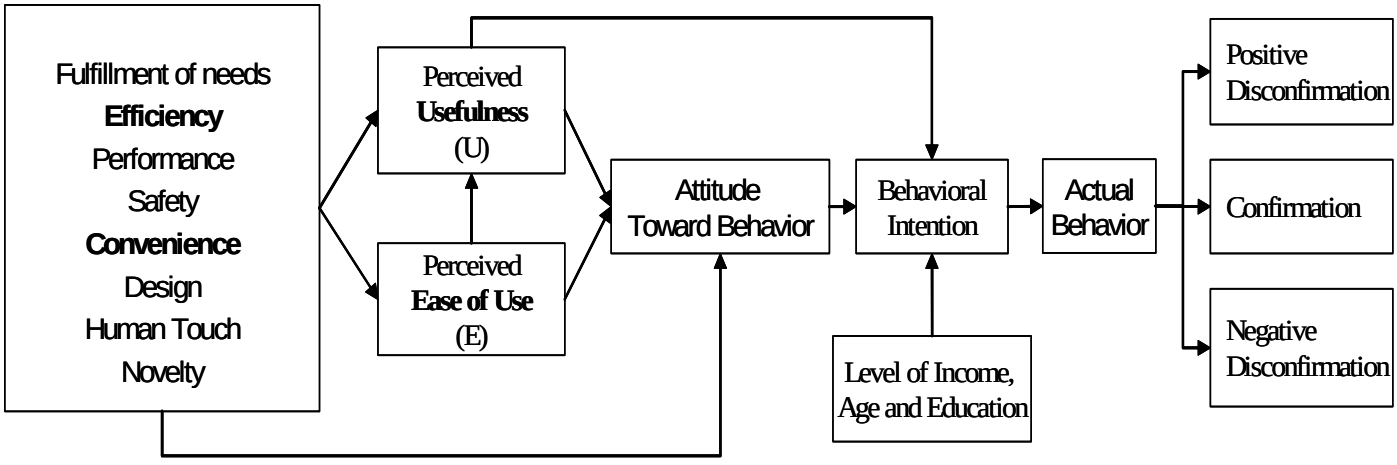


Fig. 9 Initial Conceptual Model

After factor analysis, we need to modify the initial model and consider the new extracted components to test any statistical relationship with consumer's intentions to use SST's:

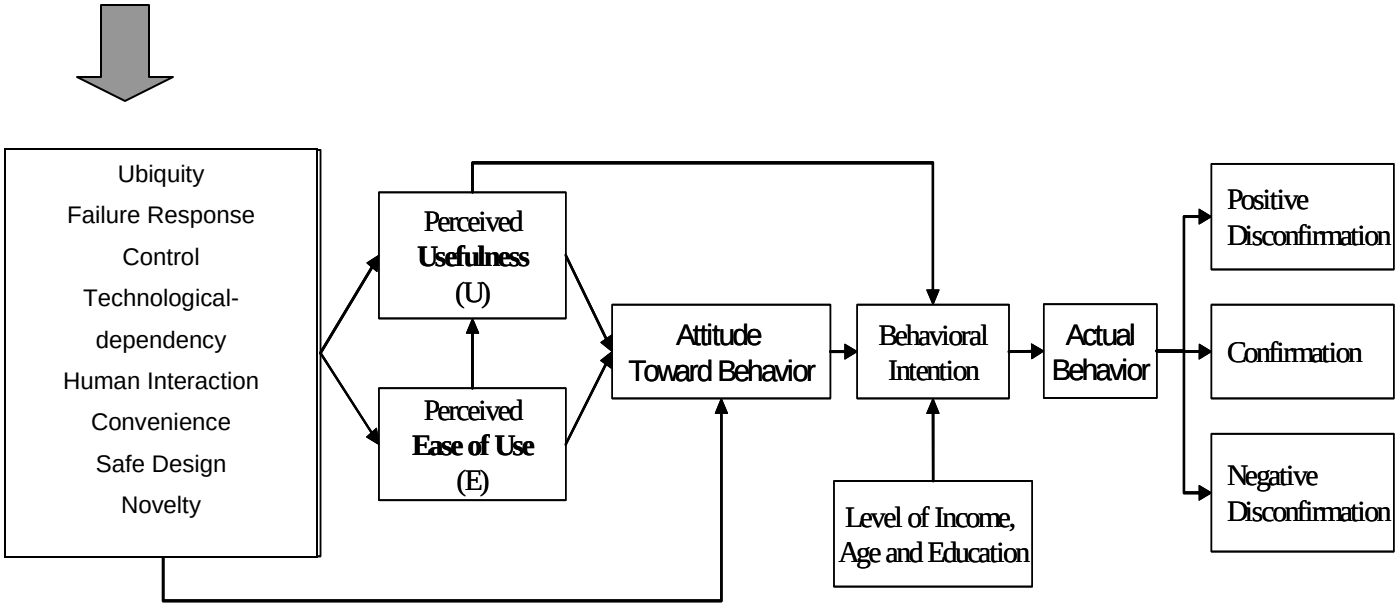


Fig. 10 Modified Conceptual Model

The first step to measure any possibility of a relationship is through the correlations matrix; if there seems to be no correlation between the included variables, the analysis may have no meaning

Correlations

		Ubiquity	Failure Response	Control	Technological Dependency	Human Interaction	Convenience	Safe Design	Novelty	Overall, how favorable did you feel about using self service technologies instead of personal services?
Ubiquity	**Pearson Correlation**	*1.000*	*.000*	*.292**	*-.258**	*-.054*	*.211**	*.000*	*.116**	*.130**
	Sig. (2-tailed)	*.*	*1.000*	*.000*	*.000*	*.235*	*.000*	*.999*	*.011*	*.004*
	N	*502*	*502*	*487*	*487*	*487*	*487*	*487*	*487*	*501*
Failure Response	**Pearson Correlation**	*.000*	*1.000*	*-.022*	*-.010*	*-.045*	*.859**	*.218**	*-.043*	*-.126**
	Sig. (2-tailed)	*1.000*	*.*	*.622*	*.828*	*.322*	*.000*	*.000*	*.342*	*.005*
	N	*502*	*502*	*487*	*487*	*487*	*487*	*487*	*487*	*501*
Control	**Pearson Correlation**	*.292**	*-.022*	*1.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.241**
	Sig. (2-tailed)	*.000*	*.622*	*.*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*.000*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Technological Dependency	**Pearson Correlation**	*-.258**	*-.010*	*.000*	*1.000*	*.000*	*.000*	*.000*	*.000*	*-.161**
	Sig. (2-tailed)	*.000*	*.828*	*1.000*	*.*	*1.000*	*1.000*	*1.000*	*1.000*	*.000*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Human Interaction	**Pearson Correlation**	*-.054*	*-.045*	*.000*	*.000*	*1.000*	*.000*	*.000*	*.000*	*.071*
	Sig. (2-tailed)	*.235*	*.322*	*1.000*	*1.000*	*.*	*1.000*	*1.000*	*1.000*	*.118*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Convenience	**Pearson Correlation**	*.211**	*.859**	*.000*	*.000*	*.000*	*1.000*	*.000*	*.000*	*-.006*
	Sig. (2-tailed)	*.000*	*.000*	*1.000*	*1.000*	*1.000*	*.*	*1.000*	*1.000*	*.898*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Safe Design	**Pearson Correlation**	*.000*	*.218**	*.000*	*.000*	*.000*	*.000*	*1.000*	*.000*	*-.169**
	Sig. (2-tailed)	*.999*	*.000*	*1.000*	*1.000*	*1.000*	*1.000*	*.*	*1.000*	*.000*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Novelty	**Pearson Correlation**	*.116**	*-.043*	*.000*	*.000*	*.000*	*.000*	*.000*	*1.000*	*.249**
	Sig. (2-tailed)	*.011*	*.342*	*1.000*	*1.000*	*1.000*	*1.000*	*1.000*	*.*	*.000*
	N	*487*	*487*	*493*	*493*	*493*	*493*	*493*	*493*	*492*
Overall, how favorable did you feel about using self service technologies instead	**Pearson Correlation**	*.130**	*-.126**	*.241**	*-.161**	*.071*	*-.006*	*-.169**	*.249**	*1.000*
	Sig. (2-tailed)	*.004*	*.005*	*.000*	*.000*	*.118*	*.898*	*.000*	*.000*	*.*
	N	*501*	*501*	*492*	*492*	*492*	*492*	*492*	*492*	*510*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

We can observe significant correlations for most of the components (except Human Interaction and Convenience). We can also observe the expected correlations within the first two components generating high colinearity between those two components (we need to remember that we forced the division of this two components in Factor Analysis).

After reviewing the correlation matrix, it is essential to evaluate each component separately. **Appendix 9** shows complete analysis for each single variable.

Model Summary Interpretation

Model Summary

		R	R Square	Adjusted R Square	Std. Error of the Estimate
Model	1	.252[a]	.063	.062	.78
	2	.342[b]	.117	.114	.76
	3	.385[c]	.148	.143	.75
	4	.415[d]	.172	.165	.74
	5	.424[e]	.180	.171	.74

a. Predictors: (Constant), Novelty

b. Predictors: (Constant), Novelty, Control

c. Predictors: (Constant), Novelty, Control, Safe Design

d. Predictors: (Constant), Novelty, Control, Safe Design, Technological Dependency

e. Predictors: (Constant), Novelty, Control, Safe Design, Technological Dependency, Gender?

We need to consider several figures from this table:

- ✓ The R means the strength of association between each component (independent metric variables) with the dependent (metric) variable. The values of R range from -1 to 1. The sign of R indicates the direction of the relationship (positive or negative). The absolute value of R indicates the strength; here a low absolute value of **(.424)** indicates a weak relationship.
- ✓ The coefficient of determination R^2 mean the proportion of the total variation in the dependent variable explained by the regression model. The values of R squared range from 0 to 1. As we can appreciate here, a small value **(.180)** indicates that the model does not fit the data well. Adjusted R squared attempts to correct R squared to more closely reflect the goodness of fit of the model in the population, helping poorly in this case.
- ✓ The Standard Error of the Estimate (SEE) represents the standard deviation of the actual Y values from the predicted Y values. In this case the std. dev. results are low. This might represent a deficient dependent variable.

Method

Variables Entered/Removed[a]

		Variables Entered	Variables Removed	Method
Model	1	*Novelty*	.	***Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).***
	2	*Control*	.	***Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).***
	3	*Safe Design*	.	***Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).***
	4	*Technological Dependency*	.	***Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).***
	5	*Gender?*	.	***Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).***

a. Dependent Variable: Overall, how favorable did you feel about using self service technologies instead of personal services?

In this table we can appreciate the included variables in the regression model: Novelty, control, safe design, Technology dependence and gender; it is also evident the used method: Stepwise with the probability of **f <=.050**.

Model Summary Interpretation

The following table is important to meet our purpose. We wanted to know if there is any significant influence between the extracted components and people's intention to use SST's.

We have to understand some important concepts regarding the following table:

- Unstandardized coefficients: the coefficients of the estimated regression model.
- The t statistics: help to determine the relative importance of each variable in the model (we need to look for t values well below -2 or above +2.)
- Significance: to include variables they must be lower than .05

Coefficients[a]

Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
			B	Std. Error	Beta		
Model	1	(Constant)	3.688	.036		103.003	.000
		Novelty	.203	.036	.252	5.680	.000
		Control					
		Safe Design					
		Technological Dependency					
		Gender?					
	2	(Constant)	3.688	.035		105.987	.000
		Novelty	.203	.035	.252	5.854	.000
		Control	.187	.035	.232	5.379	.000
		Safe Design					
		Technological Dependency					
		Gender?					
	3	(Constant)	3.686	.034		107.713	.000
		Novelty	.202	.034	.251	5.909	.000
		Control	.186	.034	.231	5.452	.000
		Safe Design	-.142	.034	-.175	-4.133	.000
		Technological Dependency					
		Gender?					
	4	(Constant)	3.686	.034		109.140	.000
		Novelty	.202	.034	.250	5.973	.000
		Control	.185	.034	.230	5.499	.000
		Safe Design	-.141	.034	-.175	-4.176	.000
		Technological Dependency	-.125	.034	-.155	-3.712	.000
		Gender?					
	5	(Constant)	3.478	.104		33.339	.000
		Novelty	.191	.034	.237	5.612	.000
		Control	.193	.034	.240	5.722	.000
		Safe Design	-.136	.034	-.169	-4.032	.000
		Technological Dependency	-.127	.034	-.158	-3.793	.000
		Gender?	.146	.070	.089	2.102	.036

a. Dependent Variable: Overall, how favorable did you feel about using self service technologies instead of personal services?

6.2.2.3 ANOVA

Even when the regression analysis did not include the complete extracted components, we can observe some kind of influence of at least five variables. The following ANOVA table also helped to conclude the same perception that we generated with R, R Squared and Adjusted R analysis.

ANOVA[f]

			Sum of Squares	df	Mean Square	F	Sig.
Model	1	Regression	19.760	1	19.760	32.263	.000[a]
		Residual	291.539	476	.612		
		Total	311.299	477			
	2	Regression	36.498	2	18.249	31.544	.000[b]
		Residual	274.801	475	.579		
		Total	311.299	477			
	3	Regression	46.056	3	15.352	27.435	.000[c]
		Residual	265.243	474	.560		
		Total	311.299	477			
	4	Regression	53.565	4	13.391	24.576	.000[d]
		Residual	257.734	473	.545		
		Total	311.299	477			
	5	Regression	55.956	5	11.191	20.687	.000[e]
		Residual	255.344	472	.541		
		Total	311.299	477			

a. Predictors: (Constant), Novelty

b. Predictors: (Constant), Novelty, Control

c. Predictors: (Constant), Novelty, Control, Safe Design

d. Predictors: (Constant), Novelty, Control, Safe Design, Technological Dependency

e. Predictors: (Constant), Novelty, Control, Safe Design, Technological Dependency, Gender?

f. Dependent Variable: Overall, how favorable did you feel about using self service technologies instead of personal services?

As we can appreciate, high residual sum of squares **(255.344)** compared with the regression sum of squares **(55.956)** indicate that the model fails to explain a lot of the variation in the dependent variable, and we need to look for additional factors that help account for a higher proportion of the variation in the dependent variable. However, each of the included variables show significance (value of the F statistic smaller than 0.05) which means that the independent variables do a good job explaining the variation in the dependent variable.

Going over the regression model, we noticed that the R square was very low; the results made necessary to try to understand the reasons why this could happen.

There might be different reasons for a small R square.

1. **The independent variables are not appropriate for the analysis (low correlations, without normal distribution or with co-linearity).**

As we can see in **Appendix 9**, there are low but significant correlations between independent variables and the dependent variable, except for components 5 and 6 (Human interaction and Convenience).

As we know, the values of the correlation coefficient range from -1 to 1; the sign of the correlation coefficient indicates the direction of the relationship (positive or negative); the absolute value of the correlation coefficient indicates the strength, with larger absolute values indicating stronger relationships. Additionally, the correlation coefficients on the main diagonal are always 1.0, because each variable has a perfect positive linear relationship with itself. As we can observe, the range of correlations went from (-0.169 to 0.249), which means weak but significant relationships.

Skewness and Kurtosis analysis demonstrate normality; however there seems to be some outliers affecting normal distributions (but with no significant influence).

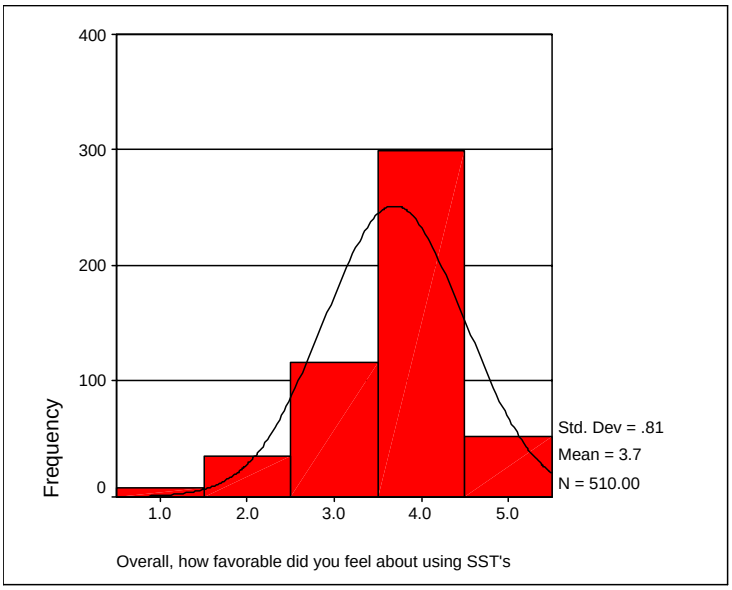
Additionally we can perceive colinearity between both forced components (1 and 2). This was expected because they were separated intentionally.

The one way analysis of variance also shows which independent variables might have low impact in the dependent variable (component 5 again and maybe component 6).

Even when there are some unclear indicators of the appropriateness of independent variables (the extracted components from Factor Analysis), we can conclude here that they work in a good way and they are not seem to be the problem.

2. The dependent variable did not work appropriately

Based on distribution, frequencies, correlation, covariance and ANOVA analysis, we observed that the dependent variable presented a flawed outcome



It is clear here that the dependent variable did not help to discriminate; opinions tend to accommodate between “neutral” and “may be” answers.

This means the stage of Self Service Technological development for the interviewed sample (people from Chihuahua, México) is not perceived as truthful, complete or positive as they might expect.

This explains why people’s answers are: “maybe or it depends”, and also explains why this variable didn’t help appropriately to understand this kind of behavior.

3. There could be additional factors influencing this relationship (covariables).

To measure and understand a possible influence from other variables, we conducted a cross tabulation between the possible dependent variables and the demographic information; results show some influence.

6.2.2.4 Cross tabs

Appendix 10 illustrates the statistically significant influence of some demographic variables in the dependent ones. A summary extracted from that analysis will be the following:

1. There is statistical evidence of age affecting the most commonly used (remembered) Self Service Technology. In this case, the younger the individual, the higher the use of internet, and the older the individual the higher the use of Atm's.

Crosstab

Count

		Check the type of interaction you have had that best remember.				
		telephone	atm	internet	all	Total
Age?	Under 25	22	69	162	15	268
	25 to 40	23	42	31	6	102
	41 to 55	25	61	24	14	124
	More than 55	1	14		1	16
Total		71	186	217	36	510

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.257[a]	9	.000
Continuity Correction			
Likelihood Ratio	97.860	9	.000
Linear-by-Linear Association	30.200	1	.000
N of Valid Cases	510		

a. 2 cells (12.5%) have expected count less than 5. The minimum expected count is 1.13.

2. Another interesting finding is that the higher the school level the higher the satisfaction observed with SST's. But, with the highest degree obtained this did not apply; this might be explained by the impact of age in higher degrees.

Crosstab

Count

		How did you evaluate your general experience with self service technologies?			
		less satisfaction than I expected	the level of satisfaction than I expected	more satisfaction than I expected	Total
School level?	High school or less	6	24	5	35
	Some college	10	87	15	112
	College graduate	18	226	42	286
	Graduate school	13	44	13	70
Total		47	381	75	503

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.580[a]	6	.024
Continuity Correction			
Likelihood Ratio	13.118	6	.041
Linear-by-Linear Association	.147	1	.702
N of Valid Cases	503		

a. 1 cells (8.3%) have expected count less than 5. The minimum expected count is 3.27.

3. The age did influence intentions to use SST's. Again, young people are more open to use this kind of services than older people.

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Age?	Under 25	2	9	65	168	23	267
	25 to 40	1	15	19	54	13	102
	41 to 55	5	11	28	68	12	124
	More than 55			4	8	4	16
Total		8	35	116	298	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.861[a]	12	.003
Continuity Correction			
Likelihood Ratio	27.920	12	.006
Linear-by-Linear Association	1.640	1	.200
N of Valid Cases	509		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is .25.

4. Finally, there is statistical evidence showing that women might be more reluctant to use SST's than man.

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Gender?	Female	5	29	66	174	25	299
	Male	3	6	50	123	27	209
Total		8	35	116	297	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.058[a]	4	.026
Continuity Correction			
Likelihood Ratio	12.018	4	.017
Linear-by-Linear Association	5.496	1	.019
N of Valid Cases	508		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.29.

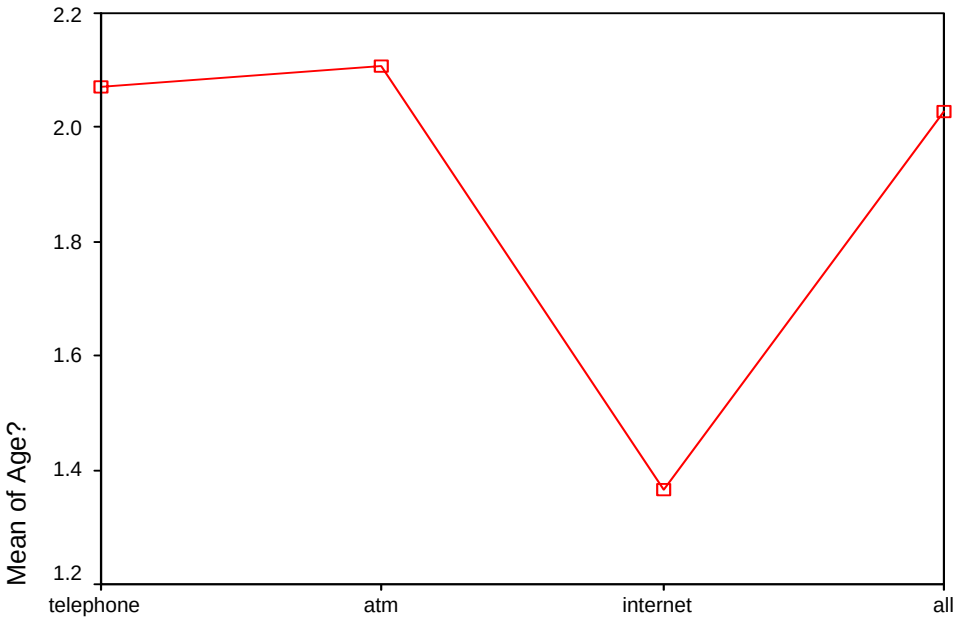
ANOVA

To test these findings we need to continue analyzing this variables; the following step was ANOVA. Here are the outcomes:

1. Age do have an impact on the type of interaction people use (remember).

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	65.695	3	21.898	30.299	.000
	Within Groups	365.709	506	.723		
	Total	431.404	509			
Gender?	Between Groups	.653	3	.218	.897	.443
	Within Groups	122.530	505	.243		
	Total	123.183	508			
School level?	Between Groups	1.209	3	.403	.681	.564
	Within Groups	295.903	500	.592		
	Total	297.111	503			
Average month family income	Between Groups	7.814	3	2.605	1.579	.194
	Within Groups	757.214	459	1.650		
	Total	765.028	462			

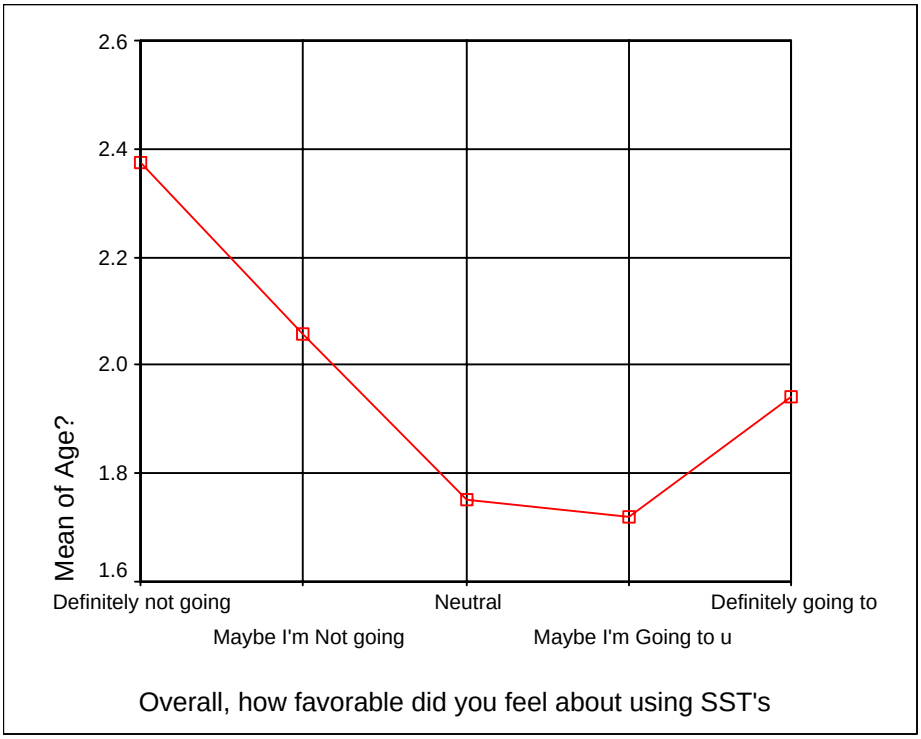


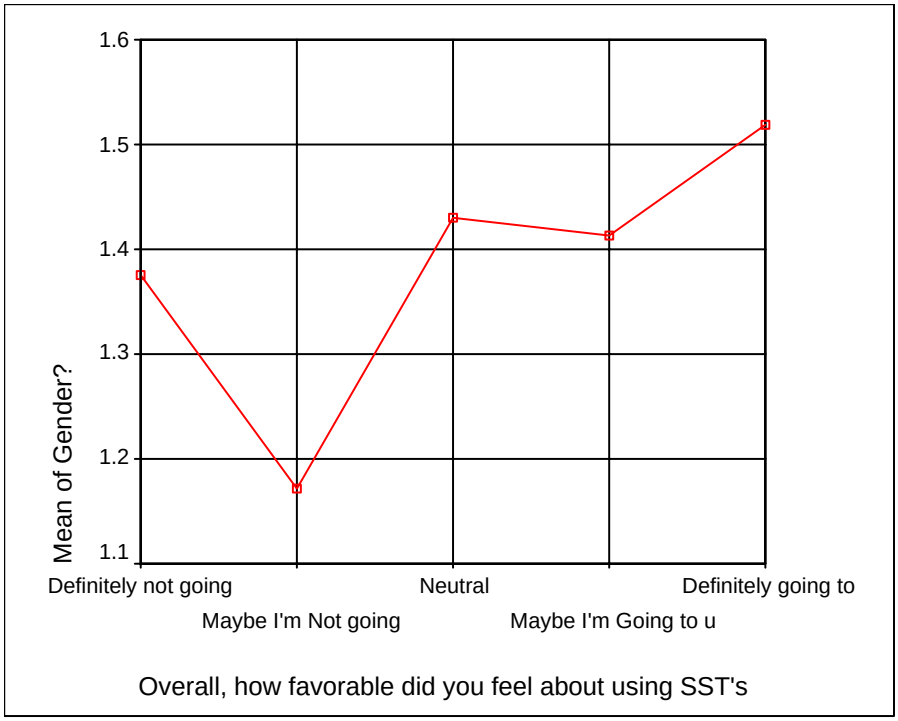
Check the type of interaction you have had that best remember.

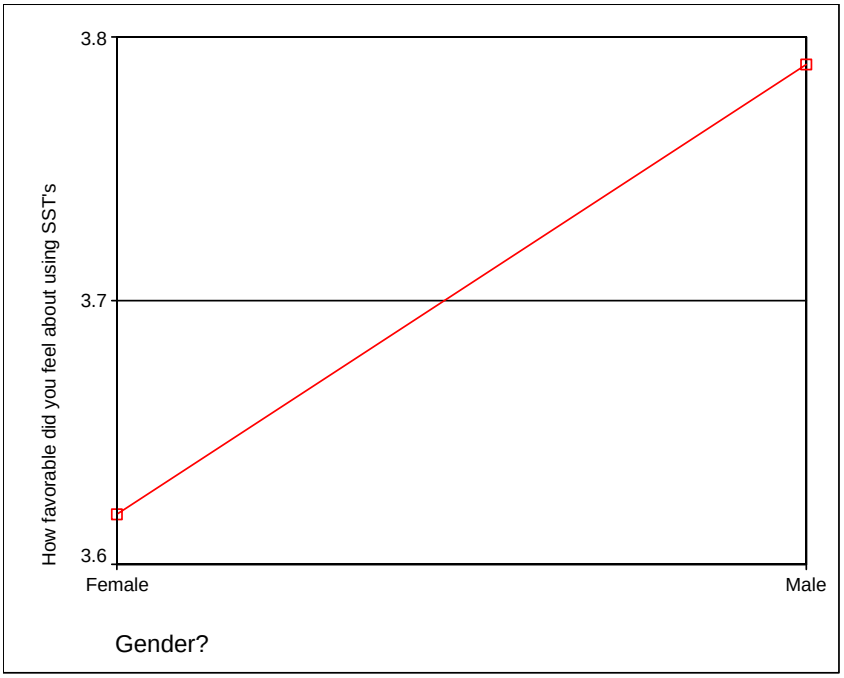
2. Age and gender also influence intentions to use SST's.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	8.134	4	2.033	2.425	.047
	Within Groups	422.660	504	.839		
	Total	430.794	508			
Gender?	Between Groups	2.678	4	.669	2.798	.026
	Within Groups	120.336	503	.239		
	Total	123.014	507			
School level?	Between Groups	1.553	4	.388	.656	.623
	Within Groups	294.952	498	.592		
	Total	296.505	502			
Average month family income	Between Groups	2.902	4	.725	.435	.783
	Within Groups	761.793	457	1.667		
	Total	764.695	461			







For complete Analysis of variance please refer to **Appendix 11.**

7. Conclusions

In order to explain the following propositions, we will follow the analogy of a rocket launch. Accordingly, three basic and important questions must be answered: 1) why do we need to launch a rocket? 2) How should we build the rocket? and 3) how should we launch the rocket?

7.1 Discussion

Why do we need to launch a rocket? Because we are creating the paths, rather than following them.

The main purpose of this research was to discover and understand some of the possible elements that are influencing and shaping customer's behaviors towards the use of Self Service Technologies. Due to globalization and information technology, companies are facing tremendous technological and economic challenges. Both forces have generated different key issues that must be addressed while doing business with consumers. Nowadays, the availability, amount, and accessibility of information about products have led consumers to a position where they have never been before. They now control the market (and they are aware of it) from the intimacy of their homes or offices - with complete control of time and space. They can find what they want, wherever they are, whenever they want it. Although this is not necessarily new, as consumers have always wanted to find out things their own way and in their own time, now they can do it in record times without going to stores!

We needed to find statistical evidence to encourage companies to focus on SST's as soon as possible. Here are some of the managerial implications considered:

1. SST's help companies reduce operative costs through repetitive task automation, and also let customer service representatives focus on specialized assistance.
2. SST's increase customer satisfaction and loyalty if customers perceive appropriate automated solutions or professional interpersonal attention.
3. The inclusion of automated technologies will lead companies to reach new market segments that they were previously unaware of, or which were not accessible.
4. Automated Services will improve customer service, allowing service personnel to focus on finding answers to complex customer's demands.
5. SST's will enable a-synchronic, direct, and permanent transactions considering ubiquity.
6. SST's will allow customer learning and feedback to improve automated processes.

The research provides some insights about customers behavior towards Self Service Technologies. At this moment, even when there is not much penalty for failure – given that everybody is equally bad - we should keep in mind that SST's might be the differentiation tool we were looking for. We now have evidence that customers avoid automated services 1) when they fail; 2) when they are poorly designed; 3) when they are not safe; 4) when they do not perform better than the personal alternative, and 5) when there is no one available to attend failures.

We have also tested the possible impact of perceived de-personalization while using SST's. We should keep in mind that no matter how focused companies are in customer service, if a client perceives any form of inattention (particularly in the introductory stage) this will negatively affect his/her buying intentions. It may also influence or even destroy brand loyalty. We have found empirical evidence of this behavior.

It is extremely important to look at de-personalization as a factor, not as a limitation. We need to remember that even when SST's provides convenience and comfort, we

always have to rely on a person to assist us when technology fails. We need to create effective social bonds to sustain us when the latter happens.

SST's allow company employees to separate and perform two different activities: operation and consultation. People's use of SST's will basically depend on two important issues: technological life cycle and degree of task specialization. If an automated service is recently introduced and customers don't know how it works, it is important to educate them until they don't need any additional assistance. If a service is highly repetitive and consumers already know how to use it, they will not require personal assistance to get what they want - unless it fails). On the other hand, if a service is highly specialized they will not seek rigid automated services.

7.2 Theoretical Implications

How should we build the rocket? We should consider three basic elements: Initial Propulsion (propellers), Rocket Body (differentiators) and Main Cabin (value added).

From the research findings, we can get some interesting ideas:

Brand positioning is a continuum of product evaluations. Customer perceptions of the brand interactions are more likely to influence his/her attitudes towards a brand or service than the "real or objective" product performance. Three main elements should be continuously evaluated : technological performance, customer's ability to interact with technology, and personnel's ability and mood to interact with customers when required. We need to remember that attitudes don't directly predict behaviors: they predict intentions, and intentions predict behaviors.

Interaction with SST's (as opposed to personnel attention) requires not only consumers´ disposition to buy, but also their cognitive effort to interact. In many cases consumers accept lower levels of achievement in first time service due to lower expectations and

expect higher levels when they interact with services for the second or third time. This is why SST's interaction creates stress at the beginning when customers do not know the device or procedure. After a period of experience customers establish their self services technologies standards, and take decisions based in these standards. This means that we need to make a strong effort in the INFORMATION PROCESS, through consumer education and attention programs.

Price reductions are becoming more and more difficult for companies to afford, and likewise, there is less and less room for differentiation. In addition, credibility has been asphyxiated by deceitful advertising, and people seems to only pay attention to the entertaining part of advertising, not the commercial one. The only way to compete is technology and service. People can reach you through technology and you must respond appropriately with empathy.

However, we need to consider another important fact, customers now search for information through SST's, compare prices, receive product information, novelties, technical information, nearest stores to buy and so on. Nonetheless, often times they prefer go buy their products on retail stores to try the product, to see it, to feel it, to smell it, and to eliminate any error caused by imagination.

Through the entire research we were trying to find the main factors affecting people's intentions to use SST's. After the exploratory/qualitative research, we have found fourteen factors:

- Human interaction
- Technological dependency
- Change resistance
- Personal motivations
- Time saving
- Ubiquity
- Rationality
- Comfort
- Convenience
- Efficiency
- Failure response
- Safety
- Design
- Tangibility and immediate possession

After Factor Analysis we found statistical evidence for 8 extracted components:

- Human interaction
- Technological dependency
- Convenience
- Ubiquity
- Control
- Novelty
- Failure response
- Safe Design

ANOVA and the regression model have found statistical support for:

- Novelty
- Control
- Age
- Safe Design
- Technological Dependency
- Gender

Additionally, we found two other statistically supported components while performing literature research:

- Ease of use
- Usefulness-Convenience

To achieve a summary of the recollected information and strive to present it in a friendly and practical way, our proposal is:

Value Added:
- Novelty
- Human Interaction
- Failure Response

Differentiators:
- Control
- Safe Designs
- Technological Dependency

Propellers:
- Convenience
- Ubiquity
- Ease of use
- Efficiency

Fig 11 The Rocket Model

Propellers:

- Convenience: SST's should encourage a sense of technological profitability through time and money savings, especially to young people.
- Ubiquity: whenever people need it, wherever they want it, however they need it.
- Ease of use: adequate and friendly designs.
- Efficiency: quick and guaranteed operations

Differentiators:

- Control: SST's should maintain people updated regarding the processes they follow, providing users a sense of situational and operational control.
- Safe Designs: secure, safe and confidential technologies. People's need to operate in a reliable and appropriate automated service.
- Technological Dependency: SST's must permit the customization of services allowing independency while using automated services.

Value added:

- Novelty: Even when the SST's processes are simple, companies should seek to entice the customer. They must be prepared for people's readiness to interact with technology.
- Human Interaction: SST's should let companies act immediately upon customer request: they should enable real time assistance through customer service representatives.
- Failure response: Companies should benefit from service recovery, offering an appropriate response (personal or mechanical) in case of technological failures.

Demographic findings:

Research shows that the Internet is the preferred SST with 42% of sample using it, followed by 36% of individuals using ATM's and 14% preferring telephone experiences. This might be explained by the fact that there were more young people interviewed than older people and they clearly show their preferences. This might be

also explained due to the underdevelopment of automated telephone systems in México. The research also proved that the younger the individual, the higher the disposition to use SST's. Another interesting finding is that women are more reluctant to use SST's. This might be explained by the role women play in Mexican homes. College-aged and younger people were satisfied with what they have because they are fascinated with what the Internet has to offer. But, older, educated people were not so satisfied, confirming what Pickle and Bruce proposed (1972).

7.3 Managerial Implications

How should we launch the rocket?

Here are our suggested steps to increase automated value added:

1. **Identify internal and external service needs.** Ask what consumers are expecting from you and what employees need to do to differentiate through service.

   We must think about the importance of the pillars of techno readiness (managerial vision, infrastructure for error free service and service testing). To test your SST's you must think as a customer, feel like them, live like them, behave like them, and specially ask the kind of questions they ask when interacting with SST's. The Web is an ideal platform for delivering self services, yet few companies have realized the full benefits from helping customers help themselves. The success of self services is tied to the success customers have finding what they are looking for. The challenge for many service organizations is allocating sufficient resources to generate and maintain self service systems and content. The potential for significant savings from self services exists for those companies that can scale self service offerings to meet growing demands.

We should always consider and evaluate three important elements: technological performance, customer's ability and motivation to interact with self service technologies, and employee's ability and mood to interact with customers and technology. We proposed here an adaptation from Kotler's Triangle Model (1994) and Parasuraman Pyramid Model (1996):

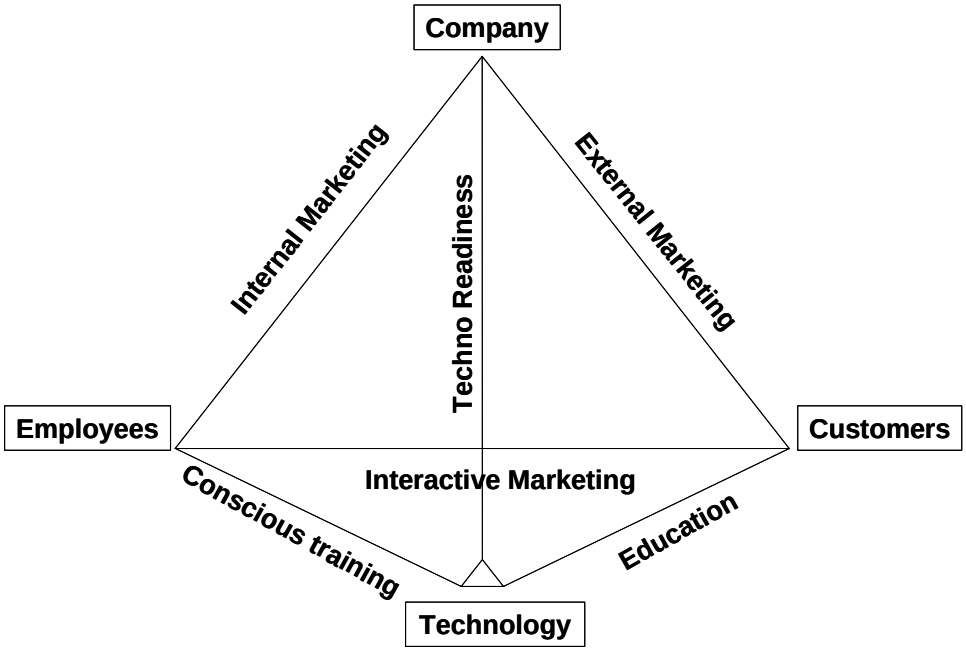


Fig.12 Fundamentals of Technological Marketing Strategy

This idea suggests the importance of a three-dimensional triangle, considering also the importance of the linkage between:

1) company and technology, based on management vision, commitment, allocated resources and performance metrics.

2) customers and technology, considering user adoption, security concerns, change resistance, educational programs, recovery systems and feedback methodologies.

3) employees and technology, developing motivational, training, supervising and support programs.

Research shows evidence that young people interact heavily with automated services (especially the Internet). This means that there is a clear need to concentrate immediately on this kind of services to reach them in the near future.

2. **Concentrate on automated service value added.** Do not offer anything if you have nothing to offer. We need to adapt our marketing strategy to technological needs - focusing on each of the traditional 4 P's of the marketing mix.

- Price

  Development of new technology has a cost but we should keep in mind that customers have the personal alternative (they can always go to stores to buy products). There is no reason to increase cost if we automate operations (this means cost reduction).

- Product

  Thousands of retail kiosks are being installed nowadays, unfortunately, many of these will fail because we are in many cases improvising automated services. We should keep in mind all of the investigated components and elements while considering, designing and installing SST's. We should consider security, privacy, colors, materials, speed connection, and so on, because they affect customer usability. We should also consider staff acceptance based in friendly, comfortable, efficient, operational and convenient designs. Study suggests that SST's need to be faster, accurate and supported.

  We definitely should not think about SST's without a back up team. They must be always there. When implementing SST's, service delivered through human contact will shift from tedious, routine and high opportunity cost to an assistance of important customer issues and desires. While SST's must be used in routine operations, human assistance must be used when there are high value added tasks. Additionally, this form of splitting tasks would let consumer interact with

service representatives just when they need it, rather than be forced to interact with tired employees.

- Place

  This is what all is about!!! We should benefit from reaching new market segments through permanent open transaction possibilities. We can have automated representatives doing business 24 hours a day, 365 days a year. We should consider and evaluate channel interaction efficiency while aligning channels and service models.

- Promotion

  We should keep in mind an important strategy:

  Through the entire research we have mentioned the importance of this process. We should start communicating benefits to attract customers. Then, we should guarantee the existence of the Propeller and Differentiator components of the Rocket Model. Finally, to retain customers we should focus on value added service (the value added components).

Communication attracts, products convince and service preserves

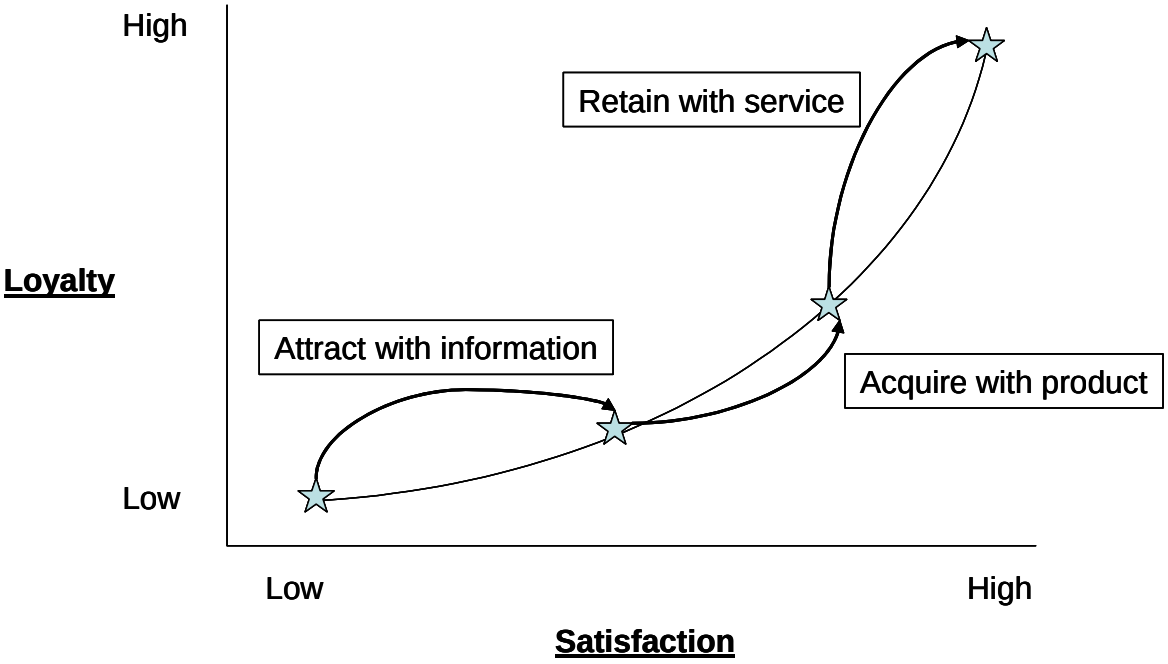


Fig.13 Marketing Strategy Focus

- Service

  Too often, companies develop self service technologies in isolated research departments, rather than involving the entire organization. The result can be a mixture of inconsistent messages and methods of customer service representative interaction**.** Successful companies understand that self service has to be flawlessly integrated with other contact channels, through the entire organization.

  It is important to help internal and external customers help themselves, understand technology, benefit from it, tend to their evolving needs, guarantee support when SST's fail. We need to establish information programs - to educate and support internal and external customers. The idea of focusing on service should also be based on staff ability, commitment and motivation to create social bonds through customer's confidence, faith and trust.

3. Formalize the service strategy through internal and external customers.

Step I. Find the right internal champion for self service proposals, considering the elements of the proposed adapted triangle: Company Vision, Technological Infrastructure, Prepared Employees and Delighted Customers. An SST Champion is a person motivated enough to move an entire organization to invest in a refundable dream. He/she is the one in charge of creating a plan considering business objectives, he/she must manage the budget, develop the required infrastructure, motivate and train employees, help employees help themselves, and develop the communication and marketing program.

Step II. Develop an SST introductory plan. Our recommendation is to INCLUDE employees in this plan development, based on the idea of motivating involvement. Motivated employees will perform better if they create the rules. The introductory marketing plan should be discussed internally at first. Companies should remember that customers (like employees) need to learn the process, so every effort must be done to educate and guide them in order to reduce technological stress.

Step III. Implement external communication plan. Clients trust the specialist. INFORMATION means education and support during the initial moments of fear and frustration. We need to invest in communication and education programs, not because customers are ever more stupid, but because they are ever more intelligent as access to information increases.

4. Generate customer's confidence.

Don't panic. Panic communicates insecurity, which translates into uncertainty. Instead, find correct answers, keep alert and pay attention to technological opportunities. This of course should include customers' involvement to turn disappointments into opportunities for creating alternative solutions. Develop a corporate risk tolerance and create a service recovery strategy

Grow in knowledge and confidence trough small steps, don’t try to run before you can walk. Properly designed self service applications can truly enhance the buyer-seller relationship. Customers who try to solve their own problems before calling customer service (and there are many who do so) appreciate that companies offer them an alternative. But companies that design systems that "trap" customers in the self service loop, are condemned to fail.

5. **Don’t give up**, if you do so then you will start to accept failure, and that’s not an option. Ask again: What self service resources are offered today? What do customers find most effective? What are the key metrics and benchmarks used to measure self service effectiveness? What strategies and best practices are required to increase success and deflection rates for self service? How do you increase customer use and adoption of self services? How do you pick applications, functions and users that are ready for self service? How do you create a plan, and get everyone on board? How do you identify and “sell” the benefits of self service to users and management? Deploying successful self service applications is as much about meeting user needs and creating effective processes, as it is about deploying the right technology.

7.4 Research Limitations and Further Research

We appreciated and deeply considered our thesis readers' comments; consequently, it is significant to clarify some important issues related with the outcomes of this research.

First of all, the idea of testing the Hypotheses never went out of our minds, yet it is important to understand that this research began in a context where no previous research exists for this specific topic. As a result we found it necessary to adjust the initial suggested factors as the exploratory (qualitative) outcomes became apparent. In summary, we understand the need to test the initial ideas, but it was necessary to first clarify which ideas to test; that's why the purpose of this dissertation research was to make evident which ideas to test. As a post doctoral research project, it is very important to design and operationalize a study which will test these ideas.

It is also very important to consider the idea of linking this type of research with the suggested Customer Lifetime Value (CLV) Theory, (Donkers et.al, 2003); as the authors propose, "a customer's profitability depends on the number of services purchased, the usage of each service and the profit margin of these services"; this implies a very complex customer behavior predictive model, and it would be very valuable to test how the proposed components in this research are influencing the number of self services purchased, the usage rate of each self service technology, and the perceived profit of using them. It might be valuable to develop an econometric model, including the revealed components of this report, as an essential proposition of the organizational values in a competitive technological environment. But it is also critical to clarify that that was not the initial intention of this project.

As more and more research about Self Service Technologies appears, there also appear more and more questions. The scope of this particular research project is limited to the specified market segment with its own particular and peculiar uniqueness. An additional reflection should be emphasized interrelated with the applied methodology.

There are some considerations to keep in mind to direct future research:

- This is one of the initial projects searching for components influencing intentions to use SST's, there were some others using qualitative research, and a few using statistical analysis.
- We have found five statistically proven components to explain 40% of variance. What are the variables that explain the remaining 60%?

Other obvious questions are:

- What about the influence of demographic covariables? Is this study reliable for different segments, cultures, subcultures?
- Once the proposed models are applied, would they increase customer satisfaction and loyalty?
- With the speedy evolution of technology, how long will the discovered components last? And which of them will continue? How will they evolve? Will they be stable over time?
- If we separate Self Service Technologies, will the results be the same?
- Could a cost-benefit analysis be performed on the proposed models?
- What about a longitudinal analysis of customer's behavior towards SST's?

Appendix 1

Face Validity

Thanks for attending this petition!

The objective of this doctoral research project is to find Self Service Dimensions and consumer preferences related to automated systems.

This is the initial pool of items obtained from different research techniques: literature review, focus groups and depth interviews. After the analysis of each technique, we tried to merge all the results in one single group of questions, avoiding repetition and considering a hypothetical classification.

As an initial step of the following stage, we are trying to conduct face validity (based on expert opinions) and simultaneously a pretest of these initial items with a specific number of selected individuals. The purpose is to reduce the number of items to a most appropriate one based on statistical tests and reliability coefficients.

What I need you to do is to put a BOLD “X” in the left square of each single item if you consider it as a required item for each particular section.

If you have any doubt or comment, please send it to me to the following email address: enrique.portillo@itesm.mx

I strongly appreciated your time and support.

Section 1: Human Interaction

	When I use self service technologies, personal assistance should be available to attend my needs at any time.
	I don't feel safe if there is no person who endorses the operation I'm doing.
	I prefer to avoid companies' employees; I don't like to interact with people's bad mood, funny faces or indifference.
	It's uncomfortable to talk with a machine, personal service is more agreeable.
	To talk with a person, implied an incomplete and limited communication as a consequence of the anxiety to confront another person.
	It is very upsetting to be waiting a recording machine to attend me.
	What I like from Self Service Technologies is that they offer standardized alternatives compared to inconsistency of personal service.
	Compared with a machine, a person tries to find solutions to my needs, a machine don't.
	Technology didn't fail; it is always human hand the one that committed mistakes.
	I like the idea of doing business trough self service technologies because there are no own personal or seller pressures if I don't complete the buying process.
	I prefer self service technologies, because it is common that employees don't have an adequate knowledge of what they sell or are not trained to attend correctly their customer's needs.
	For me, it is more important the socialization element on a buying situation. It became a social experience more than a convenience.
	I see Automated services as a way for distraction, recreation and opportunity.
	When people have free time, they prefer to go personally to stores.
	Personal interaction is required when people look for specialized advisory and business relationships, not to perform basic operations.
	When I get technical advise, I feel as if I am being taking advantage of by someone who knows more than I do
	When I have a problem with self service technologies I prefer to solve the problem on my own ratter than call for help

Section 2: Rationality

	The advantage of Self Service Technologies like Internet is that I can realize specific and rational purchases, not by impulse.
	Through Self Service Technologies like Internet you can compare prices of what you are looking for so you can adjust to your budget.
	The advantage of using a Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.
	One advantage of self service technologies is that I decide the level of involvement with the task because I don't depend on other people's ability to attend me.

Section 3: Change resistance

	Ignorance of Self Service Technologies operation makes them more complicated, less useful and limited only to basic operations.
	The fact that I don't know the way SST´s operate, generates a sense of frustration that increases my rejection to use them.
	It is hard to adapt to new technology, by laziness or fear
	I have avoided trying self service technologies because it takes too much time to learn how to use them.
	I get overwhelmed with how much I need to know to use the latest technology systems
	The more familiarized with automated services, the easier and frequent his use.
	There is no sense trying out self service technologies when the alternative I have it's still functional and efficient.
	There is a resistance to use Self Service Technologies because people already have a precedent of personal service.
	It is hard to break the paradigm that a machine can't solve your problem.
	The problem with self service technologies is that they don't have instructions on how to use them.
	At the introduction of a self service technology, a person who knows the processes should teach me, so I can be able to learn how to use it.
	If there is not enough information about advantages and disadvantages of Self Service Technologies, I prefer to use personal services.
	Self Service Technologies must offer greater advantages compared to traditional services, so I can really feel the need to change to it.
	To accede to Self Service Technologies, you must have a strong need to use it or don't have any other alternative.
	I resist using new technology due to what people can think of my mistakes; I worry about asking or being in a ridiculous situation.

Section 4: Comfort

	It is very comfortable to do what you have to do from your own house without having to dress up and going anywhere.
	Purchasing through Self Service Technologies let me avoid traffic, find a parking lot or wait in lines.
	What I like from Self Service Technologies is that I can do other things while waiting for somebody to attend me.
	What I like from Self Service Technologies is that It is comfortable to conduct virtual operations without carry out any money.

Section 5: Time saving

	Automated services are good because they save you time, you can make things from your own house without having to move.
	With automated services people are going to spend less time. They are faster than personally deal with somebody.
	They make you waste a lot of time waiting on telephone, that's a reason why I prefer to go to the physical place to make what I had to do.
	It is frustrating to go through a self service technology encounter because it can take too much time
	Speed by Internet it's still not so good, it take to much time loading a page and it result in a loss of time.
	Personal attention implies losing time while doing lines and wait for somebody to understand to you; whereas in Internet this doesn't happen.
	When people already know how to handle technology, they are not concerned about the simplicity of design, neither want images, they want speed.
	One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.

Section 6: Ubiquity

	The advantage of Self Service Technologies is Ubiquity, and it means you can use any kind of device, at the moment you need, from the place you where.
	Self service technologies are generally available at all times.
	Trough Self Service Technologies a great variety of products and services are available, and this is not easy to achieve in stores.
	Self Service Technologies give you the opportunity to find the newest products on market.
	While purchasing, the fundamental thing is product availability, the problem is that in stores, in several times, products are not available; whereas on Internet there are so many companies offering the same product that somebody will have it for sure.
	An advantage of self service technologies is that they can be placed where ever people need them and this can't happen with personal service.
	To increase use, Self Service Technologies must be available to all kind of people from all socioeconomic levels.
	I need to have other things (like computer or telephone) in order to get access to self service technologies

Section 7: Technological Dependency

	Technological advances dictate the name of the game and you must adapt to what is appearing.
	There is an increasing opening to automated technologies; people realized they need to adapt to new technologies.
	Self Service Technologies like Internet offers so much and so different information that they grab you and put you in trance while facing so many things to discover.
	Nowadays, people depend so much on technology that they turn desperate when technology fails.
	Today we depend more on technology because it let us have immediate connection with more people.
	Nowadays I have to complete most of my personal needs using technology
	Society should not depend heavily on self service technologies to solve its needs (reverse scored)
	Automatization of services represents a great advantage for people who know exactly what they want.
	Use of automated systems provides a sensation of control and independence to me.
	With Self Service Technologies we are only migrating from one kind of technological dependency to a more individual form of service.
	There is a great tendency that forces to move at the speed of technology, and people use that tool to make their life more comfortable.
	I feel comfortable the way self service technology adapts to my personal needs
	I like the idea of doing business via self service technologies because I'm not limited to regular business hours

Section 8: Tangibility and immediate possession

	I do not like to buy through automated systems when it is a product that I need to see, to touch or test
	Purchasing trough Internet applies only for some products in which tangibility is not so important (recommended books, electronic devices, CD's, etc.).
	Internet is not so fast to buy since I can't have the product at the moment of purchase.
	What I don't like from Self Service Technologies is that you don't have immediate possession of things you bought.

Section 9: Convenience

	People didn't use Self Service Technologies because they don't perceive any added value.
	I prefer self service technologies as long as they cost les than personal service
	Automatization reduces cost of service operation and this represents an advantage for consumer.
	The problem with automated services is that commissions and memberships represent a higher cost.
	An integration of different suppliers in a single Self Service Technology makes it easier to use for me.
	Young people need to communicate more frequently and that's why they use more text messages; cost of making calls is still high for them; so, they have a service with a third or fourth part of a normal call cost.
	The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.
	With Self Service Technologies, users will save money through price competition.
	Cost of SST´s is higher if we consider individual shipment expenses.
	Self Service Technologies like Internet means long distance communication at a lower cost.
	Self service technologies normally solve all my needs when I use them
	Technology creates needs that I didn't noticed before
	With technology systems, I often risk paying a lot of money for something that is not worth much.
	The hassles of getting self service technology to work for me usually make it not worthwhile.

Section 10: Efficiency

	I don't understand why Self Service Technologies don't do what they supposed to do, if that's the only reason why they are there.
	It is very uncomfortable when there's no cash availability in an ATM´s, or you receive cash in very small denominations.
	The annoying thing of a selling machine is that they don't give you the complete products.
	I don't care about impersonality and coldness of machines what matters to me is efficiency of the service they provide.
	Failure in an automated service generates in me a feeling of rejection and frustration that I prefer no longer use it.
	Effectiveness means, that it does what I need.
	Personal service is faster compared to self service technologies.
	Personal service is simpler than self service technologies.
	Self service technologies makes me more efficient in my daily occupations
	I feel confident that self service technologies will lead me to complete what I were expecting to do
	Technology systems always seems to fail at the worst possible time
	Usually self service technologies failed to complete a task

Section 11: Failure Response

	We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.
	Automated services should offer alternatives when they fail.
	Benefits from Self Service Technologies are greater compared with failures.
	In Automatization it is difficult to compensate failures instantly; however, people generally hope to receive something in return.
	It is important that companies offer guarantees and endorsements in case users don't receive what they required.
	When technology fails it should be easy to interact personally with somebody in case of failures or doubts.
	Generally, users pay for Self Service Technologies failures.
	When technology fails it is the responsibility of the company that operates the service.
	There's no chance to blame anybody else If I make a mistake wile using SST´s; and knowing that I'm responsible for failure make me stay calm.
	Company's response to technological failures could take long time.
	I don't care if technology fails; what disturbs me is the long process I have to face to have a solution.
	When technology fails, centralization of services became a frustrating experience, because companies impose a geographic barrier and you have to accomplish many different proceedings to solve your problem.
	I know that, more often, failure in a self service technology is user's responsibility.
	Even when I am responsible for my decisions when operating a self service technology, it is the company's responsibility to assist me in how to use it
	The depersonalization of the interaction makes it easier for me to complain when a self service technology fails.

Section 12: Safety

	I prefer to use SST´s due to the privacy they offered to me while buying "special" products or services.
	Privacy or confidentiality, gives people some kind of power to lose any fear and do what they want.
	I prefer to use automated services from my house, because it's safer than going out.
	The problem with automated services is that there is no legal protection for users.
	It is easier to be assaulted on an ATM than in a bank.
	I prefer not to use this type of automated systems since assurance of appropriate transactions are uncertain.
	People stop using ATM´s because they often swallow cards; if we only had to slide it without having to loosen we surely use it much more.
	Use of automated services is not safe because they can easily clone your card.
	It is very important to have feedback about transactions, to be able to confirm them and to be sure that a successful operation was made.
	It's not sure that you receive same thing you see in a web page, images are deceptive.
	It is important that companies offer some type of guarantee related with any automated service, to experience no fear and continue using it.
	The fact that delivery companies don't handle appropriately the products and don't offer safe delivery processes makes me distrust on using automated services.
	To give your credit card by Internet is a taboo, people think it's not safe, but it is.
	The most important factor to use and trust an automated service is Company's reputation.
	The only reason to buy something through Internet it's because somebody else already bought it and recommended the purchase to me.
	I worry that information I send over the internet will be seen by other people or institution.
	If there are two automated tellers in a single room I prefer to leave and not use them due to safety reasons.
	If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.
	To be safe, ATM´s should open and close doors as supposed to.

Section 13: Design

	In general, automated services are easy to use.
	Companies could offer easier and simpler automated services if they focus only on covering basic and repetitive operations.
	Automated services have incomplete and inflexible functions that limited users when trying to find the answer they are looking for.
	I don't like Automated services because they are not designed to solve exceptional situations, only basic and repetitive operations.
	What I need is that automated services are intelligent enough to recognize my problem and contact me with a person who can solve it.
	I hate when self service technologies leads me through different steps, back and forward , jumping menus to find what you are looking for.
	A reason why I didn't like automated telephone systems is because I frequently remain waiting until somebody takes care of me.
	The faked voice of self service technologies and the music they play are monotonous and tedious.
	I find self service technologies processes complicated
	Options on automated systems menus change constantly and don't allow me to familiarize enough to remember them. A good design should help for fast familiarization.
	Self Service Technologies should offer the opportunity to conduct diverse operations through one single device.
	Automatization must go hand to hand with personalization or adequacy to users needs.
	People look for immediate information; they turn desperate if a web page delays while loading.
	I don't like automated services because companies' don't care of infrastructures operating around them; for example, maintaining ATM's clean.
	Design of ATM's is so bad that sometimes banks do not realize that sun shines very hard and it is not possible to see the monitor well.
	Internal and external illumination of automated tellers and air conditioning are not adequate and don't motivate to use them.
	Self service technologies are ambiguous and unclear

Section 14: Personal Motivations

	I prefer to use the most advanced technology available.
	I find new technologies to be mentally stimulating and challenging.
	In general, I am among the first in my circle of friends to search for new technology when it appears.
	Compared to others I am one of the first to understand self service technologies.
	I am always looking for the benefits that novelty in technology can give me.
	I am always open to learn about new and different technologies.
	Learning about technology can be as rewarding as technology itself.
	I can usually figure out self service technologies with out help from others.
	Age don't have nothing to do with using SST´s; it all depends on peoples knowledge on how to us it.
	For an elder person it is more complicated to adapt to new technology. In contrast, young people don't distrust Self Service Technologies, they already born using them.
	The use of automated services requires a culturization process to understand how things work.
	The use of Self Service Technologies is a cultural problem. When there are changes on things we are familiar, there is always resistance to new things.
	Technological interactions seem to hurt a lot of people by making their skills obsolete.
	The fact that institutions believe that I can use a SST motivates me to use it.

Appendix 2

Self service Technology Questionnaire

Thanks for attending this survey!

This questionnaire objective is to find Self Service Technologies Dimensions and consumers preferences related to this kind of services.

For the matter of this survey, Self service technologies are defined as: “every machine that provide a service to a customer without the assistance of a human being”. The known automated services are: Internet, ATM’s and Telephone systems.

Please attend each section instructions.

Note: If you have any comment please make a note at the margin or back of page.

For survey administrators only:

Questionnaire responsible_____ Questionnaire number____

Introductory Questions

1. Have you had a self service technology experience in the past 6 months?
   Yes ___ No ___ (if don't, thanks for your time).

2. Check the type of interaction you have had that best remember. (just one)
   ___ Automated Telephone systems
   ___ Self service machines (vending machines, ATM's)
   ___ Internet

3. What I think from self service technologies, is:

I prefer human interaction	__	__	__	__	__	I don't like human interaction
They are safer and give privacy	__	__	__	__	__	They are unsafe and don't offer privacy
Save me time	__	__	__	__	__	Waste my time
They help to buy rationally	__	__	__	__	__	They don't help to buy rationally
I have access to new things	__	__	__	__	__	I resist to change what I know
They let me be Independent	__	__	__	__	__	They create dependency
I have control of what I want to do, a the time I want to do it from where I Want	__	__	__	__	__	I don't have control of what I want to do, at the time I want to do it from where I want it.
They are more comfortable to use	__	__	__	__	__	They are more uncomfortable
I can touch and have immediate possession of things	__	__	__	__	__	I cant touch or have immediately the products I bought
It is Convenient to buy trough it	__	__	__	__	__	It is inconvenient to buy trough it
They have more advantages than disadvantages	__	__	__	__	__	They have more disadvantages than advantages
They are efficient	__	__	__	__	__	They are Inefficient
They have good Design	__	__	__	__	__	They have bad Design
Companies have an appropriate failure responses	__	__	__	__	__	Companies don't have inappropriate failure responses

Instructions: For each phrase, circle the number that best describes your opinion.

Section 1: Human Interaction

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	When I use self service technologies, personal assistance should be available to attend my needs at any time.	1	2	3	4	5
2.	I don't feel safe if there is no person who endorses the operation I'm doing.	1	2	3	4	5
3.	I prefer to avoid companies' employees; I don't like to interact with people's bad mood, funny faces or indifference.	1	2	3	4	5
4.	It's uncomfortable to talk with a machine, personal service is more agreeable.	1	2	3	4	5
5.	To talk with a person, implied an incomplete and limited communication as a consequence of the anxiety to confront another person.	1	2	3	4	5
6.	It is very upsetting to be waiting a recording machine to attend me.	1	2	3	4	5
7.	What I like from Self Service Technologies is that they offer standardized alternatives compared to inconsistency of personal service.	1	2	3	4	5
8.	Compared with a machine, a person tries to find solutions to my needs, a machine don't.	1	2	3	4	5
9.	Technology didn't fail; it is always human hand the one that committed mistakes.	1	2	3	4	5
10.	I like the idea of doing business trough self service technologies because there are no own personal or seller pressures if I don't complete the buying process.	1	2	3	4	5
11.	I prefer self service technologies, because it is common that employees don't have an adequate knowledge of what they sell or are not trained to attend correctly their customer's needs.	1	2	3	4	5
12.	For me, it is more important the socialization element on a buying situation. It became a social experience more than a convenience.	1	2	3	4	5
13.	I see Automated services as a way for distraction, recreation and opportunity.	1	2	3	4	5
14.	When people have free time, they prefer to go personally to stores.	1	2	3	4	5
15.	Personal interaction is required when people look for specialized advisory and business relationships, not to perform basic operations.	1	2	3	4	5
16.	When I get technical advise, I feel as if I am being taking advantage of by someone who knows more than I do	1	2	3	4	5
17.	When I have a problem with self service technologies I prefer to solve the problem on my own ratter than call for help	1	2	3	4	5

Section 2: Rationality

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	The advantage of Self Service Technologies like Internet is that I can realize specific and rational purchases, not by impulse.	1	2	3	4	5
2.	Through Self Service Technologies like Internet you can compare prices of what you are looking for so you can adjust to your budget.	1	2	3	4	5
3.	The advantage of using a Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.	1	2	3	4	5
4.	One advantage of self service technologies is that I decide the level of involvement with the task because I don't depend on other people's ability to attend me.	1	2	3	4	5

Section 3: Change resistance

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Ignorance of Self Service Technologies operation makes them more complicated, less useful and limited only to basic operations.	1	2	3	4	5
2.	The fact that I don't know the way SST´s operate, generates a sense of frustration that increases my rejection to use them.	1	2	3	4	5
3.	It is hard to adapt to new technology, by laziness or fear	1	2	3	4	5
4.	I have avoided trying self service technologies because it takes too much time to learn how to use them.	1	2	3	4	5
5.	I get overwhelmed with how much I need to know to use the latest technology systems	1	2	3	4	5
6.	The more familiarized with automated services, the easier and frequent his use.	1	2	3	4	5
7.	There is no sense trying out self service technologies when the alternative I have it's still functional and efficient.	1	2	3	4	5
8.	There is a resistance to use Self Service Technologies because people already have a precedent of personal service.	1	2	3	4	5
9.	It is hard to break the paradigm that a machine can't solve your problem.	1	2	3	4	5
10.	The problem with self service technologies is that they don't have instructions on how to use them.	1	2	3	4	5

11.	At the introduction of a self service technology, a person who knows the processes should teach me, so I can be able to learn how to use it.	1	2	3	4	5
12.	If there is not enough information about advantages and disadvantages of Self Service Technologies, I prefer to use personal services.	1	2	3	4	5
13.	Self Service Technologies must offer greater advantages compared to traditional services, so I can really feel the need to change to it.	1	2	3	4	5
14.	To accede to Self Service Technologies, you must have a strong need to use it or don't have any other alternative.	1	2	3	4	5
15.	I resist using new technology due to what people can think of my mistakes; I worry about asking or being in a ridiculous situation.	1	2	3	4	5

Section 4: Comfort

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	It is very comfortable to do what you have to do from your own house without having to dress up and going anywhere.	1	2	3	4	5
2.	Purchasing through Self Service Technologies let me avoid traffic, find a parking lot or wait in lines.	1	2	3	4	5
3.	What I like from Self Service Technologies is that I can do other things while waiting for somebody to attend me.	1	2	3	4	5
4.	What I like from Self Service Technologies is that It is comfortable to conduct virtual operations without carry out any money.	1	2	3	4	5

Section 5: Time saving

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Automated services are good because they save you time, you can make things from your own house without having to move.	1	2	3	4	5
2.	With automated services people are going to spend less time. They are faster than personally deal with somebody.	1	2	3	4	5
3.	They make you waste a lot of time waiting on telephone, that's a reason why I prefer to go to the physical place to make what I had to do.	1	2	3	4	5
4.	It is frustrating to go through a self service technology encounter because it can take too much time	1	2	3	4	5
5.	Speed by Internet it's still not so good, it take to much time loading a page and it result in a loss of time.	1	2	3	4	5
6.	Personal attention implies losing time while doing lines and wait for somebody to understand to you; whereas in Internet this doesn't happen.	1	2	3	4	5
7.	When people already know how to handle technology, they are not concerned about the simplicity of design, neither want images, they want speed.	1	2	3	4	5
8.	One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.	1	2	3	4	5

Section 6: Ubiquity

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	The advantage of Self Service Technologies is Ubiquity, and it means you can use any kind of device, at the moment you need, from the place you where.	1	2	3	4	5
2.	Self service technologies are generally available at all times.	1	2	3	4	5
3.	Trough Self Service Technologies a great variety of products and services are available, and this is not easy to achieve in stores.	1	2	3	4	5
4.	Self Service Technologies give you the opportunity to find the newest products on market.	1	2	3	4	5
5.	While purchasing, the fundamental thing is product availability, the problem is that in stores, in several times, products are not available; whereas on Internet there are so many companies offering the same product that somebody will have it for sure.	1	2	3	4	5

6.	An advantage of self service technologies is that they can be placed where ever people need them and this can't happen with personal service.	1	2	3	4	5
7.	To increase use, Self Service Technologies must be available to all kind of people from all socioeconomic levels.	1	2	3	4	5
8.	I need to have other things (like computer or telephone) in order to get access to self service technologies	1	2	3	4	5

Section 7: Technological Dependency

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Technological advances dictate the name of the game and you must adapt to what is appearing.	1	2	3	4	5
2.	There is an increasing opening to automated technologies; people realized they need to adapt to new technologies.	1	2	3	4	5
3.	Self Service Technologies like Internet offers so much and so different information that they grab you and put you in trance while facing so many things to discover.	1	2	3	4	5
4.	Nowadays, people depend so much on technology that they turn desperate when technology fails.	1	2	3	4	5
5.	Today we depend more on technology because it let us have immediate connection with more people.	1	2	3	4	5
6.	Nowadays I have to complete most of my personal needs using technology	1	2	3	4	5
7.	Society should not depend heavily on self service technologies to solve its needs (reverse scored)	1	2	3	4	5
8.	Automatization of services represents a great advantage for people who know exactly what they want.	1	2	3	4	5
9.	Use of automated systems provides a sensation of control and independence to me.	1	2	3	4	5
10.	With Self Service Technologies we are only migrating from one kind of technological dependency to a more individual form of service.	1	2	3	4	5
11.	There is a great trend that forces you to move at the speed of technology, and people use that tool to make their life more comfortable.	1	2	3	4	5
12.	I feel comfortable the way self service technology adapts to my personal needs	1	2	3	4	5
13.	I like the idea of doing business via self service technologies because I'm not limited to regular business hours	1	2	3	4	5

Section 8: Tangibility and immediate possession

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I do not like to buy through automated systems when it is a product that I need to see, to touch or test	1	2	3	4	5
2.	Purchasing trough Internet applies only for some products in which tangibility is not so important (recommended books, electronic devices, CD's, etc.).	1	2	3	4	5
3.	Internet is not so fast to buy since I can't have the product at the moment of purchase.	1	2	3	4	5
4.	What I don't like from Self Service Technologies is that you don't have immediate possession of things you bought.	1	2	3	4	5

Section 9: Convenience

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	People didn't use Self Service Technologies because they don't perceive any added value.	1	2	3	4	5
2.	I prefer self service technologies as long as they cost les than personal service	1	2	3	4	5
3.	Automatization reduces cost of service operation and this represents an advantage for consumer.	1	2	3	4	5
4.	The problem with automated services is that commissions and memberships represent a higher cost.	1	2	3	4	5
5.	An integration of different suppliers in a single Self Service Technology makes it easier to use for me.	1	2	3	4	5
6.	Young people need to communicate more frequently and that's why they use more text messages; cost of making calls is still high for them; so, they have a service with a third or fourth part of a normal call cost.	1	2	3	4	5
7.	The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.	1	2	3	4	5
8.	With Self Service Technologies, users will save money through price competition.	1	2	3	4	5
9.	Cost of SST´s is higher if we consider individual shipment expenses.	1	2	3	4	5
10.	Self Service Technologies like Internet means long distance communication at a lower cost.	1	2	3	4	5
11.	Self service technologies normally solve all my needs when I use them	1	2	3	4	5
12.	Technology creates needs that I didn't noticed before	1	2	3	4	5

13. With technology systems, I often risk paying a lot of money for something that is not worth much.	1	2	3	4	5
14. The hassles of getting self service technology to work for me usually make it not worthwhile.	1	2	3	4	5

Section 10: Efficiency

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I don't understand why Self Service Technologies don't do what they supposed to do, if that's the only reason why they are there.	1	2	3	4	5
2. It is very uncomfortable when there's no cash availability in an ATM´s, or you receive cash in very small denominations.	1	2	3	4	5
3. The annoying thing of a selling machine is that they don't give you the complete products.	1	2	3	4	5
4. I don't care about impersonality and coldness of machines what matters to me is efficiency of the service they provide.	1	2	3	4	5
5. Failure in an automated service generates in me a feeling of rejection and frustration that I prefer no longer use it.	1	2	3	4	5
6. Effectiveness means, that it does what I need.	1	2	3	4	5
7. Personal service is faster compared to self service technologies.	1	2	3	4	5
8. Personal service is simpler than self service technologies.	1	2	3	4	5
9. Self service technologies makes me more efficient in my daily occupations	1	2	3	4	5
10. I feel confident that self service technologies will lead me to complete what I were expecting to do	1	2	3	4	5
11. Technology systems always seems to fail at the worst possible time	1	2	3	4	5
12. Usually self service technologies failed to complete a task	1	2	3	4	5

Section 11: Failure Response

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.	1	2	3	4	5
2.	Automated services should offer alternatives when they fail.	1	2	3	4	5
3.	Benefits from Self Service Technologies are greater compared with failures.	1	2	3	4	5
4.	In Automatization it is difficult to compensate failures instantly; however, people generally hope to receive something in return.	1	2	3	4	5
5.	It is important that companies offer guarantees and endorsements in case users don't receive what they required.	1	2	3	4	5
6.	When technology fails it should be easy to interact personally with somebody in case of failures or doubts.	1	2	3	4	5
7.	Generally, users pay for Self Service Technologies failures.	1	2	3	4	5
8.	When technology fails it is the responsibility of the company that operates the service.	1	2	3	4	5
9.	There's no chance to blame anybody else If I make a mistake wile using SST´s; and knowing that I'm responsible for failure make me stay calm.	1	2	3	4	5
10.	Company's response to technological failures could take long time.	1	2	3	4	5
11.	I don't care if technology fails; what disturbs me is the long process I have to face to have a solution.	1	2	3	4	5
12.	When technology fails, centralization of services became a frustrating experience, because companies impose a geographic barrier and you have to accomplish many different proceedings to solve your problem.	1	2	3	4	5
13.	I know that, more often, failure in a self service technology is user's responsibility.	1	2	3	4	5
14.	Even when I am responsible for my decisions when operating a self service technology, it is the company's responsibility to assist me in how to use it	1	2	3	4	5
15.	The depersonalization of the interaction makes it easier for me to complain when a self service technology fails.	1	2	3	4	5

Section 12: Safety

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I prefer to use SST´s due to the privacy they offered to me while buying "special" products or services.	1	2	3	4	5
2.	Privacy or confidentiality, gives people some kind of power to lose any fear and do what they want.	1	2	3	4	5
3.	I prefer to use automated services from my house, because it's safer than going out.	1	2	3	4	5
4.	The problem with automated services is that there is no legal protection for users.	1	2	3	4	5
5.	It is easier to be assaulted on an ATM than in a bank.	1	2	3	4	5
6.	I prefer not to use this type of automated systems since assurance of appropriate transactions are uncertain.	1	2	3	4	5
7.	People stop using ATM´s because they often swallow cards; if we only had to slide it without having to loosen we surely use it much more.	1	2	3	4	5
8.	Use of automated services is not safe because they can easily clone your card.	1	2	3	4	5
9.	It is very important to have feedback about transactions, to be able to confirm them and to be sure that a successful operation was made.	1	2	3	4	5
10.	It's not sure that you receive same thing you see in a web page, images are deceptive.	1	2	3	4	5
11.	It is important that companies offer some type of guarantee related with any automated service, to experience no fear and continue using it.	1	2	3	4	5
12.	The fact that delivery companies don't handle appropriately the products and don't offer safe delivery processes makes me distrust on using automated services.	1	2	3	4	5
13.	To give your credit card by Internet is a taboo, people think it's not safe, but it is.	1	2	3	4	5
14.	The most important factor to use and trust an automated service is Company's reputation.	1	2	3	4	5
15.	The only reason to buy something through Internet it's because somebody else already bought it and recommended the purchase to me.	1	2	3	4	5
16.	I worry that information I send over the internet will be seen by other people or institution.	1	2	3	4	5
17.	If there are two automated tellers in a single room I prefer to leave and not use them due to safety reasons.	1	2	3	4	5
18.	If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.	1	2	3	4	5
19.	To be safe, ATM´s should open and close doors as supposed to.	1	2	3	4	5

Section 13: Design

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Companies could offer easier and simpler automated services if they focus only on covering basic and repetitive operations.	1	2	3	4	5
2.	Automated services have incomplete and inflexible functions that limited users when trying to find the answer they are looking for.	1	2	3	4	5
3.	What I need is that automated services are intelligent enough to recognize my problem and contact me with a person who can solve it.	1	2	3	4	5
4.	I don't like Automated services because they are not designed to solve exceptional situations, only basic and repetitive operations.	1	2	3	4	5
5.	I hate when self service technologies leads me through different steps, back and forward , jumping menus to find what you are looking for.	1	2	3	4	5
6.	A reason why I didn't like automated telephone systems is because I frequently remain waiting until somebody takes care of me.	1	2	3	4	5
7.	The faked voice of self service technologies and the music they play are monotonous and tedious.	1	2	3	4	5
8.	In general, automated services are easy to use.	1	2	3	4	5
9.	I find self service technologies processes complicated	1	2	3	4	5
10.	Options on automated systems menus change constantly and don't allow me to familiarize enough to remember them. A good design should help for fast familiarization.	1	2	3	4	5
11.	Self Service Technologies should offer the opportunity to conduct diverse operations through one single device.	1	2	3	4	5
12.	Automatization must go hand to hand with personalization or adequacy to users needs.	1	2	3	4	5
13.	People look for immediate information; they turn desperate if a web page delays while loading.	1	2	3	4	5
14.	Self service technologies are ambiguous and unclear	1	2	3	4	5
15.	I don't like automated services because companies' don't care of infrastructures operating around them; for example, maintaining ATM´s clean.	1	2	3	4	5
16.	Design of ATM´s is so bad that sometimes banks do not realize that sun shines very hard and it is not possible to see the monitor well.	1	2	3	4	5
17.	Internal and external illumination of automated tellers and air conditioning are not adequate and don't motivate to use them.	1	2	3	4	5

Section 14: Personal Motivations

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I prefer to use the most advanced technology available.	1	2	3	4	5
2.	I find new technologies to be mentally stimulating and challenging.	1	2	3	4	5
3.	In general, I am among the first in my circle of friends to search for new technology when it appears.	1	2	3	4	5
4.	Compared to others I am one of the first to understand self service technologies.	1	2	3	4	5
5.	I am always looking for the benefits that novelty in technology can give me.	1	2	3	4	5
6.	I am always open to learn about new and different technologies.	1	2	3	4	5
7.	Learning about technology can be as rewarding as technology itself.	1	2	3	4	5
8.	I can usually figure out self service technologies with out help from others.	1	2	3	4	5
9.	Age don't have nothing to do with using SST´s; it all depends on peoples knowledge on how to us it.	1	2	3	4	5
10.	For an elder person it is more complicated to adapt to new technology. In contrast, young people don't distrust Self Service Technologies, they already born using them.	1	2	3	4	5
11.	The use of automated services requires a culturization process to understand how things work.	1	2	3	4	5
12.	The use of Self Service Technologies is a cultural problem. When there are changes on things we are familiar, there is always resistance to new things.	1	2	3	4	5
13.	Technological interactions seem to hurt a lot of people by making their skills obsolete.	1	2	3	4	5
14.	The fact that institutions believe that I can use a SST motivates me to use it.	1	2	3	4	5

Section 15: Nomological questions

1. How did you evaluate your general experience with self service technologies? (check just one)

   ___ Received more satisfaction than I expected (positive disconfirmation).
   ___ Received the level of satisfaction than I expected (confirmation).
   ___ Received less satisfaction than I expected (negative disconfirmation).

2. Overall, how favorable did you feel about using self service technologies instead of personal services?

*	*	*	*	*
Definitely going to use them	Maybe I'm Going to use them	Neutral	Maybe I'm Not going to use them	Definitely not going to use them

Section 16: Demographical questions

1. What is your age?
   ___ Under 25
   ___ 25 to 40
   ___ 41 to 55
   ___ 56 to 70
   ___ More than 70

2. What is your gender?

   ___ Female ___ male

3. the highest level of schooling you have completed
   ___ High school or less
   ___ Some college
   ___ College graduate
   ___ Graduate school

4. You family average level of monthly income? (pesos)
   ___ Less than $5,000
   ___ $5,000 to $10,000
   ___ $10,000 to $20,000
   ___ $ 20,000 to $30,000
   ___ more than $30,000

Name of interviewed person_____

Validation format_____

Appendix 3

Face Validity Frequencies

Human interaction 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Human interaction 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Human interaction 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Human interaction 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Human interaction 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Human interaction 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Human interaction 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Human interaction 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Human interaction 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Human interaction 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Human interaction 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Human interaction 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Human interaction 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Human interaction 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Human interaction 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Human interaction 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Human interaction 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Rationality 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Rationality 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Rationality 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Rationality 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Change resistance 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Change resistance 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Change resistance 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Change resistance 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Change resistance 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Change resistance 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Change resistance 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Change resistance 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Change resistance 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Comfort 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Comfort 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Comfort 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Comfort 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Time saving 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Time saving 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Time saving 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Time saving 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Time saving 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Time saving 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Time saving 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Time saving 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Ubicuity 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Ubicuity 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Ubicuity 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Ubicuity 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Ubicuity 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Ubicuity 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Ubicuity 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Ubicuity 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Dependece/Independence 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Tangibility and immediate response 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	10.0	10.0	10.0
	yes	9	90.0	90.0	100.0
	Total	10	100.0	100.0	

Tangibility and immediate response 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Tangibility and immediate response 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Tangibility and immediate response 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Convenience 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Convenience 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Convenience 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Convenience 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Convenience 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Convenience 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Convenience 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Convenience 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Convenience 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Convenience 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Convenience 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Convenience 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Convenience 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Convenience 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Efficiency 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Efficiency 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Efficiency 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Efficiency 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Efficiency 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Efficiency 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Efficiency 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Efficiency 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Efficiency 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Efficiency 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Efficiency 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Efficiency 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Failure response 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Failure response 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Failure response 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Failure response 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Failure response 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Failure response 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Failure response 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Failure response 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Failure response 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Failure response 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Safety 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Safety 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Safety 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Safety 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Safety 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Safety 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Safety 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Safety 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Safety 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Safety 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Safety 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Safety 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Safety 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Safety 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Safety 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Safety 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	10.0	10.0	10.0
	yes	9	90.0	90.0	100.0
	Total	10	100.0	100.0	

Safety 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Safety 18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Safety 19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Design 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Design 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Design 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Design 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Design 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Design 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	10.0	10.0	10.0
	yes	9	90.0	90.0	100.0
	Total	10	100.0	100.0	

Design 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Design 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Design 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Design 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	10.0	10.0	10.0
	yes	9	90.0	90.0	100.0
	Total	10	100.0	100.0	

Design 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Design 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	20.0	20.0	20.0
	yes	8	80.0	80.0	100.0
	Total	10	100.0	100.0	

Design 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Design 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Design 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Design 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Design 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	80.0	80.0	80.0
	yes	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

Personal motivations 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Personal motivations 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Personal motivations 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Personal motivations 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Personal motivations 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Personal motivations 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	6	60.0	60.0	60.0
	yes	4	40.0	40.0	100.0
	Total	10	100.0	100.0	

Personal motivations 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Personal motivations 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	70.0	70.0	70.0
	yes	3	30.0	30.0	100.0
	Total	10	100.0	100.0	

Personal motivations 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	40.0	40.0	40.0
	yes	6	60.0	60.0	100.0
	Total	10	100.0	100.0	

Personal motivations 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Personal motivations 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	30.0	30.0	30.0
	yes	7	70.0	70.0	100.0
	Total	10	100.0	100.0	

Personal motivations 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Personal motivations 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Personal motivations 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	5	50.0	50.0	50.0
	yes	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

Appendix 4

```
R E L I A B I L I T Y   A N A L Y S I S   -
S U B   S C A L E S  (A L P H A)
  1.     Q12               Human interaction 2
  2.     Q14               Human interaction 4
  3.     Q16               Human interaction 6

Reliability Coefficients

N of Cases =     50.0                    N of Items =  3

Alpha =    .7318
```

```
  1.     Q22               Rationality 2
  2.     Q23               Rationality 3
  3.     Q1005             Efficiency 5

Reliability Coefficients

N of Cases =     49.0                    N of Items =  3

Alpha =   .5986
```

```
  1.     Q32               Change resistance 2
  2.     Q312              Change resistance 12
  3.     Q314              Change resistance 14

Reliability Coefficients

N of Cases =     50.0                    N of Items =  3

Alpha =    .7035
```

```
  1.     Q42               Comfort 2
  2.     Q43               Comfort 3
  3.     Q65               Ubicuity 5

Reliability Coefficients

N of Cases =     50.0                    N of Items =  3

Alpha =    .8108
```

1.	Q52	Time saving 2
2.	Q54	Time saving 4
3.	Q56	Time saving 6

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .7668

1.	Q79	Dependence/Independence 9
2.	Q711	Dependence/Independence 11
3.	Q713	Dependence/Independence 13

Reliability Coefficients

N of Cases = 49.0 N of Items = 3

Alpha = .7690

1.	Q97	Convenience 7
2.	Q98	Convenience 8
3.	Q1011	Efficiency 11

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .5110

1.	Q1101	Failure response 1
2.	Q1102	Failure response 2
3.	Q1106	Failure response 6

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .7123

1.	Q1216	Safety 16
2.	Q1217	Safety 17
3.	Q1218	Safety 18

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .7610

1.	Q1302	Design 2
2.	Q1314	Design 14
3.	Q1315	Design 15

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .6652

1.	Q1403	Personal motivations 3
2.	Q1404	Personal motivations 4
3.	Q1405	Personal motivations 5

Reliability Coefficients

N of Cases = 50.0 N of Items = 3

Alpha = .7936

Face Validity, Statistical analysis, Cronbach Alpha and Factor Analysis results.

Initial Items	Face validity	Alpha and Factor Analysis
Human Interaction 1	Included	Deleted
Human Interaction 2	Included	Included
Human Interaction 3	Included	Deleted
Human Interaction 4	Included	Included
Human Interaction 5	Deleted	Deleted
Human Interaction 6	Included	Included
Human Interaction 7	Included	Deleted
Human Interaction 8	Included	Deleted
Human Interaction 9	Deleted	Deleted
Human Interaction 10	Included	Deleted
Human Interaction 11	Deleted	Deleted
Human Interaction 12	Included	Deleted
Human Interaction 13	Deleted	Deleted
Human Interaction 14	Included	Deleted
Human Interaction 15	Deleted	Deleted
Human Interaction 16	Deleted	Deleted
Human Interaction 17	Deleted	Deleted
Rationality 1	Included	Deleted
Rationality 2	Included	Included
Rationality 3	Included	Included
Rationality 4	Included	Deleted
Change Resistance 1	Included	Deleted
Change Resistance 2	Included	Included
Change Resistance 3	Deleted	Deleted
Change Resistance 4	Included	Deleted
Change Resistance 5	Deleted	Deleted
Change Resistance 6	Included	Deleted
Change Resistance 7	Included	Deleted
Change Resistance 8	Deleted	Deleted
Change Resistance 9	Deleted	Deleted
Change Resistance 10	Deleted	Deleted
Change Resistance 11	Included	Deleted
Change Resistance 12	Included	Included
Change Resistance 13	Included	Deleted
Change Resistance 14	Included	Included
Change Resistance 15	Deleted	Deleted
Comfort 1	Included	Deleted
Comfort 2	Included	Included
Comfort 3	Included	Included
Comfort 4	Included	Deleted
Time Saving 1	Deleted	Deleted
Time Saving 2	Included	Included

Time Saving 3	Included	Deleted
Time Saving 4	Included	Included
Time Saving 5	Included	Deleted
Time Saving 6	Included	Included
Time Saving 7	Included	Deleted
Time Saving 8	Included	Deleted
Ubiquity 1	Deleted	Deleted
Ubiquity 2	Included	Deleted
Ubiquity 3	Included	Deleted
Ubiquity 4	Included	Deleted
Ubiquity 5	Included	Included
Ubiquity 6	Included	Deleted
Ubiquity 7	Included	Deleted
Ubiquity 8	Deleted	Deleted
Dependence/independence 1	Deleted	Deleted
Dependence/independence 2	Deleted	Deleted
Dependence/independence 3	Deleted	Deleted
Dependence/independence 4	Included	Deleted
Dependence/independence 5	Included	Deleted
Dependence/independence 6	Included	Deleted
Dependence/independence 7	Deleted	Deleted
Dependence/independence 8	Included	Deleted
Dependence/independence 9	Included	Included
Dependence/independence 10	Deleted	Deleted
Dependence/independence 11	Included	Included
Dependence/independence 12	Deleted	Deleted
Dependence/independence 13	Included	Included
Tangibility/immediate response 1	Included	Deleted
Tangibility/immediate response 2	Included	Deleted
Tangibility/immediate response 3	Included	Deleted
Tangibility/immediate response 4	Included	Deleted
Convenience 1	Included	Deleted
Convenience 2	Included	Deleted
Convenience 3	Included	Deleted
Convenience 4	Deleted	Deleted
Convenience 5	Deleted	Deleted
Convenience 6	Deleted	Deleted
Convenience 7	Included	Included
Convenience 8	Included	Included
Convenience 9	Deleted	Deleted
Convenience 10	Deleted	Deleted
Convenience 11	Included	Deleted
Convenience 12	Deleted	Deleted
Convenience 13	Included	Deleted
Convenience 14	Included	Deleted

Efficiency 1	Deleted	Deleted
Efficiency 2	Included	Deleted
Efficiency 3	Included	Deleted
Efficiency 4	Included	Deleted
Efficiency 5	Included	Included
Efficiency 6	Deleted	Deleted
Efficiency 7	Deleted	Deleted
Efficiency 8	Included	Deleted
Efficiency 9	Included	Deleted
Efficiency 10	Deleted	Deleted
Efficiency 11	Included	Included
Efficiency 12	Deleted	Deleted
Failure Response 1	Included	Included
Failure Response 2	Included	Included
Failure Response 3	Deleted	Deleted
Failure Response 4	Deleted	Deleted
Failure Response 5	Included	Deleted
Failure Response 6	Included	Included
Failure Response 7	Deleted	Deleted
Failure Response 8	Included	Deleted
Failure Response 9	Deleted	Deleted
Failure Response 10	Deleted	Deleted
Failure Response 11	Included	Deleted
Failure Response 12	Deleted	Deleted
Failure Response 13	Deleted	Deleted
Failure Response 14	Included	Deleted
Failure Response 15	Deleted	Deleted
Safety 1	Included	Deleted
Safety 2	Deleted	Deleted
Safety 3	Deleted	Deleted
Safety 4	Included	Deleted
Safety 5	Deleted	Deleted
Safety 6	Included	Deleted
Safety 7	Deleted	Deleted
Safety 8	Included	Deleted
Safety 9	Included	Deleted
Safety 10	Included	Deleted
Safety 11	Included	Deleted
Safety 12	Included	Deleted
Safety 13	Included	Deleted
Safety 14	Included	Deleted
Safety 15	Deleted	Deleted
Safety 16	Included	Included
Safety 17	Included	Included
Safety 18	Included	Included

Safety 19	Deleted	Deleted
Design 1	Included	Deleted
Design 2	Included	Included
Design 3	Deleted	Deleted
Design 4	Included	Deleted
Design 5	Deleted	Deleted
Design 6	Included	Deleted
Design 7	Deleted	Deleted
Design 8	Deleted	Deleted
Design 9	Deleted	Deleted
Design 10	Included	Deleted
Design 11	Included	Deleted
Design 12	Included	Deleted
Design 13	Deleted	Deleted
Design 14	Included	Included
Design 15	Included	Included
Design 16	Deleted	Deleted
Design 17	Deleted	Deleted
Personal Motivations 1	Included	Deleted
Personal Motivations 2	Deleted	Deleted
Personal Motivations 3	Included	Included
Personal Motivations 4	Included	Included
Personal Motivations 5	Included	Included
Personal Motivations 6	Deleted	Deleted
Personal Motivations 7	Deleted	Deleted
Personal Motivations 8	Deleted	Deleted
Personal Motivations 9	Included	Deleted
Personal Motivations 10	Included	Deleted
Personal Motivations 11	Included	Deleted
Personal Motivations 12	Included	Deleted
Personal Motivations 13	Included	Deleted
Personal Motivations 14	Included	Deleted

Appendix 5

Have you had a self service technology experience in the past 6 months?

Statistics

Have you had a self service technology experience in the past 6 months?

N	Valid	*511*
	Missing	*0*

Have you had a self service technology experience in the past 6 months?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	*511*	*100.0*	*100.0*	*100.0*

Check the type of interaction you have had that best remember.

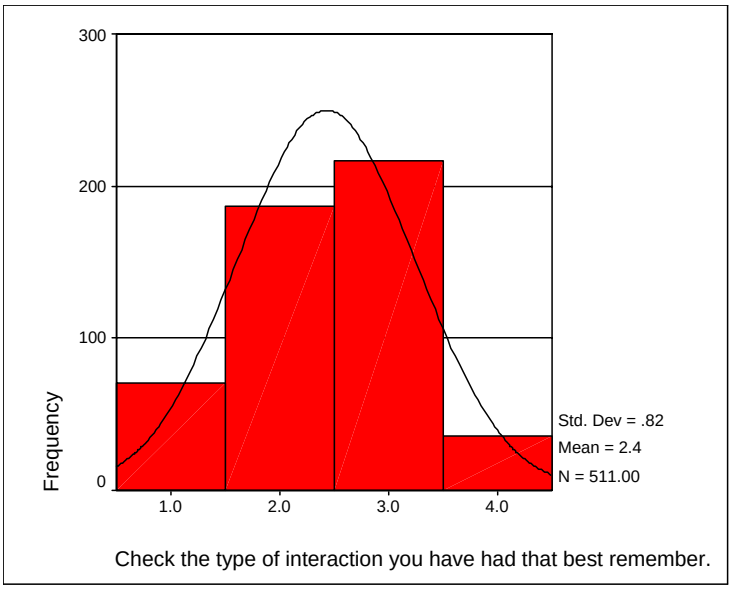
Statistics

Check the type of interaction you have had that best remember.

N	Valid	*511*
	Missing	*0*

Check the type of interaction you have had that best remember.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	telephone	*71*	*13.9*	*13.9*	*13.9*
	atm	*187*	*36.6*	*36.6*	*50.5*
	internet	*217*	*42.5*	*42.5*	*93.0*
	all	*36*	*7.0*	*7.0*	*100.0*
	Total	*511*	*100.0*	*100.0*	



Human interaction

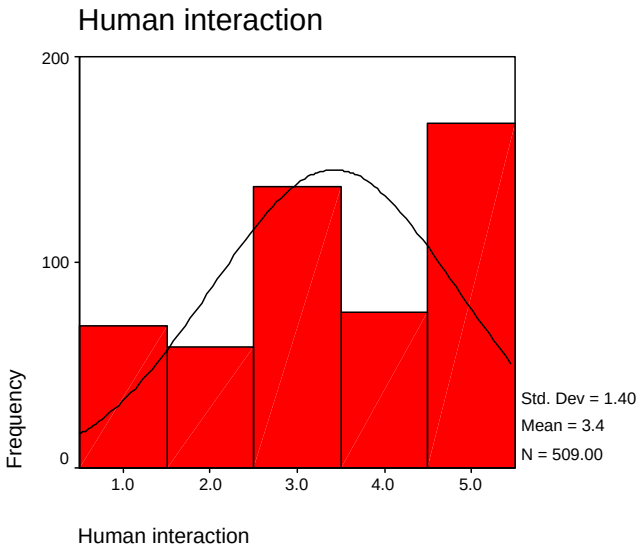
Statistics

Human interaction

N	Valid	509
	Missing	2

Human interaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	69	13.5	13.6	13.6
	2	59	11.5	11.6	25.1
	3	137	26.8	26.9	52.1
	4	76	14.9	14.9	67.0
	5	168	32.9	33.0	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



Rationality

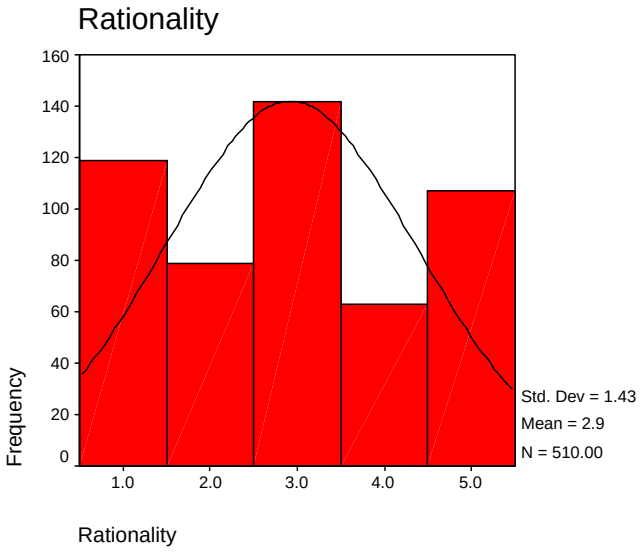
Statistics

Rationality

N	Valid	510
	Missing	1

Rationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	119	23.3	23.3	23.3
	2	79	15.5	15.5	38.8
	3	142	27.8	27.8	66.7
	4	63	12.3	12.4	79.0
	5	107	20.9	21.0	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



Change Resistance

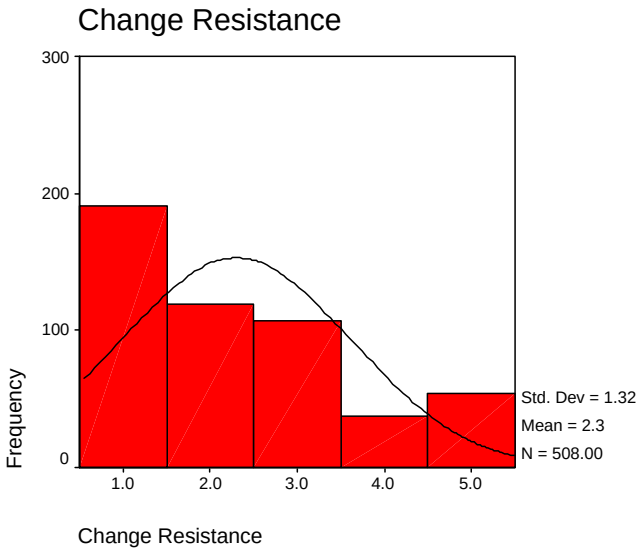
Statistics

Change Resistance

N	Valid	*508*
	Missing	*3*

Change Resistance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*191*	*37.4*	*37.6*	*37.6*
	2	*119*	*23.3*	*23.4*	*61.0*
	3	*107*	*20.9*	*21.1*	*82.1*
	4	*37*	*7.2*	*7.3*	*89.4*
	5	*54*	*10.6*	*10.6*	*100.0*
	Total	*508*	*99.4*	*100.0*	
Missing	System	*3*	*.6*		
Total		*511*	*100.0*		



Comfort

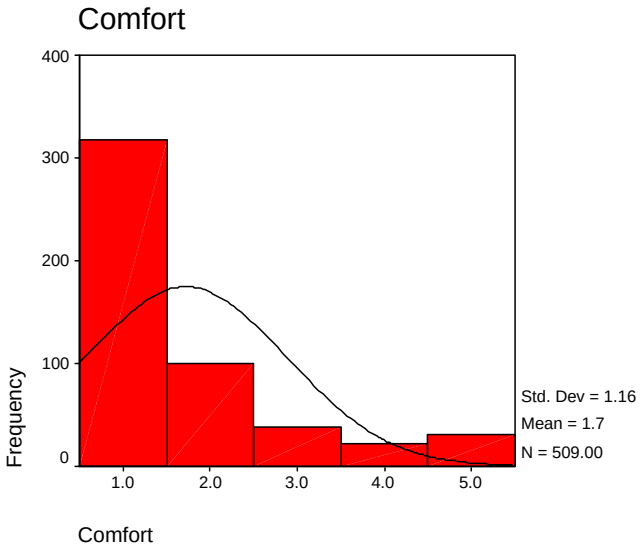
Statistics

Comfort

N	Valid	509
	Missing	2

Comfort

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	318	62.2	62.5	62.5
	2	100	19.6	19.6	82.1
	3	38	7.4	7.5	89.6
	4	22	4.3	4.3	93.9
	5	31	6.1	6.1	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



Time Saving

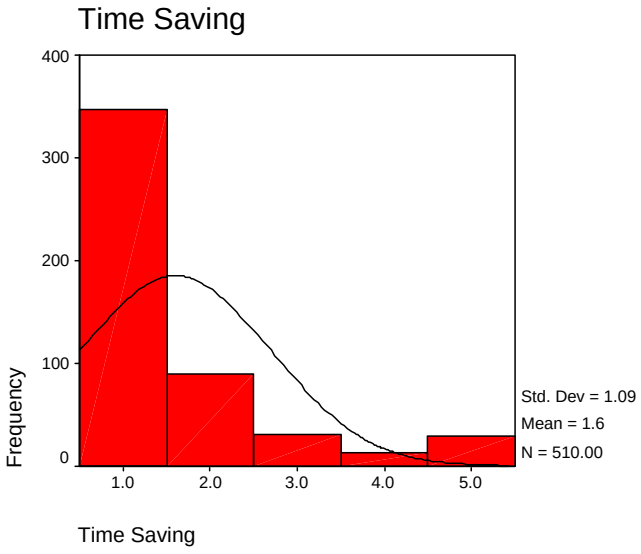
Statistics

Time Saving

N	Valid	*510*
	Missing	*1*

Time Saving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*347*	*67.9*	*68.0*	*68.0*
	2	*90*	*17.6*	*17.6*	*85.7*
	3	*31*	*6.1*	*6.1*	*91.8*
	4	*13*	*2.5*	*2.5*	*94.3*
	5	*29*	*5.7*	*5.7*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		



Technological Dependency

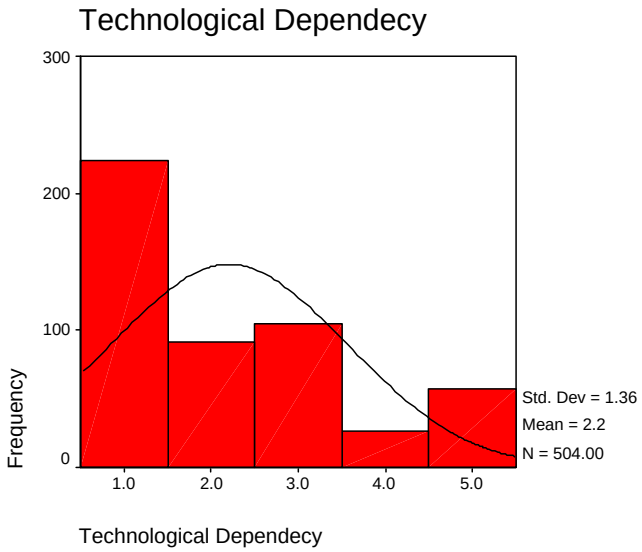
Statistics

Technological Dependecy

N	Valid	*504*
	Missing	*7*

Technological Dependecy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*224*	*43.8*	*44.4*	*44.4*
	2	*92*	*18.0*	*18.3*	*62.7*
	3	*105*	*20.5*	*20.8*	*83.5*
	4	*26*	*5.1*	*5.2*	*88.7*
	5	*57*	*11.2*	*11.3*	*100.0*
	Total	*504*	*98.6*	*100.0*	
Missing	System	*7*	*1.4*		
Total		*511*	*100.0*		



Convenience

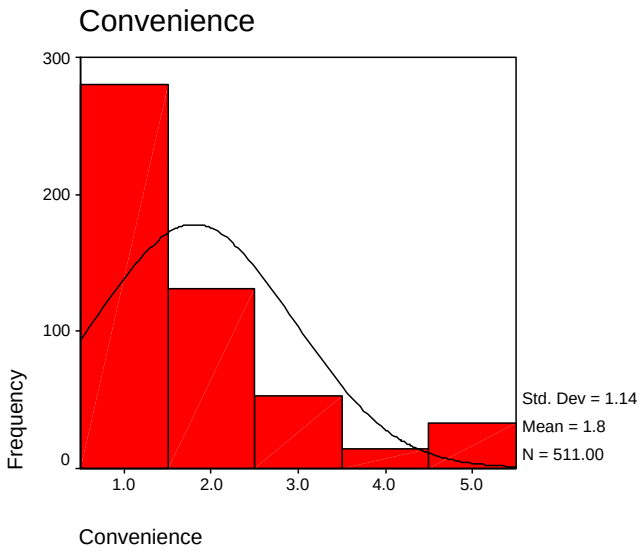
Statistics

Convenience

N	Valid	*511*
	Missing	*0*

Convenience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*280*	*54.8*	*54.8*	*54.8*
	2	*131*	*25.6*	*25.6*	*80.4*
	3	*53*	*10.4*	*10.4*	*90.8*
	4	*14*	*2.7*	*2.7*	*93.5*
	5	*33*	*6.5*	*6.5*	*100.0*
	Total	*511*	*100.0*	*100.0*	



Failure Response

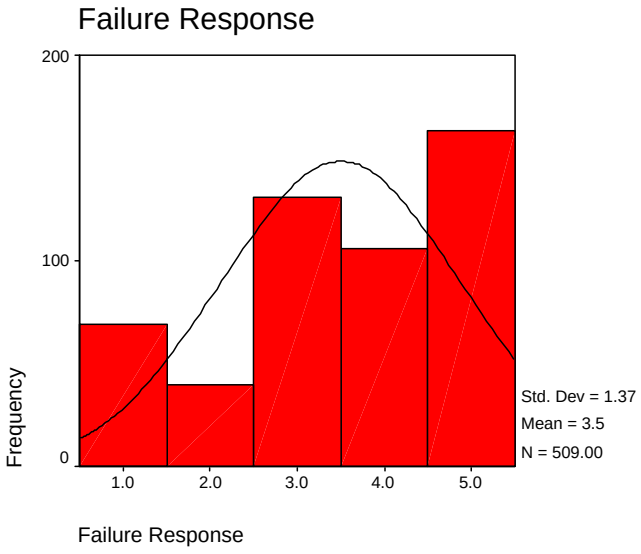
Statistics

Failure Response

N	Valid	509
	Missing	2

Failure Response

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	69	13.5	13.6	13.6
	2	40	7.8	7.9	21.4
	3	131	25.6	25.7	47.2
	4	106	20.7	20.8	68.0
	5	163	31.9	32.0	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



Safety

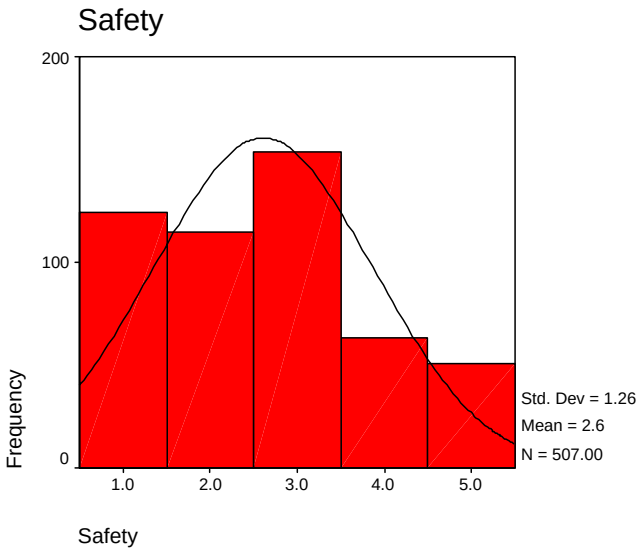
Statistics

Safety

N	Valid	*507*
	Missing	*4*

Safety

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*124*	*24.3*	*24.5*	*24.5*
	2	*115*	*22.5*	*22.7*	*47.1*
	3	*154*	*30.1*	*30.4*	*77.5*
	4	*63*	*12.3*	*12.4*	*89.9*
	5	*51*	*10.0*	*10.1*	*100.0*
	Total	*507*	*99.2*	*100.0*	
Missing	System	*4*	*.8*		
Total		*511*	*100.0*		



Design

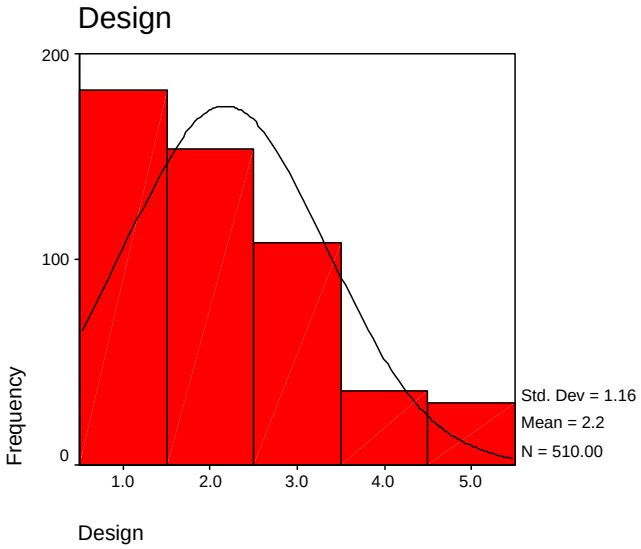
Statistics

Design

N	Valid	510
	Missing	1

Design

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	182	35.6	35.7	35.7
	2	154	30.1	30.2	65.9
	3	108	21.1	21.2	87.1
	4	36	7.0	7.1	94.1
	5	30	5.9	5.9	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



Novelty

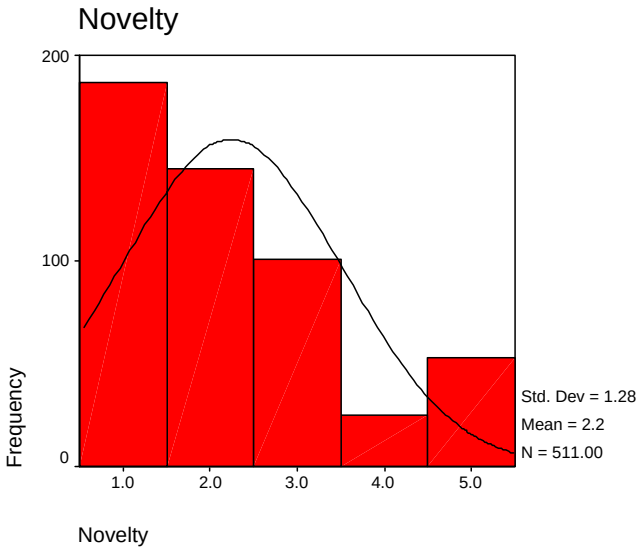
Statistics

Novelty

N	Valid	*511*
	Missing	*0*

Novelty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	*187*	*36.6*	*36.6*	*36.6*
	2	*145*	*28.4*	*28.4*	*65.0*
	3	*101*	*19.8*	*19.8*	*84.7*
	4	*25*	*4.9*	*4.9*	*89.6*
	5	*53*	*10.4*	*10.4*	*100.0*
	Total	*511*	*100.0*	*100.0*	



1. Ubiquity 5

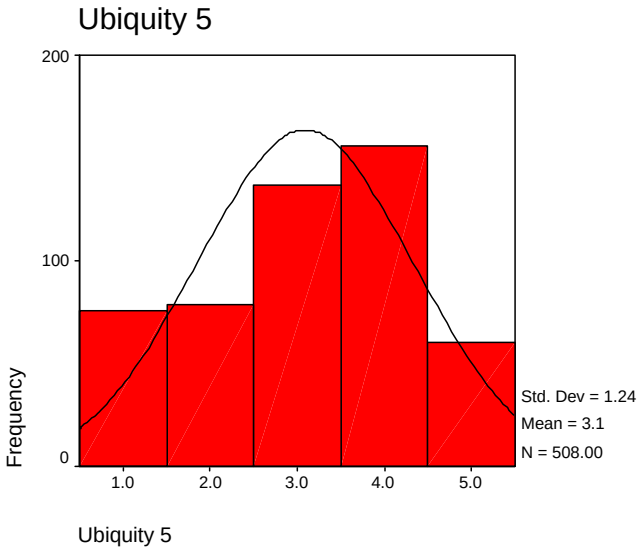
Statistics

Ubiquity 5

N	Valid	508
	Missing	3

Ubiquity 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	76	14.9	15.0	15.0
	disagree	79	15.5	15.6	30.5
	Neutral	137	26.8	27.0	57.5
	agree	156	30.5	30.7	88.2
	strongly agree	60	11.7	11.8	100.0
	Total	508	99.4	100.0	
Missing	System	3	.6		
Total		511	100.0		



2. Comfort 2

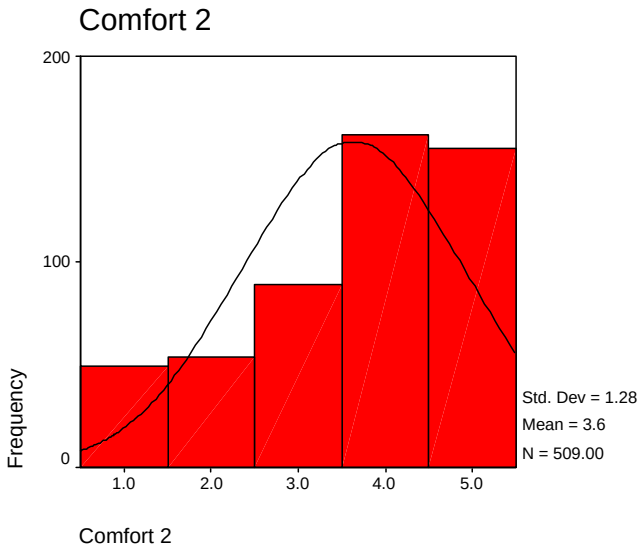
Statistics

Comfort 2

N	Valid	509
	Missing	2

Comfort 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	49	9.6	9.6	9.6
	disagree	54	10.6	10.6	20.2
	Neutral	89	17.4	17.5	37.7
	agree	162	31.7	31.8	69.5
	strongly agree	155	30.3	30.5	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



3. Human Interaction 2

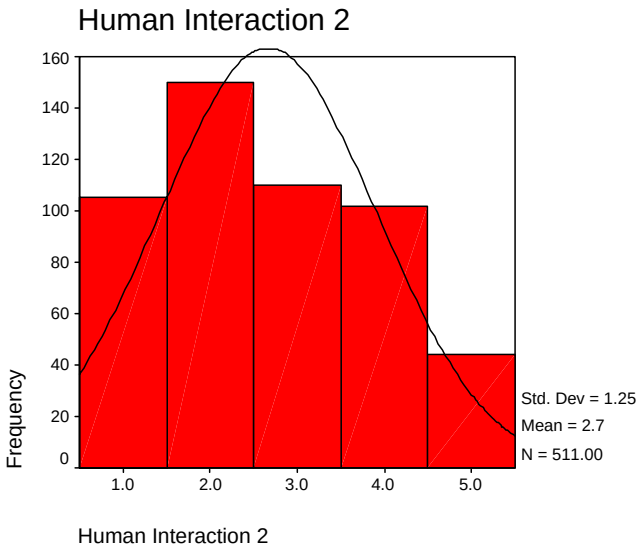
Statistics

Human Interaction 2

N	Valid	511
	Missing	0

Human Interaction 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	105	20.5	20.5	20.5
	disagree	150	29.4	29.4	49.9
	Neutral	110	21.5	21.5	71.4
	agree	102	20.0	20.0	91.4
	strongly agree	44	8.6	8.6	100.0
	Total	511	100.0	100.0	



4. Personal motivations 4

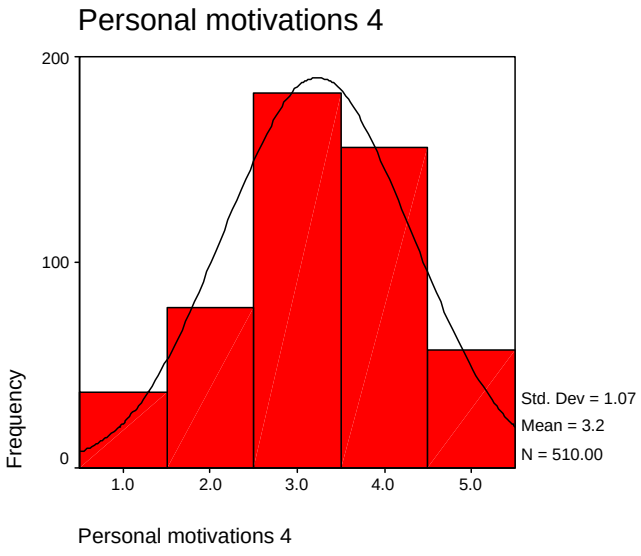
Statistics

Personal motivations 4

N	Valid	510
	Missing	1

Personal motivations 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	37	7.2	7.3	7.3
	disagree	78	15.3	15.3	22.5
	Neutral	182	35.6	35.7	58.2
	agree	156	30.5	30.6	88.8
	strongly agree	57	11.2	11.2	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



5. Time saving 2

Statistics

Time saving 2

N	Valid	*510*
	Missing	*1*

Time saving 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*29*	*5.7*	*5.7*	*5.7*
	disagree	*61*	*11.9*	*12.0*	*17.6*
	Neutral	*118*	*23.1*	*23.1*	*40.8*
	agree	*196*	*38.4*	*38.4*	*79.2*
	strongly agree	*106*	*20.7*	*20.8*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		

6. Rationality 2

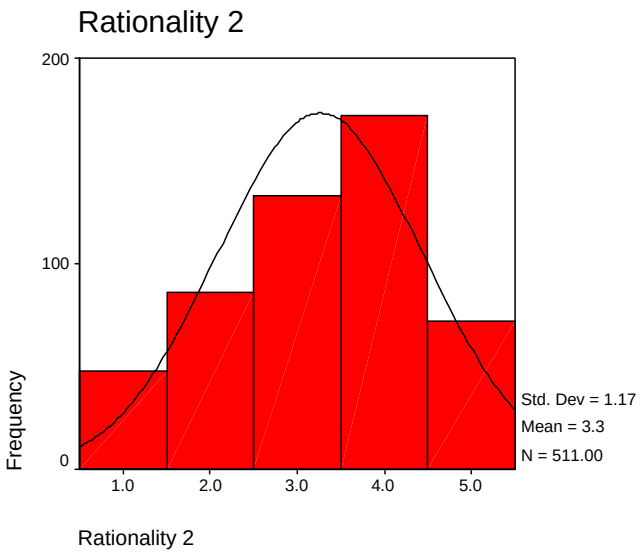
Statistics

Rationality 2

N	Valid	511
	Missing	0

Rationality 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	48	9.4	9.4	9.4
	disagree	86	16.8	16.8	26.2
	Neutral	133	26.0	26.0	52.3
	agree	172	33.7	33.7	85.9
	strongly agree	72	14.1	14.1	100.0
	Total	511	100.0	100.0	



7. Failure Response 6

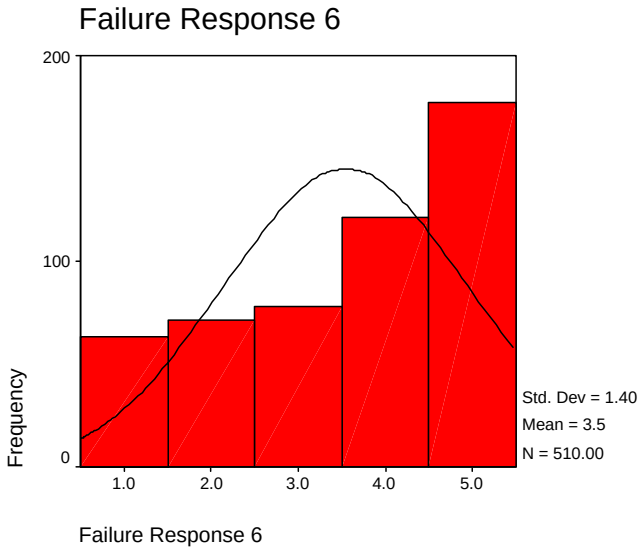
Statistics

Failure Response 6

N	Valid	510
	Missing	1

Failure Response 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	63	12.3	12.4	12.4
	disagree	71	13.9	13.9	26.3
	Neutral	78	15.3	15.3	41.6
	agree	121	23.7	23.7	65.3
	strongly agree	177	34.6	34.7	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



8. Design 15

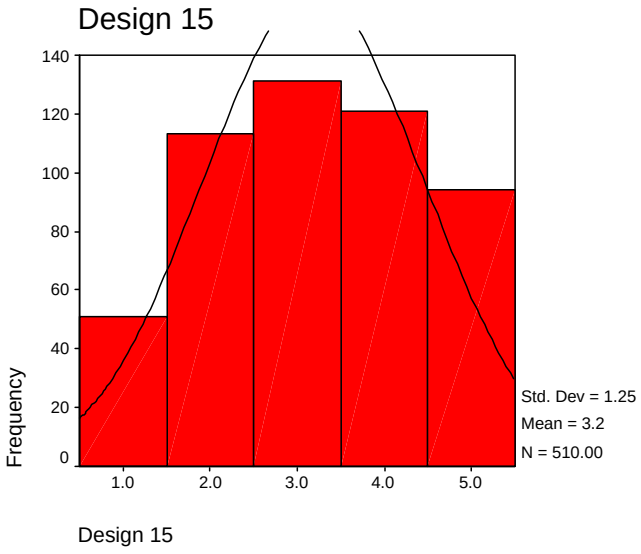
Statistics

Design 15

N	Valid	*510*
	Missing	*1*

Design 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*51*	*10.0*	*10.0*	*10.0*
	disagree	*113*	*22.1*	*22.2*	*32.2*
	Neutral	*131*	*25.6*	*25.7*	*57.8*
	agree	*121*	*23.7*	*23.7*	*81.6*
	strongly agree	*94*	*18.4*	*18.4*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		



9. Change Resistance 2

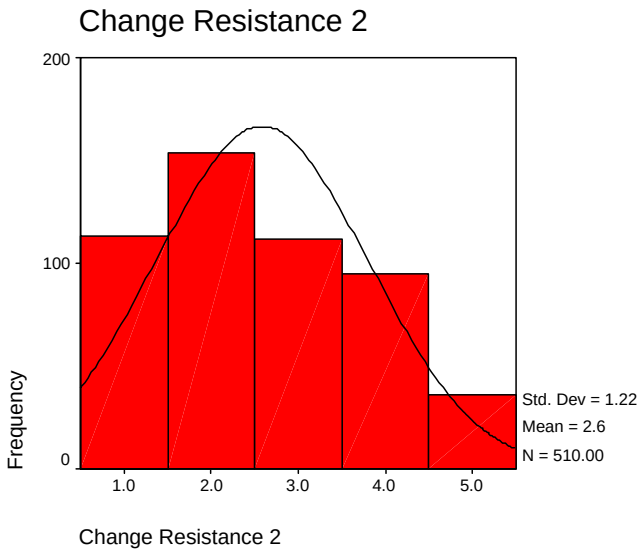
Statistics

Change Resistance 2

N	Valid	510
	Missing	1

Change Resistance 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	113	22.1	22.2	22.2
	disagree	154	30.1	30.2	52.4
	Neutral	112	21.9	22.0	74.3
	agree	95	18.6	18.6	92.9
	strongly agree	36	7.0	7.1	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



10. Technological Dependency 9

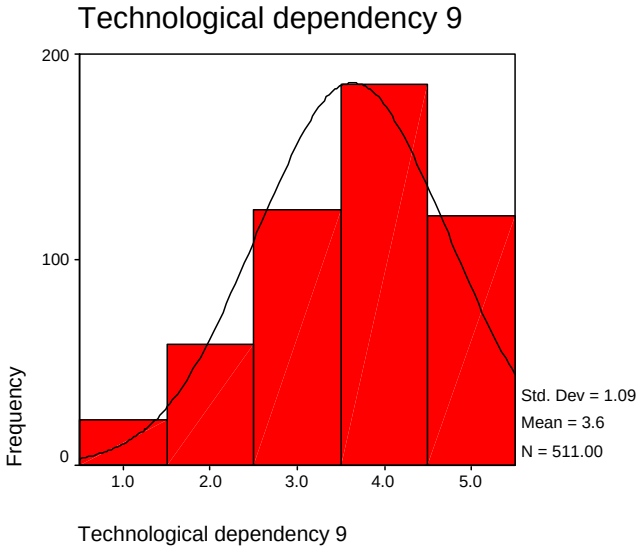
Statistics

Technological dependency 9

N	Valid	511
	Missing	0

Technological dependency 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	22	4.3	4.3	4.3
	disagree	59	11.5	11.5	15.9
	Neutral	124	24.3	24.3	40.1
	agree	185	36.2	36.2	76.3
	strongly agree	121	23.7	23.7	100.0
	Total	511	100.0	100.0	



11. Convenience 7

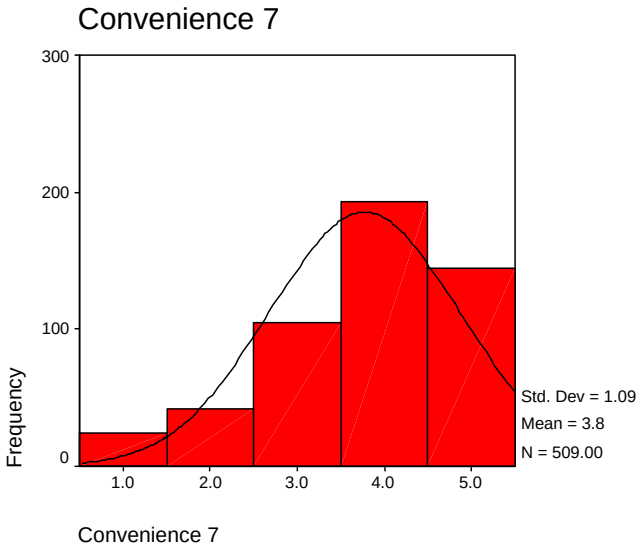
Statistics

Convenience 7

N	Valid	509
	Missing	2

Convenience 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	24	4.7	4.7	4.7
	disagree	42	8.2	8.3	13.0
	Neutral	105	20.5	20.6	33.6
	agree	193	37.8	37.9	71.5
	strongly agree	145	28.4	28.5	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



12. Personal Motivations 3

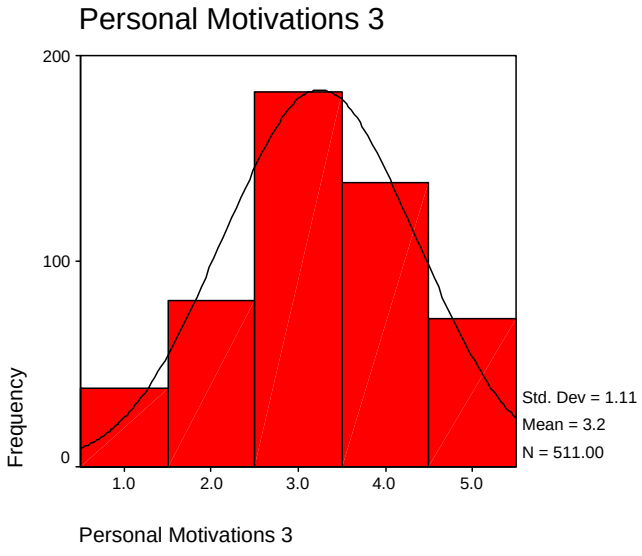
Statistics

Personal Motivations 3

N	Valid	*511*
	Missing	*0*

Personal Motivations 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*38*	*7.4*	*7.4*	*7.4*
	disagree	*81*	*15.9*	*15.9*	*23.3*
	Neutral	*182*	*35.6*	*35.6*	*58.9*
	agree	*138*	*27.0*	*27.0*	*85.9*
	strongly agree	*72*	*14.1*	*14.1*	*100.0*
	Total	*511*	*100.0*	*100.0*	



13. Human Interaction 4

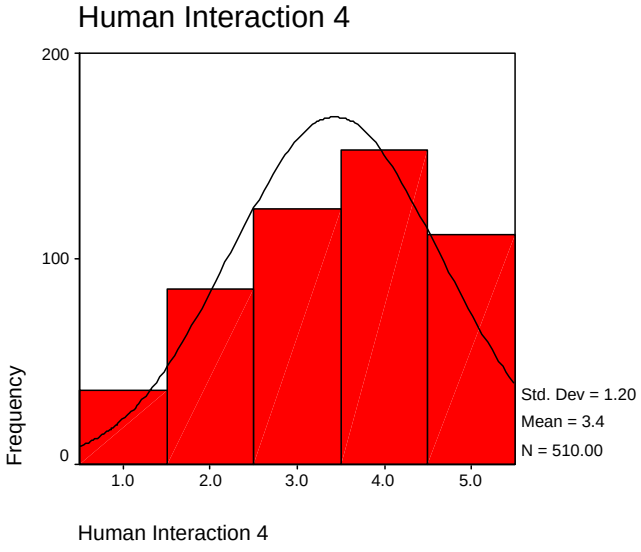
Statistics

Human Interaction 4

N	Valid	510
	Missing	1

Human Interaction 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	36	7.0	7.1	7.1
	disagree	85	16.6	16.7	23.7
	Neutral	124	24.3	24.3	48.0
	agree	153	29.9	30.0	78.0
	strongly agree	112	21.9	22.0	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



14. Human Interaction 6

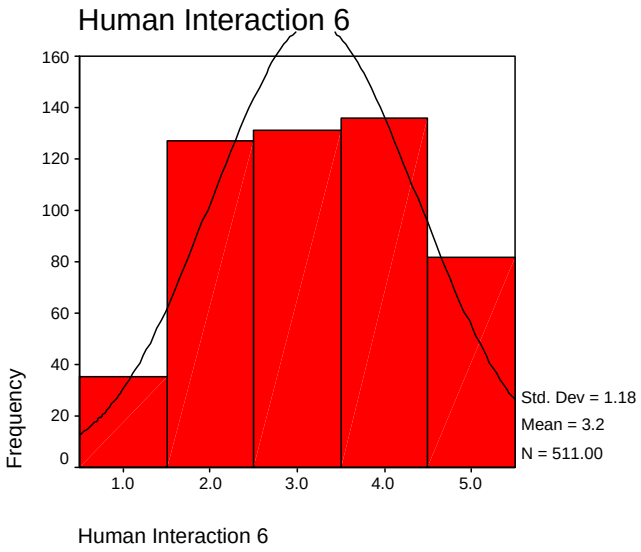
Statistics

Human Interaction 6

N	Valid	511
	Missing	0

Human Interaction 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	35	6.8	6.8	6.8
	disagree	127	24.9	24.9	31.7
	Neutral	131	25.6	25.6	57.3
	agree	136	26.6	26.6	84.0
	strongly agree	82	16.0	16.0	100.0
	Total	511	100.0	100.0	



15. Technological Dependency 11

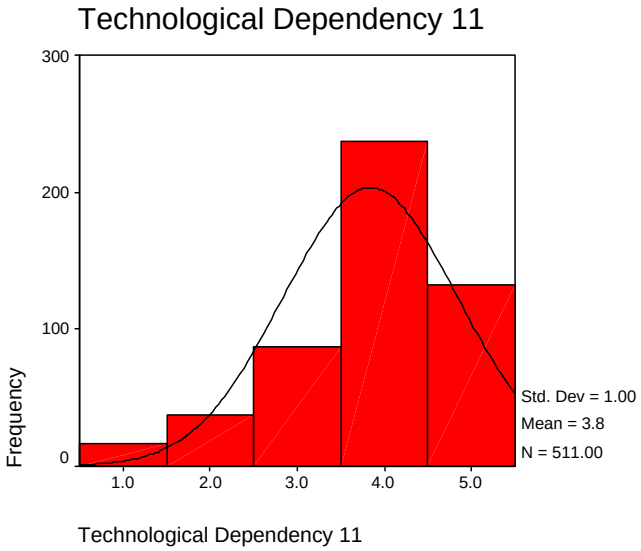
Statistics

Technological Dependency 11

N	Valid	*511*
	Missing	*0*

Technological Dependency 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*17*	*3.3*	*3.3*	*3.3*
	disagree	*38*	*7.4*	*7.4*	*10.8*
	Neutral	*87*	*17.0*	*17.0*	*27.8*
	agree	*237*	*46.4*	*46.4*	*74.2*
	strongly agree	*132*	*25.8*	*25.8*	*100.0*
	Total	*511*	*100.0*	*100.0*	



16. Convenience 8

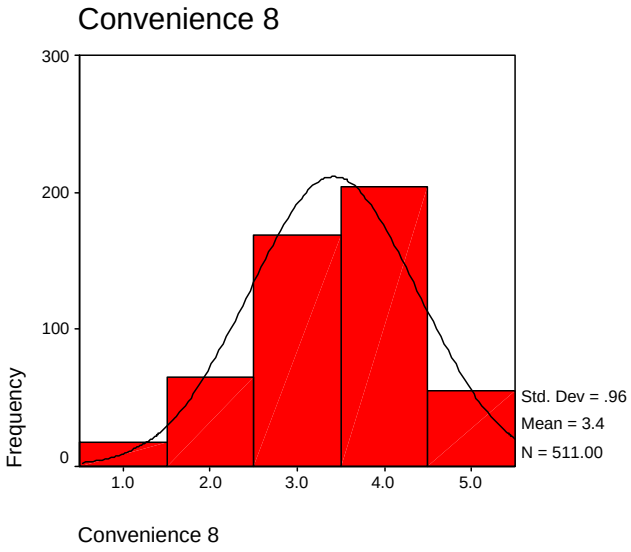
Statistics

Convenience 8

N	Valid	*511*
	Missing	*0*

Convenience 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*18*	*3.5*	*3.5*	*3.5*
	disagree	*65*	*12.7*	*12.7*	*16.2*
	Neutral	*169*	*33.1*	*33.1*	*49.3*
	agree	*204*	*39.9*	*39.9*	*89.2*
	strongly agree	*55*	*10.8*	*10.8*	*100.0*
	Total	*511*	*100.0*	*100.0*	



17. Time Saving 4

Statistics

Time Saving 4

N	Valid	508
	Missing	3

Time Saving 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	15	2.9	3.0	3.0
	disagree	68	13.3	13.4	16.3
	Neutral	92	18.0	18.1	34.4
	agree	230	45.0	45.3	79.7
	strongly agree	103	20.2	20.3	100.0
	Total	508	99.4	100.0	
Missing	System	3	.6		
Total		511	100.0		

18. Efficiency 5

Statistics

Efficiency 5

N	Valid	510
	Missing	1

Efficiency 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	41	8.0	8.0	8.0
	disagree	122	23.9	23.9	32.0
	Neutral	120	23.5	23.5	55.5
	agree	140	27.4	27.5	82.9
	strongly agree	87	17.0	17.1	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		

19. Time Saving 6

Statistics

Time Saving 6

N	Valid	*511*
	Missing	*0*

Time Saving 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*10*	*2.0*	*2.0*	*2.0*
	disagree	*40*	*7.8*	*7.8*	*9.8*
	Neutral	*71*	*13.9*	*13.9*	*23.7*
	agree	*237*	*46.4*	*46.4*	*70.1*
	strongly agree	*153*	*29.9*	*29.9*	*100.0*
	Total	*511*	*100.0*	*100.0*	

20. Comfort 3

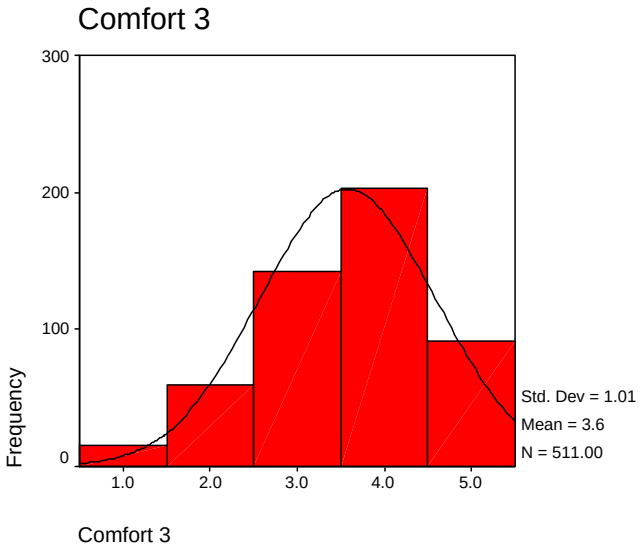
Statistics

Comfort 3

N	Valid	511
	Missing	0

Comfort 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	15	2.9	2.9	2.9
	disagree	60	11.7	11.7	14.7
	Neutral	142	27.8	27.8	42.5
	agree	203	39.7	39.7	82.2
	strongly agree	91	17.8	17.8	100.0
	Total	511	100.0	100.0	



21. Failure Response 2

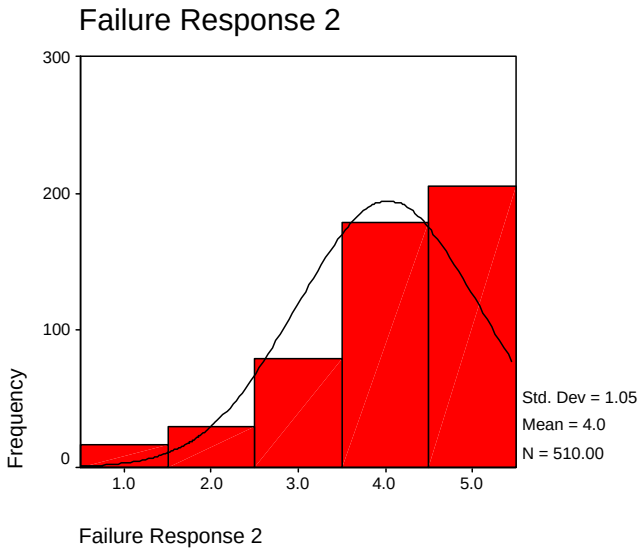
Statistics

Failure Response 2

N	Valid	510
	Missing	1

Failure Response 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	3.3	3.3	3.3
	disagree	30	5.9	5.9	9.2
	Neutral	79	15.5	15.5	24.7
	agree	179	35.0	35.1	59.8
	strongly agree	205	40.1	40.2	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



22. Rationality 3

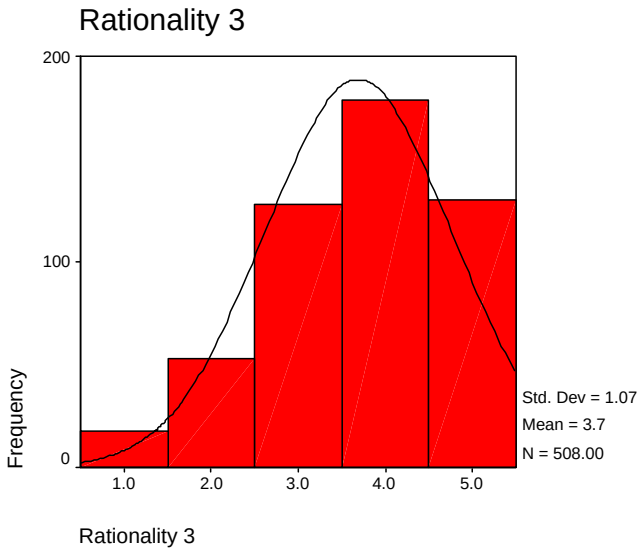
Statistics

Rationality 3

N	Valid	508
	Missing	3

Rationality 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	18	3.5	3.5	3.5
	disagree	53	10.4	10.4	14.0
	Neutral	128	25.0	25.2	39.2
	agree	179	35.0	35.2	74.4
	strongly agree	130	25.4	25.6	100.0
	Total	508	99.4	100.0	
Missing	System	3	.6		
Total		511	100.0		



23. Design 2

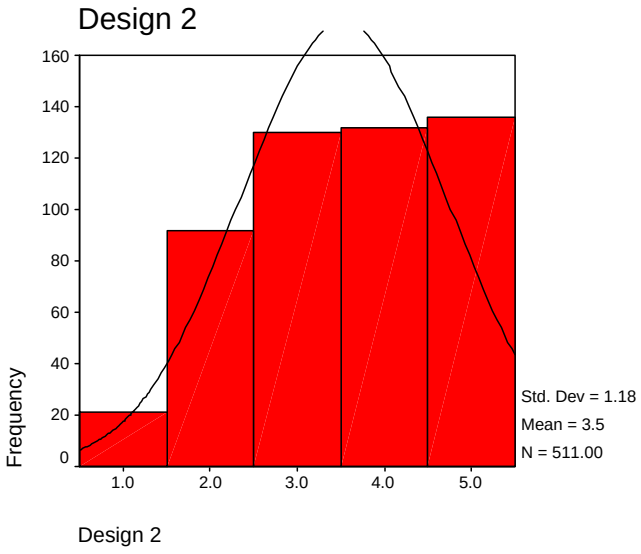
Statistics

Design 2

N	Valid	511
	Missing	0

Design 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	21	4.1	4.1	4.1
	disagree	92	18.0	18.0	22.1
	Neutral	130	25.4	25.4	47.6
	agree	132	25.8	25.8	73.4
	strongly agree	136	26.6	26.6	100.0
	Total	511	100.0	100.0	



24. Technological Dependency 13

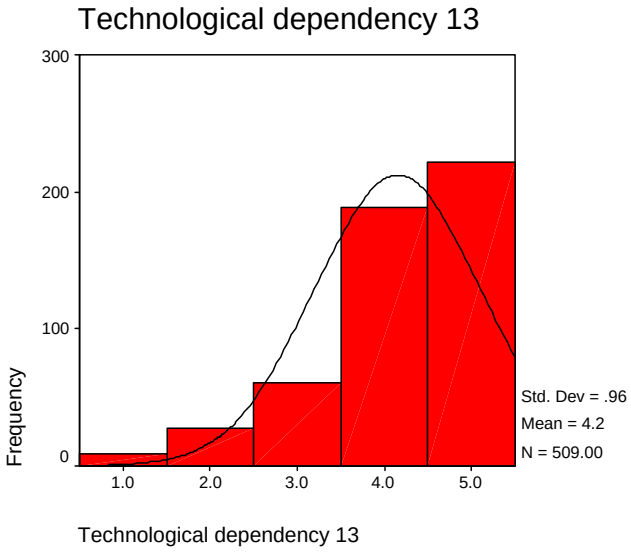
Statistics

Technological dependency 13

N	Valid	*509*
	Missing	*2*

Technological dependency 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*9*	*1.8*	*1.8*	*1.8*
	disagree	*28*	*5.5*	*5.5*	*7.3*
	Neutral	*61*	*11.9*	*12.0*	*19.3*
	agree	*189*	*37.0*	*37.1*	*56.4*
	strongly agree	*222*	*43.4*	*43.6*	*100.0*
	Total	*509*	*99.6*	*100.0*	
Missing	System	*2*	*.4*		
Total		*511*	*100.0*		



25. Safety 16

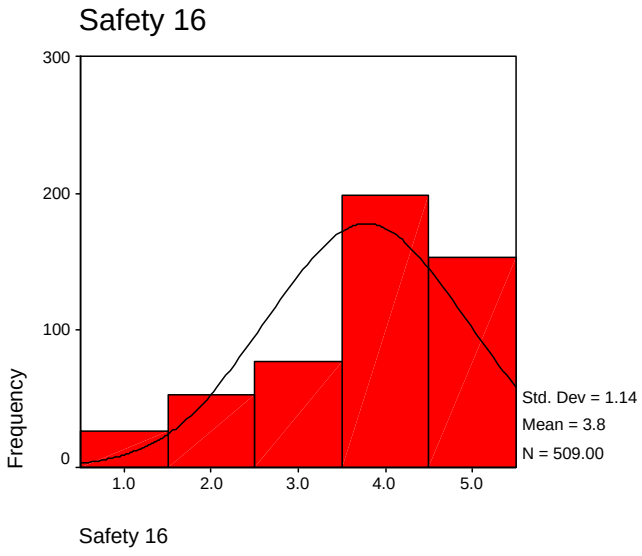
Statistics

Safety 16

N	Valid	509
	Missing	2

Safety 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	27	5.3	5.3	5.3
	disagree	53	10.4	10.4	15.7
	Neutral	77	15.1	15.1	30.8
	agree	199	38.9	39.1	69.9
	strongly agree	153	29.9	30.1	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



26. Safety 18

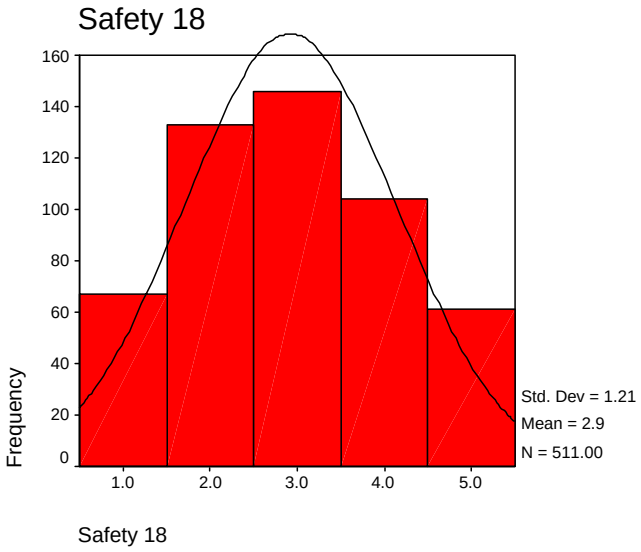
Statistics

Safety 18

N	Valid	*511*
	Missing	*0*

Safety 18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*67*	*13.1*	*13.1*	*13.1*
	disagree	*133*	*26.0*	*26.0*	*39.1*
	Neutral	*146*	*28.6*	*28.6*	*67.7*
	agree	*104*	*20.4*	*20.4*	*88.1*
	strongly agree	*61*	*11.9*	*11.9*	*100.0*
	Total	*511*	*100.0*	*100.0*	



27. Design 14

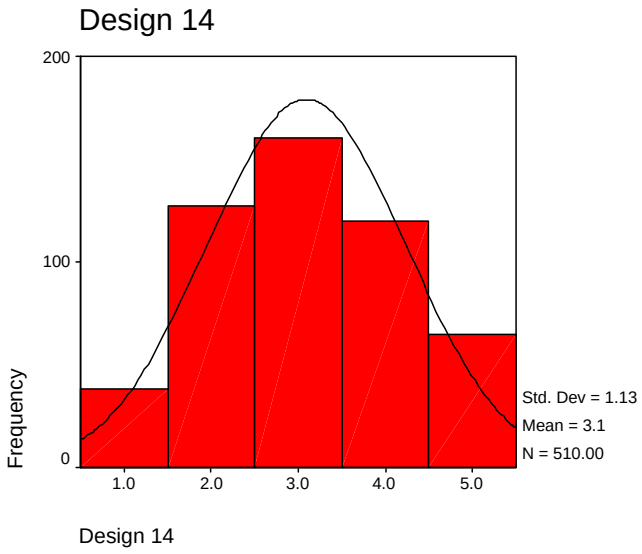
Statistics

Design 14

N	Valid	*510*
	Missing	*1*

Design 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*38*	*7.4*	*7.5*	*7.5*
	disagree	*127*	*24.9*	*24.9*	*32.4*
	Neutral	*160*	*31.3*	*31.4*	*63.7*
	agree	*120*	*23.5*	*23.5*	*87.3*
	strongly agree	*65*	*12.7*	*12.7*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		



28. Change Resistance 14

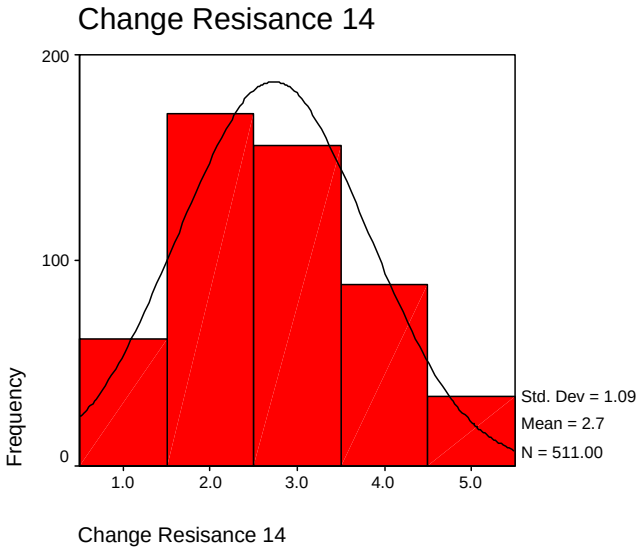
Statistics

Change Resisance 14

N	Valid	*511*
	Missing	*0*

Change Resisance 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*62*	*12.1*	*12.1*	*12.1*
	disagree	*171*	*33.5*	*33.5*	*45.6*
	Neutral	*156*	*30.5*	*30.5*	*76.1*
	agree	*88*	*17.2*	*17.2*	*93.3*
	strongly agree	*34*	*6.7*	*6.7*	*100.0*
	Total	*511*	*100.0*	*100.0*	



29. Efficiency 11

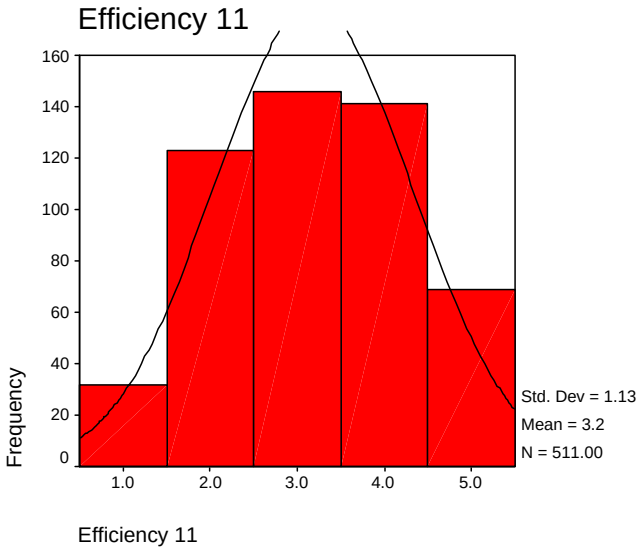
Statistics

Efficiency 11

N	Valid	511
	Missing	0

Efficiency 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	32	6.3	6.3	6.3
	disagree	123	24.1	24.1	30.3
	Neutral	146	28.6	28.6	58.9
	agree	141	27.6	27.6	86.5
	strongly agree	69	13.5	13.5	100.0
	Total	511	100.0	100.0	



30. Failure Response 1

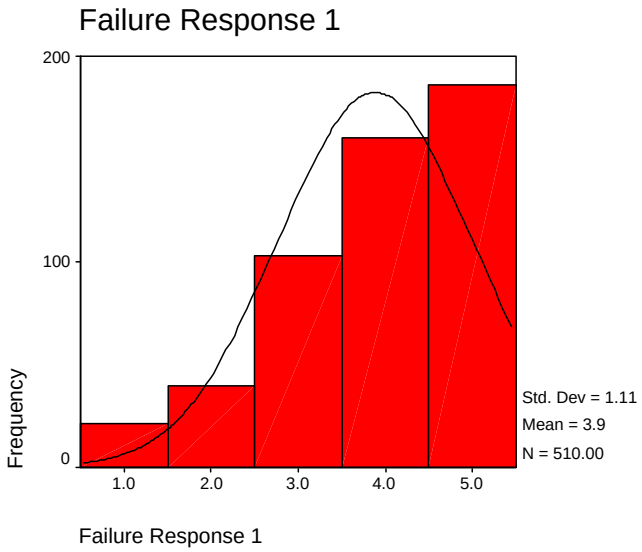
Statistics

Failure Response 1

N	Valid	510
	Missing	1

Failure Response 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	21	4.1	4.1	4.1
	disagree	40	7.8	7.8	12.0
	Neutral	103	20.2	20.2	32.2
	agree	160	31.3	31.4	63.5
	strongly agree	186	36.4	36.5	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



31. Safety 17

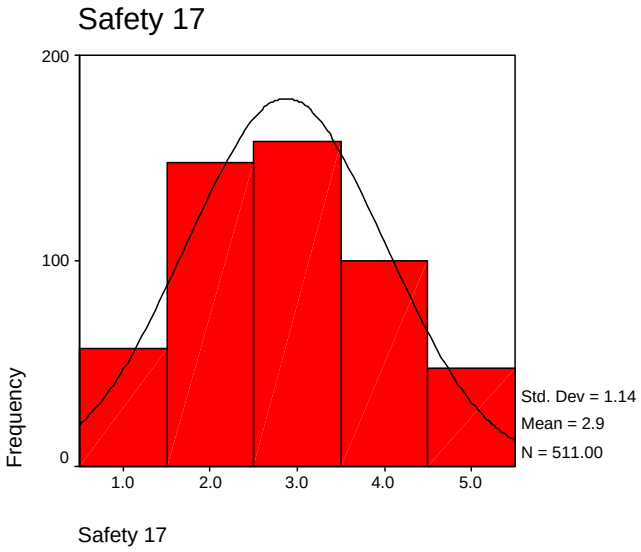
Statistics

Safety 17

N	Valid	511
	Missing	0

Safety 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	57	11.2	11.2	11.2
	disagree	148	29.0	29.0	40.1
	Neutral	158	30.9	30.9	71.0
	agree	100	19.6	19.6	90.6
	strongly agree	48	9.4	9.4	100.0
	Total	511	100.0	100.0	



32. Change Resistance 12

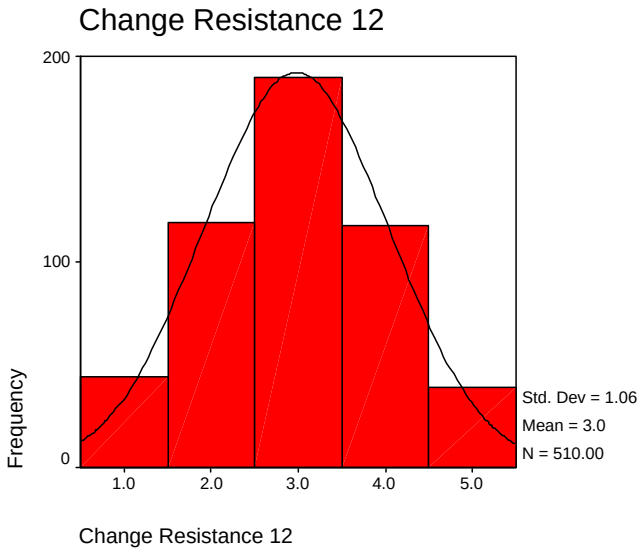
Statistics

Change Resistance 12

N	Valid	*510*
	Missing	*1*

Change Resistance 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	*44*	*8.6*	*8.6*	*8.6*
	disagree	*119*	*23.3*	*23.3*	*32.0*
	Neutral	*190*	*37.2*	*37.3*	*69.2*
	agree	*118*	*23.1*	*23.1*	*92.4*
	strongly agree	*39*	*7.6*	*7.6*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		



33. Personal Motivations 5

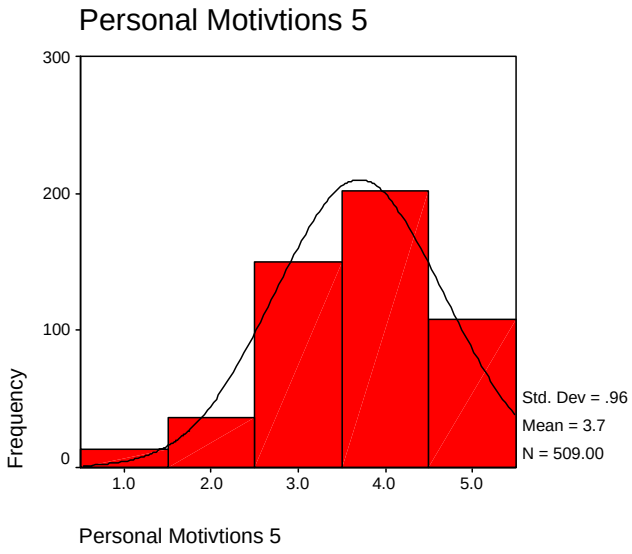
Statistics

Personal Motivtions 5

N	Valid	509
	Missing	2

Personal Motivtions 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	13	2.5	2.6	2.6
	disagree	36	7.0	7.1	9.6
	Neutral	150	29.4	29.5	39.1
	agree	202	39.5	39.7	78.8
	strongly agree	108	21.1	21.2	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



How did you evaluate your general experience with self service technologies?

Statistics

How did you evaluate your general experience with self service technologies?

N	Valid	510
	Missing	1

How did you evaluate your general experience with self service technologies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less satisfaction than I expected	48	9.4	9.4	9.4
	the level of satisfaction than I expected	387	75.7	75.9	85.3
	more satisfaction than I expected	75	14.7	14.7	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		

Overall, how favorable did you feel about using self service technologies instead of personal services?

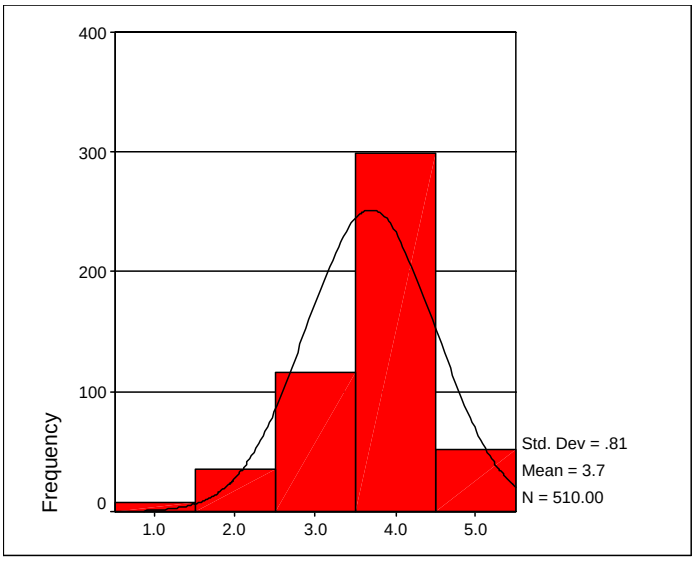
Statistics

Overall, how favorable did you feel about using self service technologies instead of personal services?

N	Valid	510
	Missing	1

Overall, how favorable did you feel about using self service technologies instead of personal services?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Definitely not going to use them	8	1.6	1.6	1.6
	Maybe I'm Not going to use them	35	6.8	6.9	8.4
	Neutral	116	22.7	22.7	31.2
	Maybe I'm Going to use them	299	58.5	58.6	89.8
	Definitely going to use them	52	10.2	10.2	100.0
	Total	510	99.8	100.0	
Missing	System	1	.2		
Total		511	100.0		



Age

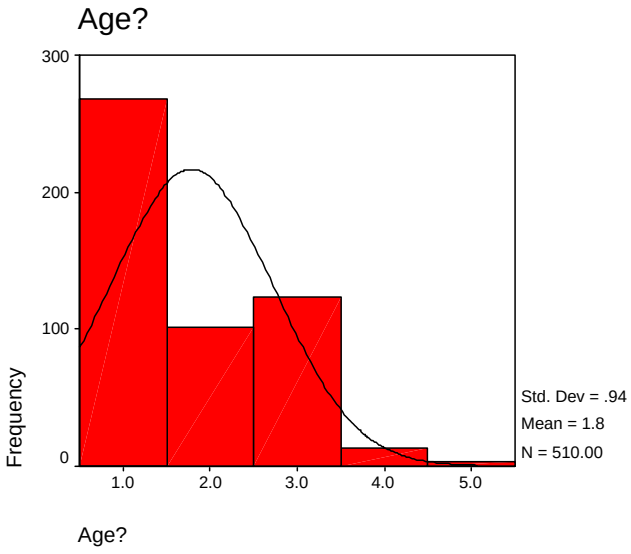
Statistics

Age?

N	Valid	*510*
	Missing	*1*

Age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	*268*	*52.4*	*52.5*	*52.5*
	25 to 40	*102*	*20.0*	*20.0*	*72.5*
	41 to 55	*124*	*24.3*	*24.3*	*96.9*
	56 to 70	*13*	*2.5*	*2.5*	*99.4*
	More than 70	*3*	*.6*	*.6*	*100.0*
	Total	*510*	*99.8*	*100.0*	
Missing	System	*1*	*.2*		
Total		*511*	*100.0*		



Gender

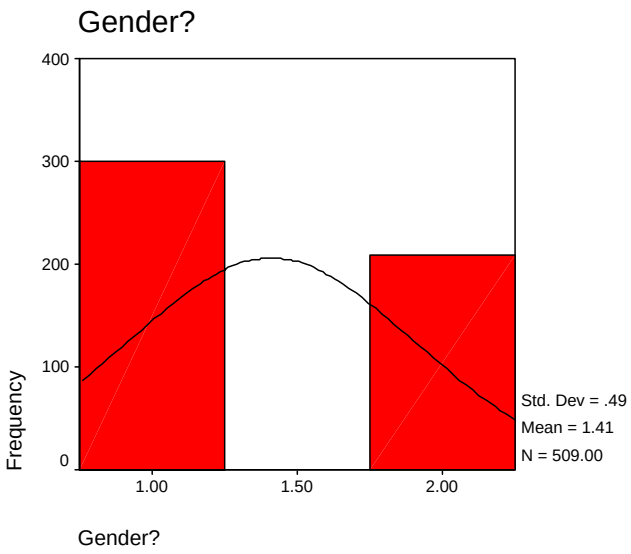
Statistics

Gender?

N	Valid	509
	Missing	2

Gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	300	58.7	58.9	58.9
	Male	209	40.9	41.1	100.0
	Total	509	99.6	100.0	
Missing	System	2	.4		
Total		511	100.0		



School Level

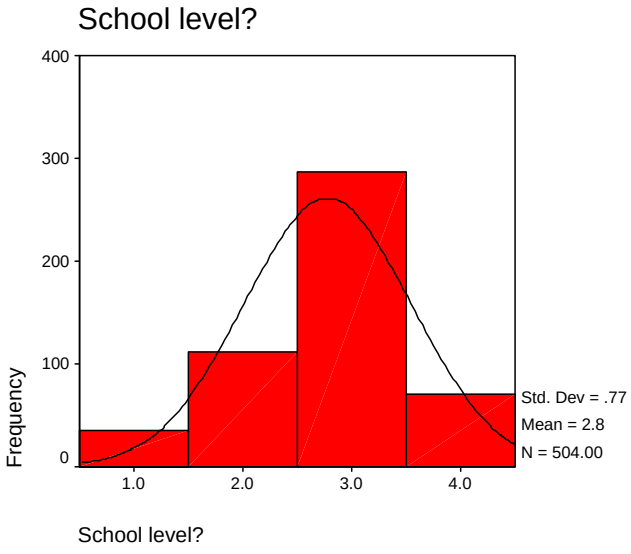
Statistics

School level?

N	Valid	504
	Missing	7

School level?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school or less	35	6.8	6.9	6.9
	Some college	112	21.9	22.2	29.2
	College graduate	287	56.2	56.9	86.1
	Graduate school	70	13.7	13.9	100.0
	Total	504	98.6	100.0	
Missing	System	7	1.4		
Total		511	100.0		



Average month family income

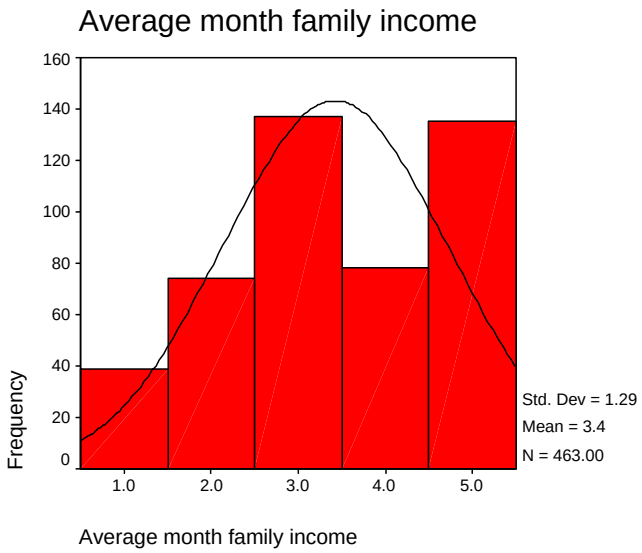
Statistics

Average month family income

N	Valid	*463*
	Missing	*48*

Average month family income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than $5000	*39*	*7.6*	*8.4*	*8.4*
	$5000 to $10000	*74*	*14.5*	*16.0*	*24.4*
	$10000 to $20000	*137*	*26.8*	*29.6*	*54.0*
	$20000 to $30000	*78*	*15.3*	*16.8*	*70.8*
	More than $30000	*135*	*26.4*	*29.2*	*100.0*
	Total	*463*	*90.6*	*100.0*	
Missing	System	*48*	*9.4*		
Total		*511*	*100.0*		



Normality Tests

First Items

One-Sample Kolmogorov-Smirnov Test

		Human Interaction	Rationality	Change Resistance	Comfort	Time Saving	Technological Dependecy	Convenience	Failure Response	Safety	Design	Novelty
N		509	510	508	509	510	504	511	509	507	510	511
Normal Parameters[a,b]	Mean	3.42	2.92	2.30	1.72	1.60	2.21	1.80	3.50	2.61	2.17	2.24
	Std. Deviation	1.40	1.43	1.32	1.16	1.09	1.36	1.14	1.37	1.26	1.16	1.28
Most Extreme Differences	Absolute	.201	.145	.213	.357	.389	.258	.307	.184	.157	.218	.224
	Positive	.139	.145	.213	.357	.389	.258	.307	.136	.157	.218	.224
	Negative	-.201	-.137	-.163	-.268	-.291	-.187	-.241	-.184	-.150	-.157	-.166
Kolmogorov-Smirnov Z		4.525	3.270	4.802	8.059	8.788	5.784	6.942	4.160	3.544	4.918	5.070
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

Second Items

One-Sample Kolmogorov-Smirnov Test

		Ubiquity 5	Comfort 2	Human Interaction 2	Personal motivations 4	Time saving 2	Rationality 2	Failure Response 6	Design 15	Change Resistance 2	Technological dependency 9	Convenience 7
N		508	509	511	510	510	511	510	510	510	511	509
Normal Parameters[a,b]	Mean	3.09	3.63	2.67	3.23	3.57	3.26	3.55	3.18	2.58	3.63	3.77
	Std. Deviation	1.24	1.28	1.25	1.07	1.12	1.17	1.40	1.25	1.22	1.09	1.09
Most Extreme Differences	Absolute	.195	.237	.203	.189	.243	.213	.212	.164	.207	.230	.247
	Positive	.116	.142	.203	.168	.141	.124	.150	.150	.207	.132	.133
	Negative	-.195	-.237	-.143	-.189	-.243	-.213	-.212	-.164	-.134	-.230	-.247
Kolmogorov-Smirnov Z		4.388	5.347	4.587	4.266	5.495	4.807	4.777	3.712	4.678	5.195	5.563
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

One-Sample Kolmogorov-Smirnov Test

		Personal Motivations 3	Human Interaction 4	Human Interaction 6	Technological Dependency 11	Convenience 8	Time Saving 4	Efficiency 5	Time Saving 6	Comfort 3	Failure Response 2	Rationality 3
N		511	510	511	511	511	508	510	511	511	510	508
Normal Parameters[a,b]	Mean	3.24	3.43	3.20	3.84	3.42	3.67	3.22	3.95	3.58	4.03	3.69
	Std. Deviation	1.11	1.20	1.18	1.00	.96	1.04	1.21	.96	1.01	1.05	1.07
Most Extreme Differences	Absolute	.180	.202	.177	.286	.235	.282	.186	.286	.238	.242	.222
	Positive	.176	.121	.163	.178	.165	.171	.161	.178	.159	.177	.131
	Negative	-.180	-.202	-.177	-.286	-.235	-.282	-.186	-.286	-.238	-.242	-.222
Kolmogorov-Smirnov Z		4.067	4.552	4.007	6.461	5.303	6.357	4.200	6.463	5.382	5.459	5.012
Asymp. Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

a. Test distribution is Normal.

b. Calculated from data.

One-Sample Kolmogorov-Smirnov Test

		Design 2	Technological dependency 13	Safety 16	Safety 18	Design 14	Change Resisance 14	Efficiency 11	Failure Response 1	Safety 17	Change Resistance 12	Personal Motivtions 5
N		*511*	*509*	*509*	*511*	*510*	*511*	*511*	*510*	*511*	*510*	*509*
Normal Parameters[a,b]	**Mean**	*3.53*	*4.15*	*3.78*	*2.92*	*3.09*	*2.73*	*3.18*	*3.88*	*2.87*	*2.98*	*3.70*
	Std. Deviation	*1.18*	*.96*	*1.14*	*1.21*	*1.13*	*1.09*	*1.13*	*1.11*	*1.14*	*1.06*	*.96*
Most Extreme Differences	**Absolute**	*.180*	*.248*	*.267*	*.168*	*.170*	*.204*	*.177*	*.221*	*.179*	*.189*	*.231*
	Positive	*.148*	*.188*	*.143*	*.168*	*.170*	*.204*	*.155*	*.158*	*.179*	*.184*	*.166*
	Negative	*-.180*	*-.248*	*-.267*	*-.137*	*-.151*	*-.143*	*-.177*	*-.221*	*-.144*	*-.189*	*-.231*
Kolmogorov-Smirnov Z		*4.066*	*5.603*	*6.032*	*3.797*	*3.831*	*4.611*	*3.999*	*4.980*	*4.053*	*4.258*	*5.219*
Asymp. Sig. (2-tailed)		*.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*	*.000*

a. Test distribution is Normal.

b. Calculated from data.

Hypothesis Testing

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Human interaction * Overall, how favorable did you fe about using self service technologies instead of personal services?	508	99.4%	3	.6%	511	100.0%
Rationality * Overall, how favorable did you feel abou using self service technologies instead of personal services?	509	99.6%	2	.4%	511	100.0%
Change Resistance * Overall, how favorable did you fe about using self service technologies instead of personal services?	507	99.2%	4	.8%	511	100.0%
Comfort * Overall, how favorable did you feel about using self service technologies instead of personal services?	508	99.4%	3	.6%	511	100.0%
Time Saving * Overall, how favorable did you feel abo using self service technologies instead of personal services?	509	99.6%	2	.4%	511	100.0%
Technological Dependecy * Overall, how favorable did you feel about using self service technologies instead of personal services?	503	98.4%	8	1.6%	511	100.0%
Convenience * Overall, how favorable did you feel abo using self service technologies instead of personal services?	510	99.8%	1	.2%	511	100.0%
Failure Response * Overall, how favorable did you feel about using self service technologies instead of personal services?	508	99.4%	3	.6%	511	100.0%
Safety * Overall, how favorable did you feel about usin self service technologies instead of personal services?	506	99.0%	5	1.0%	511	100.0%
Design * Overall, how favorable did you feel about usi self service technologies instead of personal services?	509	99.6%	2	.4%	511	100.0%
Novelty * Overall, how favorable did you feel about us self service technologies instead of personal services?	510	99.8%	1	.2%	511	100.0%

Crosstab

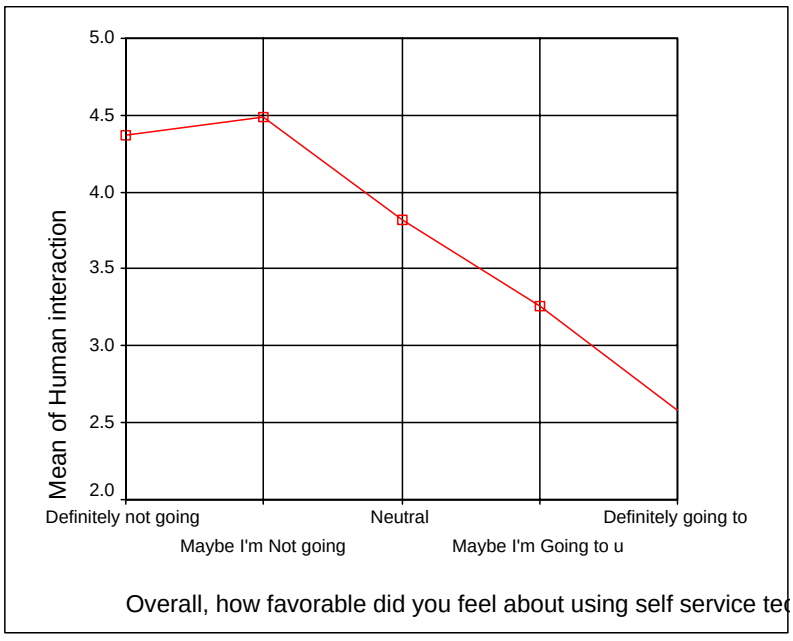
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Human interaction	definitely prefer human		1	7	39	22	69
	prefer human		1	8	44	6	59
	neutral	2	3	27	96	9	137
	prefer SST's	1	5	28	40	2	76
	definitely prefer SST's	5	25	44	80	13	167
Total		8	35	114	299	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	93.074[a]	16	.000
Continuity Correction			
Likelihood Ratio	85.636	16	.000
Linear-by-Linear Association	54.612	1	.000
N of Valid Cases	508		

a. 7 cells (28.0%) have expected count less than 5. The minimum expected count is .93.



Crosstab

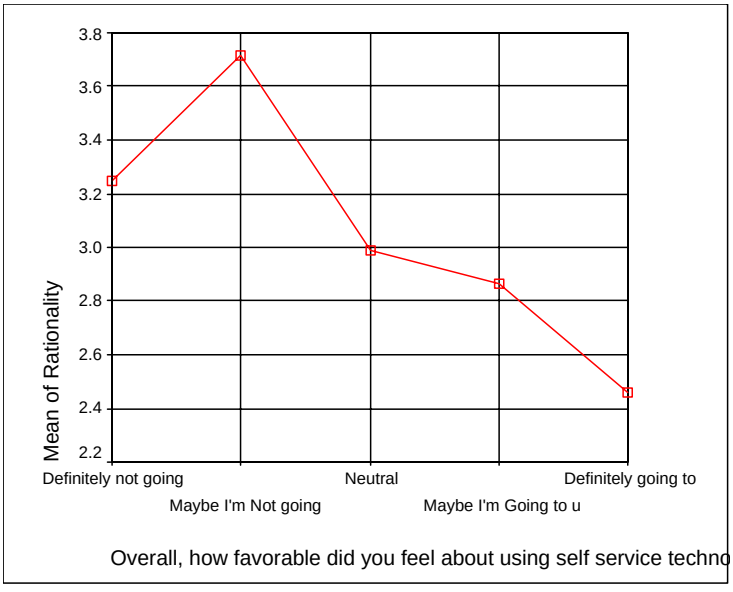
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Rationality	definitely help to buy rational	2	5	19	69	24	119
	help to buy rational		2	21	51	5	79
	neutral	3	7	39	84	9	142
	don't help to buy rational		5	14	41	3	63
	definitely don't help to buy rational	3	16	22	54	11	106
Total		8	35	115	299	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.431[a]	16	.000
Continuity Correction			
Likelihood Ratio	40.303	16	.001
Linear-by-Linear Association	13.624	1	.000
N of Valid Cases	509		

a. 6 cells (24.0%) have expected count less than 5. The minimum expected count is .99.



Crosstab

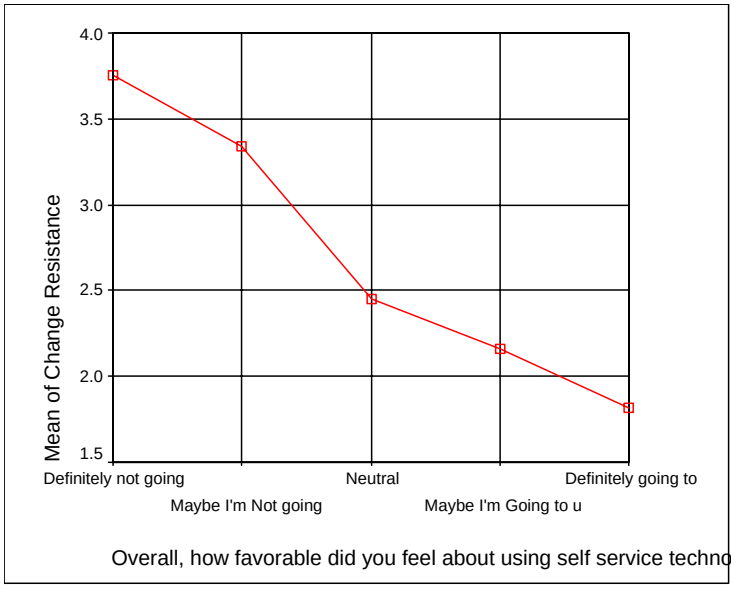
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Change Resistance	definitely are generate interest to use them		8	31	121	31	191
	generate some interest to use them	1	1	32	76	9	119
	neutral	2	9	32	60	3	106
	generate some resistance to use them	3	5	9	18	2	37
	definitely generate resistance to use them	2	12	11	24	5	54
Total		8	35	115	299	50	507

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.112[a]	16	.000
Continuity Correction			
Likelihood Ratio	65.901	16	.000
Linear-by-Linear Association	39.093	1	.000
N of Valid Cases	507		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .58.



Crosstab

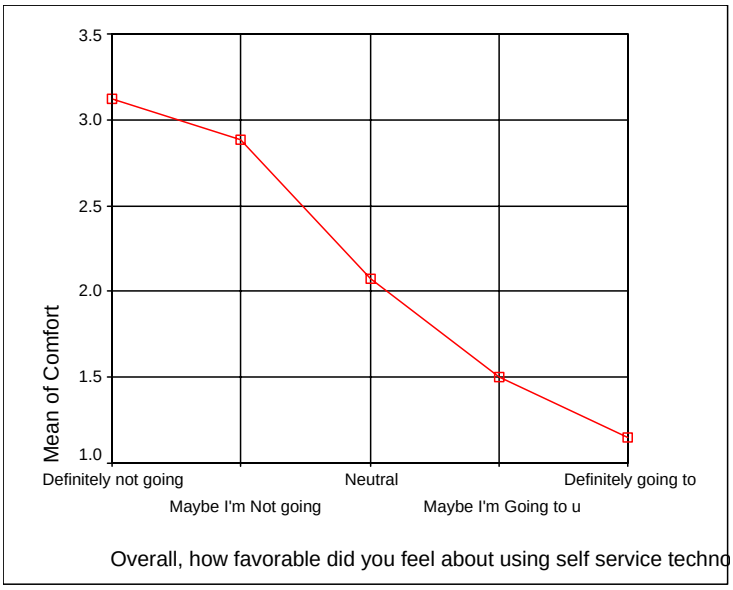
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Comfort	definitely they are more comfortable to use	1	13	55	200	49	318
	they are more comfortable to use	3	4	27	65	1	100
	neutral	1	1	14	21		37
	they are unconfortable to use		8	7	6	1	22
	definitely they are more uncomfortable to use	3	9	12	6	1	31
Total		8	35	115	298	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	122.780[a]	16	.000
Continuity Correction			
Likelihood Ratio	106.080	16	.000
Linear-by-Linear Association	78.339	1	.000
N of Valid Cases	508		

a. 11 cells (44.0%) have expected count less than 5. The minimum expected count is .35.



Crosstab

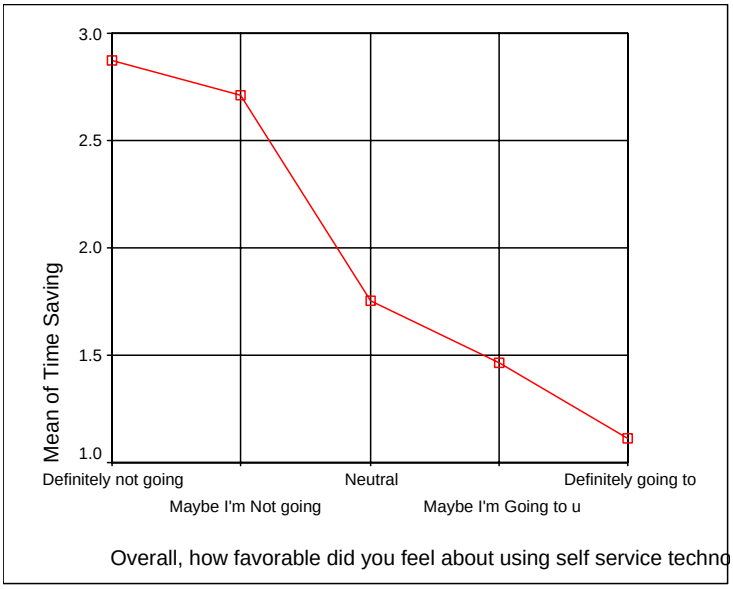
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Time Saving	definitely they save time	2	14	64	217	49	346
	they save time	2	6	29	51	2	90
	neutral	1	2	13	15		31
	they waste time	1	2	4	6		13
	definitely they waste time	2	11	5	10	1	29
Total		8	35	115	299	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	91.036[a]	16	.000
Continuity Correction			
Likelihood Ratio	73.169	16	.000
Linear-by-Linear Association	57.690	1	.000
N of Valid Cases	509		

a. 11 cells (44.0%) have expected count less than 5. The minimum expected count is .20.



Crosstab

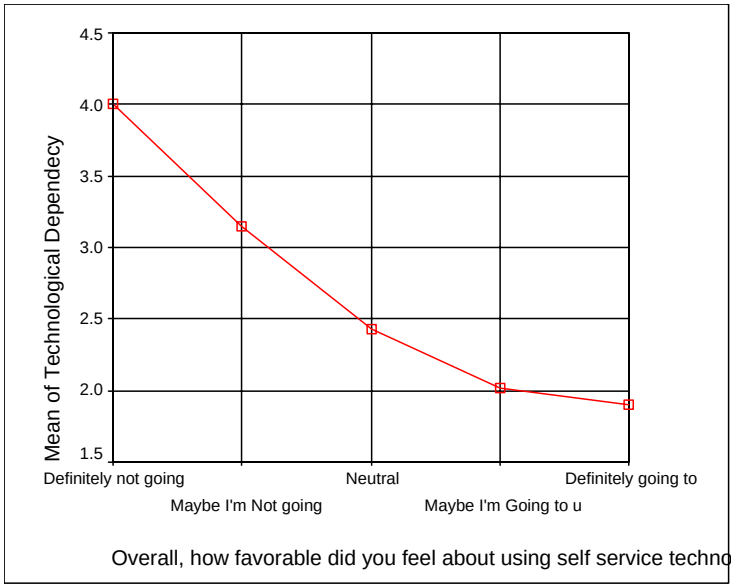
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Technological Dependecy	definitely they let me be independent	1	8	37	145	33	224
	some how they let me be independent		5	21	62	3	91
	neutral	2	7	37	53	6	105
	some how they create dependency		4	6	14	2	26
	definitely they create dependency	5	11	12	23	6	57
Total		8	35	113	297	50	503

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71.139[a]	16	.000
Continuity Correction			
Likelihood Ratio	60.920	16	.000
Linear-by-Linear Association	36.751	1	.000
N of Valid Cases	503		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .41.



Crosstab

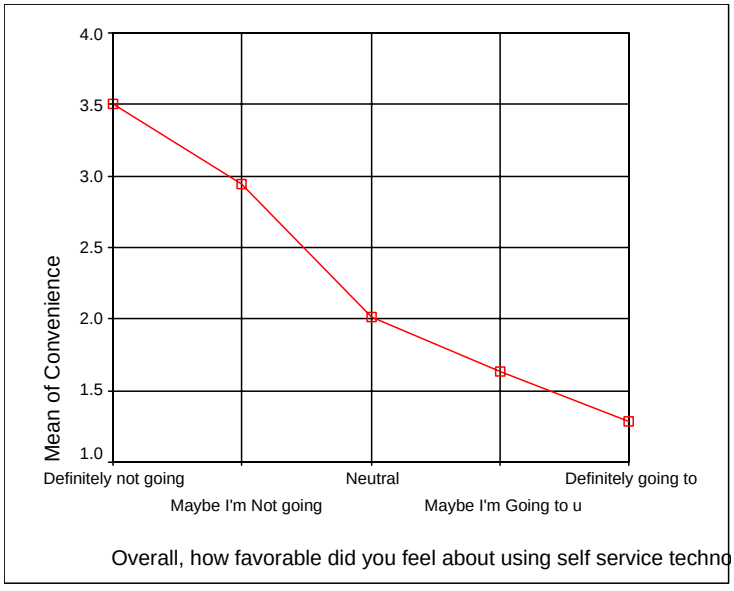
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Convenience	definitely they are convenient to use them	1	9	48	176	45	279
	they are some how convenient to use them	1	9	36	81	4	131
	neutral	2	3	21	27		53
	they are some how inconvenient to use them	1	3	4	5	1	14
	definitely prefer SST's	3	11	7	10	2	33
Total		8	35	116	299	52	510

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	104.664[a]	16	.000
Continuity Correction			
Likelihood Ratio	88.042	16	.000
Linear-by-Linear Association	68.059	1	.000
N of Valid Cases	510		

a. 11 cells (44.0%) have expected count less than 5. The minimum expected count is .22.



Crosstab

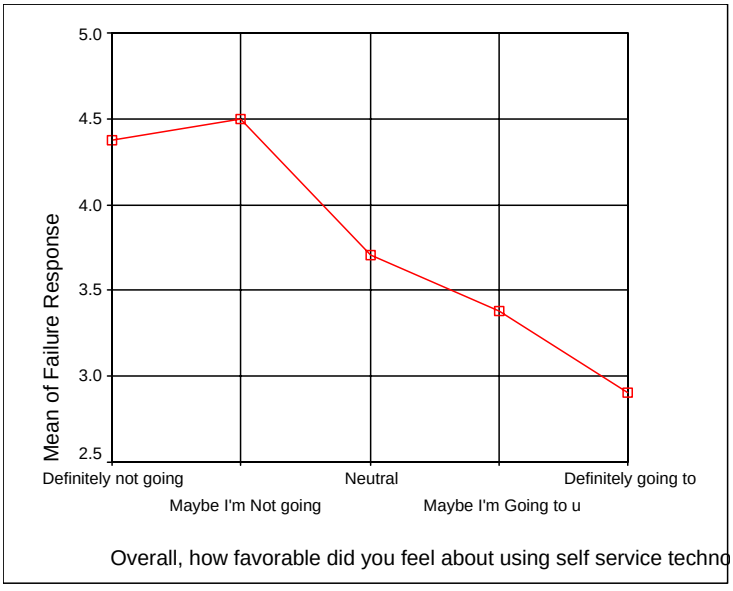
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Failure Response	there's alway somebody responsible		1	8	46	14	69
	regaluraily there´s somebody responsible			8	25	7	40
	neutral	2	3	30	83	13	131
	regularily there's nobody responsible	1	7	34	58	6	106
	nobody's responsible, ever	5	23	36	86	12	162
Total		8	34	116	298	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.035[a]	16	.000
Continuity Correction			
Likelihood Ratio	52.310	16	.000
Linear-by-Linear Association	34.198	1	.000
N of Valid Cases	508		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .63.



Crosstab

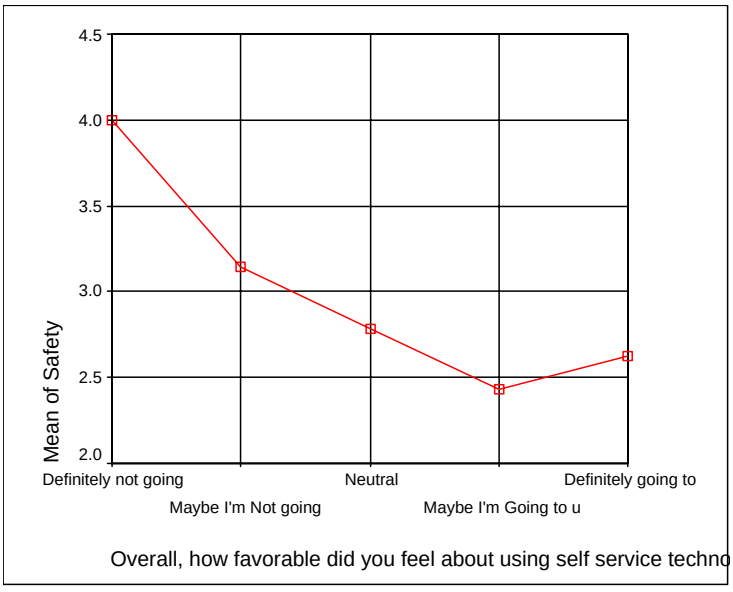
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Safety	definitely they are safe and private		7	20	81	16	124
	they are some how safe and private		5	24	75	11	115
	neutral	3	9	44	88	10	154
	they aren't safe and private	2	4	15	38	4	63
	definitely they aren't safe and private	3	10	12	15	10	50
Total		8	35	115	297	51	506

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.670[a]	16	.000
Continuity Correction			
Likelihood Ratio	45.422	16	.000
Linear-by-Linear Association	15.813	1	.000
N of Valid Cases	506		

a. 7 cells (28.0%) have expected count less than 5. The minimum expected count is .79.



Crosstab

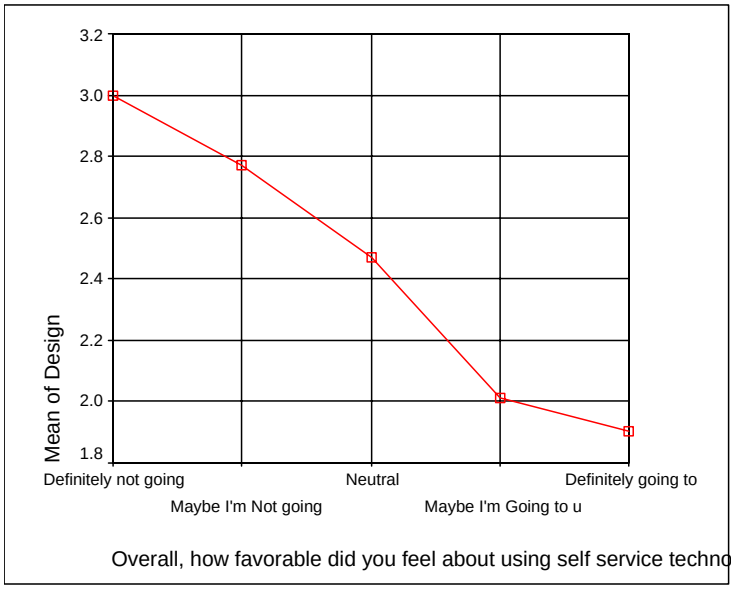
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Design	definitely they have good design and easy to use	1	13	29	116	23	182
	they have some design and easy to use	3	3	36	95	16	153
	neutral	1	5	27	65	10	108
	they have bad design and are not easy to use	1	7	13	14	1	36
	definitely they have bad designa and hard to use	2	7	10	9	2	30
Total		8	35	115	299	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.765[a]	16	.000
Continuity Correction			
Likelihood Ratio	47.580	16	.000
Linear-by-Linear Association	26.925	1	.000
N of Valid Cases	509		

a. 9 cells (36.0%) have expected count less than 5. The minimum expected count is .47.



Crosstab

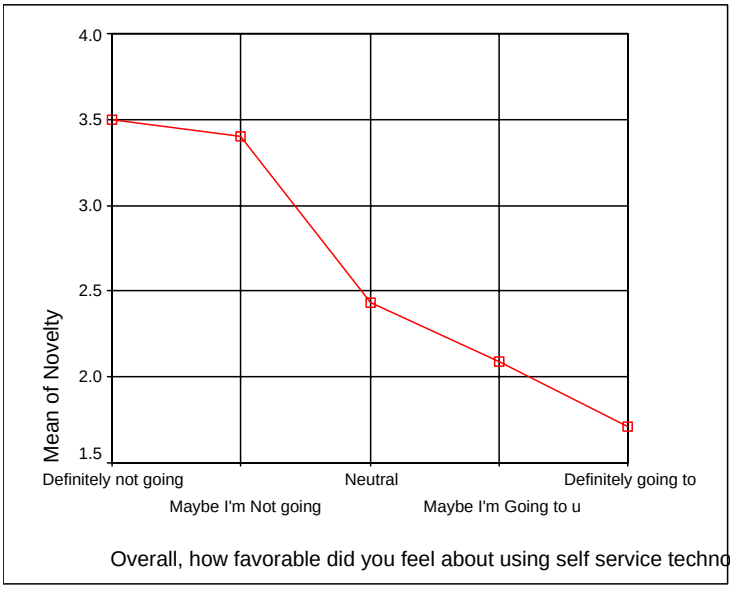
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Novelty	I always have acces to new technology	1	6	30	118	32	187
	I regularly have acces to new technology	2	6	34	90	12	144
	neutral	1	5	35	57	3	101
	Regularily I don't care for new technology		4	6	14	1	25
	definitely I don't care for new technology	4	14	11	20	4	53
Total		8	35	116	299	52	510

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83.209[a]	16	.000
Continuity Correction			
Likelihood Ratio	67.078	16	.000
Linear-by-Linear Association	47.648	1	.000
N of Valid Cases	510		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .39.



ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Human interaction	Between Groups	110.237	4	27.559	15.762	.000
	Within Groups	879.454	503	1.748		
	Total	989.691	507			
Rationality	Between Groups	35.328	4	8.832	4.437	.002
	Within Groups	1003.206	504	1.990		
	Total	1038.534	508			
Change Resistance	Between Groups	75.163	4	18.791	11.633	.000
	Within Groups	810.865	502	1.615		
	Total	886.028	506			
Comfort	Between Groups	109.198	4	27.300	24.007	.000
	Within Groups	571.983	503	1.137		
	Total	681.181	507			
Time Saving	Between Groups	76.946	4	19.236	18.194	.000
	Within Groups	532.889	504	1.057		
	Total	609.835	508			
Technological Dependecy	Between Groups	77.185	4	19.296	11.341	.000
	Within Groups	847.312	498	1.701		
	Total	924.497	502			
Convenience	Between Groups	95.994	4	23.998	21.270	.000
	Within Groups	569.789	505	1.128		
	Total	665.782	509			
Failure Response	Between Groups	67.912	4	16.978	9.737	.000
	Within Groups	877.080	503	1.744		
	Total	944.992	507			
Safety	Between Groups	38.341	4	9.585	6.347	.000
	Within Groups	756.608	501	1.510		
	Total	794.949	505			
Design	Between Groups	39.505	4	9.876	7.666	.000
	Within Groups	649.281	504	1.288		
	Total	688.786	508			
Novelty	Between Groups	85.252	4	21.313	14.349	.000
	Within Groups	750.083	505	1.485		
	Total	835.335	509			

Demographics

Crosstab

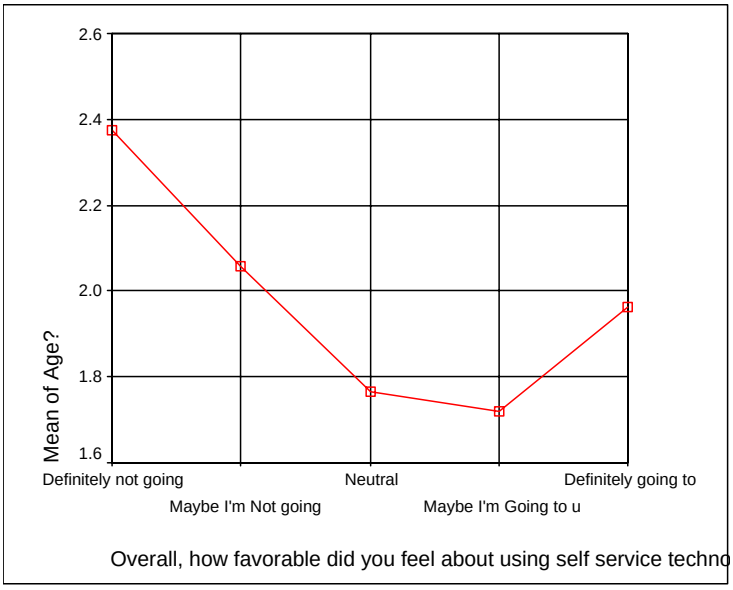
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Age?	Under 25	2	9	65	168	23	267
	25 to 40	1	15	19	54	13	102
	41 to 55	5	11	28	68	12	124
	56 to 70			2	8	3	13
	More than 70			2		1	3
Total		8	35	116	298	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.502[a]	16	.005
Continuity Correction			
Likelihood Ratio	33.318	16	.007
Linear-by-Linear Association	1.591	1	.207
N of Valid Cases	509		

a. 12 cells (48.0%) have expected count less than 5. The minimum expected count is .05.



Crosstab

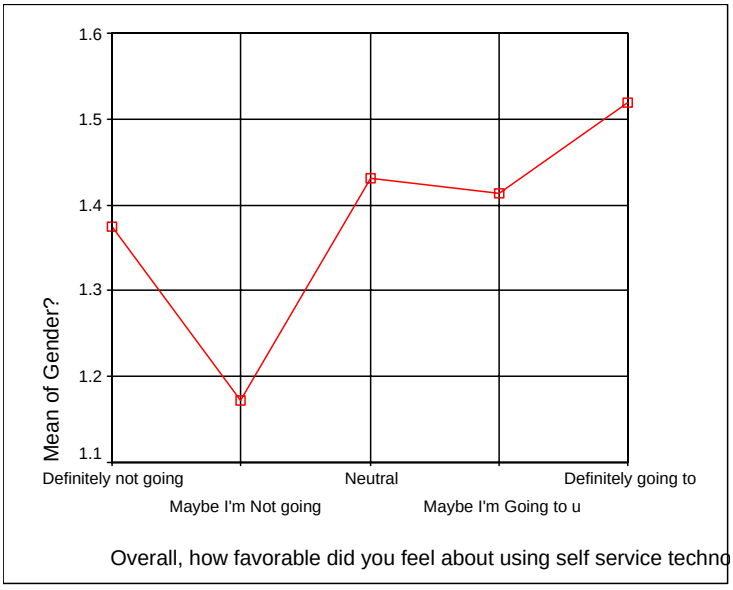
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Gender?	Female	5	29	66	174	25	299
	Male	3	6	50	123	27	209
Total		8	35	116	297	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.058[a]	4	.026
Continuity Correction			
Likelihood Ratio	12.018	4	.017
Linear-by-Linear Association	5.496	1	.019
N of Valid Cases	508		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.29.



Crosstab

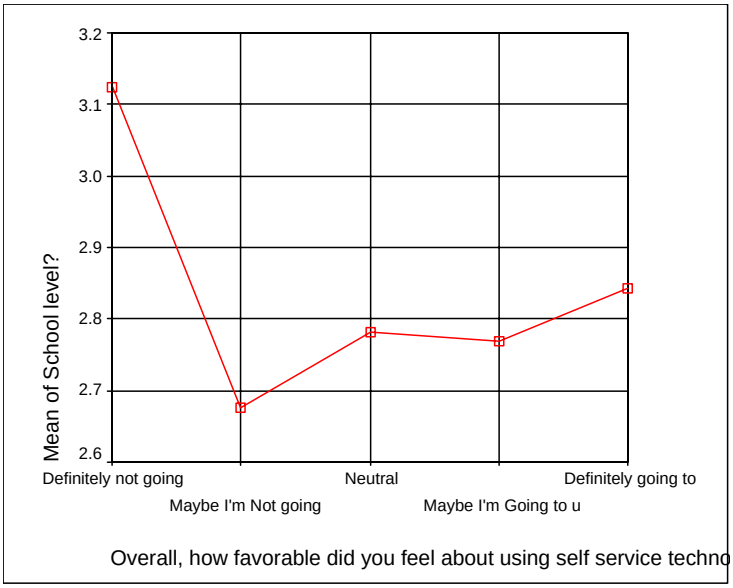
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
School level?	High school or less		5	8	17	5	35
	Some college	1	9	24	71	6	111
	College graduate	5	12	68	170	32	287
	Graduate school	2	8	15	37	8	70
Total		8	34	115	295	51	503

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.181[a]	12	.232
Continuity Correction			
Likelihood Ratio	15.447	12	.218
Linear-by-Linear Association	.013	1	.910
N of Valid Cases	503		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is .56.



Crosstab

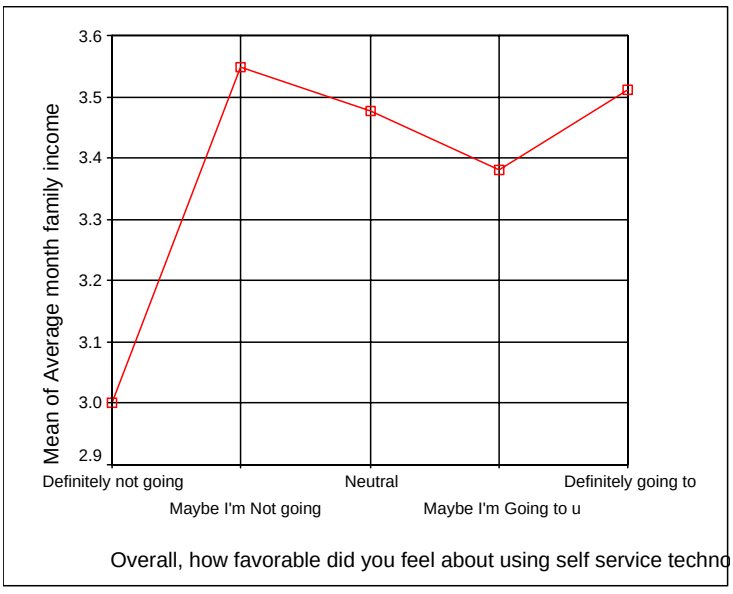
Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Average month family income	less than $5000	1	3	11	21	3	39
	$5000 to $10000		5	17	45	7	74
	$10000 to $20000	5	6	26	83	17	137
	$20000 to $30000		6	16	49	6	77
	More than $30000	1	11	37	70	16	135
Total		7	31	107	268	49	462

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.917[a]	16	.531
Continuity Correction			
Likelihood Ratio	16.298	16	.432
Linear-by-Linear Association	.000	1	.983
N of Valid Cases	462		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .59.



ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	8.363	4	2.091	2.402	.049
	Within Groups	438.721	504	.870		
	Total	447.084	508			
Gender?	Between Groups	2.678	4	.669	2.798	.026
	Within Groups	120.336	503	.239		
	Total	123.014	507			
School level?	Between Groups	1.553	4	.388	.656	.623
	Within Groups	294.952	498	.592		
	Total	296.505	502			
Average month family income	Between Groups	2.902	4	.725	.435	.783
	Within Groups	761.793	457	1.667		
	Total	764.695	461			

Appendix 6 Bivariate Correlations

		Ubiquity 5	Comfort 2	Human Interaction 2	Personal motivations 4	Time saving 2
Ubiquity 5	Pearson Correlati	1.000	.479*	-.018	.110*	.312*
	Sig. (2-tailed)	.	.000	.683	.013	.000
	N	508	506	508	507	507
Comfort 2	Pearson Correlati	.479*	1.000	.012	.096*	.317*
	Sig. (2-tailed)	.000	.	.784	.031	.000
	N	506	509	509	508	508
Human Interaction	Pearson Correlati	-.018	.012	1.000	-.021	-.126*
	Sig. (2-tailed)	.683	.784	.	.632	.004
	N	508	509	511	510	510
Personal motivation	Pearson Correlati	.110*	.096*	-.021	1.000	.236*
	Sig. (2-tailed)	.013	.031	.632	.	.000
	N	507	508	510	510	509
Time saving 2	Pearson Correlati	.312*	.317*	-.126*	.236*	1.000
	Sig. (2-tailed)	.000	.000	.004	.000	.
	N	507	508	510	509	510
Rationality 2	Pearson Correlati	.435*	.352*	.054	.139*	.292*
	Sig. (2-tailed)	.000	.000	.220	.002	.000
	N	508	509	511	510	510
Failure Response 6	Pearson Correlati	.411*	.367*	.058	-.008	.346*
	Sig. (2-tailed)	.000	.000	.190	.862	.000
	N	507	508	510	509	509
Design 15	Pearson Correlati	.204*	.179*	.161*	-.002	.171*
	Sig. (2-tailed)	.000	.000	.000	.965	.000
	N	507	508	510	509	509
Change Resistance	Pearson Correlati	.072	.008	.290*	-.100*	-.016
	Sig. (2-tailed)	.106	.863	.000	.024	.715
	N	507	508	510	509	509
Technological dependency 9	Pearson Correlati	.082	.081	-.015	.136*	.141*
	Sig. (2-tailed)	.065	.068	.740	.002	.001
	N	508	509	511	510	510

Convenience 7	**Pearson Correlati**	*.152**	*.201**	*-.119**	*.132**	*.324**
	Sig. (2-tailed)	*.001*	*.000*	*.007*	*.003*	*.000*
	N	*506*	*507*	*509*	*508*	*508*
Personal Motivatio	**Pearson Correlati**	*-.050*	*.076*	*.005*	*.334**	*.117**
	Sig. (2-tailed)	*.260*	*.086*	*.909*	*.000*	*.008*
	N	*508*	*509*	*511*	*510*	*510*
Human Interaction	**Pearson Correlati**	*-.187**	*-.123**	*.139**	*.014*	*-.058*
	Sig. (2-tailed)	*.000*	*.005*	*.002*	*.760*	*.188*
	N	*507*	*508*	*510*	*509*	*509*
Human Interaction	**Pearson Correlati**	*-.209**	*-.157**	*.151**	*.075*	*-.134**
	Sig. (2-tailed)	*.000*	*.000*	*.001*	*.091*	*.002*
	N	*508*	*509*	*511*	*510*	*510*
Technological Dependency 11	**Pearson Correlati**	*.096**	*.139**	*-.070*	*.098**	*.231**
	Sig. (2-tailed)	*.031*	*.002*	*.116*	*.026*	*.000*
	N	*508*	*509*	*511*	*510*	*510*
Convenience 8	**Pearson Correlati**	*.105**	*.090**	*-.035*	*.186**	*.151**
	Sig. (2-tailed)	*.018*	*.043*	*.435*	*.000*	*.001*
	N	*508*	*509*	*511*	*510*	*510*
Time Saving 4	**Pearson Correlati**	*.038*	*.115**	*-.060*	*.156**	*.197**
	Sig. (2-tailed)	*.399*	*.010*	*.178*	*.000*	*.000*
	N	*505*	*506*	*508*	*507*	*507*
Efficiency 5	**Pearson Correlati**	*-.240**	*-.156**	*.143**	*.070*	*-.156**
	Sig. (2-tailed)	*.000*	*.000*	*.001*	*.117*	*.000*
	N	*507*	*508*	*510*	*509*	*509*
Time Saving 6	**Pearson Correlati**	*.065*	*.142**	*-.148**	*.201**	*.323**
	Sig. (2-tailed)	*.143*	*.001*	*.001*	*.000*	*.000*
	N	*508*	*509*	*511*	*510*	*510*
Comfort 3	**Pearson Correlati**	*.088**	*.178**	*-.042*	*.122**	*.197**
	Sig. (2-tailed)	*.046*	*.000*	*.343*	*.006*	*.000*
	N	*508*	*509*	*511*	*510*	*510*
Failure Response 2	**Pearson Correlati**	*.298**	*.279**	*.024*	*-.005*	*.206**
	Sig. (2-tailed)	*.000*	*.000*	*.588*	*.914*	*.000*
	N	*507*	*508*	*510*	*509*	*509*
Rationality 3	**Pearson Correlati**	*-.007*	*-.010*	*.050*	*.179**	*.021*
	Sig. (2-tailed)	*.872*	*.824*	*.262*	*.000*	*.639*
	N	*505*	*507*	*508*	*507*	*507*
Design 2	**Pearson Correlati**	*-.222**	*-.142**	*.136**	*.093**	*-.140**
	Sig. (2-tailed)	*.000*	*.001*	*.002*	*.037*	*.001*
	N	*508*	*509*	*511*	*510*	*510*

Technological dependency 13	**Pearson Correlati**	*.084*	*.139**	*-.037*	*.156**	*.174**
	Sig. (2-tailed)	*.060*	*.002*	*.408*	*.000*	*.000*
	N	*506*	*507*	*509*	*508*	*508*
Safety 16	**Pearson Correlati**	*.053*	*.029*	*.125**	*.148**	*.063*
	Sig. (2-tailed)	*.230*	*.514*	*.005*	*.001*	*.158*
	N	*506*	*507*	*509*	*508*	*508*
Safety 18	**Pearson Correlati**	*.106**	*.009*	*.090**	*-.005*	*.024*
	Sig. (2-tailed)	*.017*	*.846*	*.041*	*.911*	*.585*
	N	*508*	*509*	*511*	*510*	*510*
Design 14	**Pearson Correlati**	*.042*	*-.045*	*.083*	*.057*	*-.022*
	Sig. (2-tailed)	*.346*	*.317*	*.062*	*.199*	*.614*
	N	*507*	*508*	*510*	*509*	*509*
[illegible]	**Pearson Correlati**	*-.052*	*-.082*	*.182**	*.004*	*-.192**
	[illegible]	*[illegible]*	*[illegible]*	*[illegible]*	*[illegible]*	*[illegible]*
	N	*508*	*509*	*511*	*510*	*510*
Efficiency 11	**Pearson Correlati**	*.146**	*.076*	*.129**	*.064*	*.041*
	Sig. (2-tailed)	*.001*	*.085*	*.003*	*.148*	*.353*
	N	*508*	*509*	*511*	*510*	*510*
Failure Response 1	**Pearson Correlati**	*.270**	*.264**	*.025*	*.069*	*.240**
	Sig. (2-tailed)	*.000*	*.000*	*.568*	*.122*	*.000*
	N	*507*	*508*	*510*	*509*	*509*
Safety 17	**Pearson Correlati**	*-.049*	*-.102**	*.008*	*-.022*	*-.060*
	Sig. (2-tailed)	*.271*	*.021*	*.850*	*.623*	*.175*
	N	*508*	*509*	*511*	*510*	*510*
Change Resistance	**Pearson Correlati**	*-.080*	*-.093**	*.133**	*-.012*	*-.037*
	Sig. (2-tailed)	*.071*	*.035*	*.003*	*.793*	*.410*
	N	*508*	*508*	*510*	*509*	*509*
Personal Motivtions	**Pearson Correlati**	*.122**	*.136**	*-.044*	*.194**	*.284**
	Sig. (2-tailed)	*.006*	*.002*	*.323*	*.000*	*.000*
	N	*506*	*507*	*509*	*508*	*508*

**.Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

2	Rationality 2	Failure Response 6	Design 15	Change Resistance 2	Technological dependency 9	Convenience 7	Personal Motivations 3	Human Interaction 4	Human Interaction 6
*	.435*	.411*	.204*	.072	.082	.152*	-.050	-.187*	-.209*
	.000	.000	.000	.106	.065	.001	.260	.000	.000
	508	507	507	507	508	506	508	507	508
*	.352*	.367*	.179*	.008	.081	.201*	.076	-.123*	-.157*
	.000	.000	.000	.863	.068	.000	.086	.005	.000
	509	508	508	508	509	507	509	508	509
*	.054	.058	.161*	.290*	-.015	-.119*	.005	.139*	.151*
	.220	.190	.000	.000	.740	.007	.909	.002	.001
	511	510	510	510	511	509	511	510	511
*	.139*	-.008	-.002	-.100*	.136*	.132*	.334*	.014	.075
	.002	.862	.965	.024	.002	.003	.000	.760	.091
	510	509	509	509	510	508	510	509	510
	.292*	.346*	.171*	-.016	.141*	.324*	.117*	-.058	-.134*
	.000	.000	.000	.715	.001	.000	.008	.188	.002
	510	509	509	509	510	508	510	509	510
*	1.000	.426*	.265*	.082	.128*	.175*	.076	-.113*	-.120*
	.	.000	.000	.063	.004	.000	.088	.010	.006
	511	510	510	510	511	509	511	510	511
*	.426*	1.000	.361*	.070	.013	.149*	-.090*	-.039	-.113*
	.000	.	.000	.114	.762	.001	.041	.384	.010
	510	510	509	509	510	508	510	509	510
*	.265*	.361*	1.000	.252*	-.035	.023	-.004	-.017	-.085
	.000	.000	.	.000	.431	.611	.928	.698	.055
	510	509	510	509	510	508	510	509	510
	.082	.070	.252*	1.000	-.031	-.078	-.080	.060	.149*
	.063	.114	.000	.	.487	.081	.071	.175	.001
	510	509	509	510	510	508	510	509	510
*	.128*	.013	-.035	-.031	1.000	.408*	.342*	.066	.068
	.004	.762	.431	.487	.	.000	.000	.137	.125
	511	510	510	510	511	509	511	510	511

Correlations

6	Technological Dependency 11	Convenience 8	Time Saving 4	Efficiency 5	Time Savi	6	Comfort 3	Failure Response 2	Rationality 3	Design 2
*	.096*	.105*	.038	-.240*	.0	5	.088*	.298*	-.007	-.222*
	.031	.018	.399	.000	.1	3	.046	.000	.872	.000
	508	508	505	507	5	8	508	507	505	508
*	.139*	.090*	.115*	-.156*	.1	2*	.178*	.279*	-.010	-.142*
	.002	.043	.010	.000	.0	1	.000	.000	.824	.001
	509	509	506	508	5	9	509	508	507	509
*	-.070	-.035	-.060	.143*	-.1	8*	-.042	.024	.050	.136*
	.116	.435	.178	.001	.0	1	.343	.588	.262	.002
	511	511	508	510	5	1	511	510	508	511
	.098*	.186*	.156*	.070	.2	1*	.122*	-.005	.179*	.093*
	.026	.000	.000	.117	.0	0	.006	.914	.000	.037
	510	510	507	509	5	0	510	509	507	510
*	.231*	.151*	.197*	-.156*	.3	3*	.197*	.206*	.021	-.140*
	.000	.001	.000	.000	.0	0	.000	.000	.639	.001
	510	510	507	509	5	0	510	509	507	510
*	.203*	.172*	.060	-.178*	.1	7*	.200*	.304*	.031	-.139*
	.000	.000	.180	.000	.0	0	.000	.000	.481	.002
	511	511	508	510	5	1	511	510	508	511
*	.145*	.018	-.026	-.237*	.0	4	.087*	.415*	-.071	-.258*
	.001	.683	.559	.000	.0	5	.049	.000	.110	.000
	510	510	507	509	5	0	510	509	507	510
	.048	-.036	.004	-.054	.0	9	.082	.203*	.045	.014
	.284	.420	.935	.226	.8	4	.063	.000	.317	.755
	510	510	507	509	5	0	510	509	507	510
*	-.041	-.018	.001	.097*	-.0	0	-.105*	.044	-.025	.093*
	.351	.693	.986	.029	.2	6	.017	.327	.574	.035
	510	510	507	509	5	0	510	509	507	510
	.319*	.181*	.235*	.096*	.2	7*	.219*	.009	.176*	.164*
	.000	.000	.000	.030	.0	0	.000	.833	.000	.000
	511	511	508	510	5	1	511	510	508	511

Technological lependency 13	Safety 16	Safety 18	Design 14	Change Resisance 14	Efficiency 11	Failure Response 1	Safety 17	Change Resistance 12	M
.084	*.053*	*.106**	*.042*	*-.052*	*.146**	*.270**	*-.049*	*-.080*	
.060	*.230*	*.017*	*.346*	*.242*	*.001*	*.000*	*.271*	*.071*	
506	*506*	*508*	*507*	*508*	*508*	*507*	*508*	*508*	
*.139**	*.029*	*.009*	*-.045*	*-.082*	*.076*	*.264**	*-.102**	*-.093**	
.002	*.514*	*.846*	*.317*	*.065*	*.085*	*.000*	*.021*	*.035*	
507	*507*	*509*	*508*	*509*	*509*	*508*	*509*	*508*	
-.037	*.125**	*.090**	*.083*	*.182**	*.129**	*.025*	*.008*	*.133**	
.408	*.005*	*.041*	*.062*	*.000*	*.003*	*.568*	*.850*	*.003*	
509	*509*	*511*	*510*	*511*	*511*	*510*	*511*	*510*	
*.156**	*.148**	*-.005*	*.057*	*.004*	*.064*	*.069*	*-.022*	*-.012*	
.000	*.001*	*.911*	*.199*	*.935*	*.148*	*.122*	*.623*	*.793*	
508	*508*	*510*	*509*	*510*	*510*	*509*	*510*	*509*	
*.174**	*.063*	*.024*	*-.022*	*-.192**	*.041*	*.240**	*-.060*	*-.037*	
.000	*.158*	*.585*	*.614*	*.000*	*.353*	*.000*	*.175*	*.410*	
508	*508*	*510*	*509*	*510*	*510*	*509*	*510*	*509*	
*.157**	*.088**	*.161**	*.071*	*-.065*	*.084*	*.305**	*-.007*	*.005*	
.000	*.048*	*.000*	*.111*	*.141*	*.058*	*.000*	*.876*	*.918*	
509	*509*	*511*	*510*	*511*	*511*	*510*	*511*	*510*	
.075	*.069*	*.140**	*.113**	*-.072*	*.171**	*.392**	*-.122**	*-.019*	
.092	*.120*	*.002*	*.011*	*.103*	*.000*	*.000*	*.006*	*.676*	
508	*508*	*510*	*509*	*510*	*510*	*509*	*510*	*509*	
.072	*.088**	*.177**	*.251**	*.063*	*.221**	*.221**	*-.020*	*.006*	
.105	*.046*	*.000*	*.000*	*.157*	*.000*	*.000*	*.645*	*.893*	
508	*508*	*510*	*509*	*510*	*510*	*509*	*510*	*509*	
*-.106**	*.097**	*.207**	*.181**	*.214**	*.178**	*.077*	*.066*	*.141**	
.017	*.028*	*.000*	*.000*	*.000*	*.000*	*.084*	*.138*	*.001*	
508	*508*	*510*	*509*	*510*	*510*	*509*	*510*	*509*	
*.250**	*.088**	*.024*	*-.022*	*-.074*	*.020*	*.064*	*.082*	*.047*	
.000	*.046*	*.593*	*.626*	*.096*	*.651*	*.147*	*.065*	*.285*	
509	*509*	*511*	*510*	*511*	*511*	*510*	*511*	*510*	

7	Change Resistance 12	Personal Motivtions 5
9	*-.080*	*.122**
1	*.071*	*.006*
3	*508*	*506*
2*	*-.093**	*.136**
1	*.035*	*.002*
9	*508*	*507*
3	*.133**	*-.044*
0	*.003*	*.323*
1	*510*	*509*
2	*-.012*	*.194**
3	*.793*	*.000*
0	*509*	*508*
0	*-.037*	*.284**
5	*.410*	*.000*
0	*509*	*508*
7	*.005*	*.202**
6	*.918*	*.000*
1	*510*	*509*
2*	*-.019*	*.129**
6	*.676*	*.004*
0	*509*	*508*
0	*.006*	*.017*
5	*.893*	*.702*
0	*509*	*508*
6	*.141**	*-.074*
3	*.001*	*.095*
0	*509*	*508*
2	*.047*	*.138**
5	*.285*	*.002*
1	*510*	*509*

.175*	.149*	.023	-.078	.408*	1.000	.289*	.016	-.082
.000	.001	.611	.081	.000	.	.000	.716	.064
509	508	508	508	509	509	509	508	509
.076	-.090*	-.004	-.080	.342*	.289*	1.000	.034	.082
.088	.041	.928	.071	.000	.000	.	.446	.064
511	510	510	510	511	509	511	510	511
-.113*	-.039	-.017	.060	.066	.016	.034	1.000	.548*
.010	.384	.698	.175	.137	.716	.446	.	.000
510	509	509	509	510	508	510	510	510
-.120*	-.113*	-.085	.149*	.068	-.082	.082	.548*	1.000
.006	.010	.055	.001	.125	.064	.064	.000	.
511	510	510	510	511	509	511	510	511
.203*	.145*	.048	-.041	.319*	.306*	.187*	.176*	.105*
.000	.001	.284	.351	.000	.000	.000	.000	.017
511	510	510	510	511	509	511	510	511
.172*	.018	-.036	-.018	.181*	.259*	.207*	.077	.109*
.000	.683	.420	.693	.000	.000	.000	.081	.014
511	510	510	510	511	509	511	510	511
.060	-.026	.004	.001	.235*	.299*	.241*	.093*	.081
.180	.559	.935	.986	.000	.000	.000	.037	.069
508	507	507	507	508	506	508	507	508
-.178*	-.237*	-.054	.097*	.096*	-.070	.182*	.397*	.387*
.000	.000	.226	.029	.030	.113	.000	.000	.000
510	509	509	509	510	508	510	509	510
.167*	.074	.009	-.050	.247*	.352*	.211*	.120*	.034
.000	.095	.844	.256	.000	.000	.000	.007	.444
511	510	510	510	511	509	511	510	511
.200*	.087*	.082	-.105*	.219*	.272*	.279*	-.005	-.035
.000	.049	.063	.017	.000	.000	.000	.905	.424
511	510	510	510	511	509	511	510	511
.304*	.415*	.203*	.044	.009	.082	-.066	-.050	-.091*
.000	.000	.000	.327	.833	.065	.139	.265	.041
510	509	509	509	510	508	510	509	510
.031	-.071	.045	-.025	.176*	.086	.217*	.085	.078
.481	.110	.317	.574	.000	.052	.000	.056	.079
508	507	507	507	508	506	508	507	508
-.139*	-.258*	.014	.093*	.164*	-.001	.150*	.360*	.299*
.002	.000	.755	.035	.000	.990	.001	.000	.000
511	510	510	510	511	509	511	510	511

.306*	.259*	.299*	-.070	.3	2*	.272*	.082	.086	-.001
.000	.000	.000	.113	.0	0	.000	.065	.052	.990
509	509	506	508	5	9	509	508	506	509
.187*	.207*	.241*	.182*	.2	1*	.279*	-.066	.217*	.150*
.000	.000	.000	.000	.0	0	.000	.139	.000	.001
511	511	508	510	5	1	511	510	508	511
.176*	.077	.093*	.397*	.1	0*	-.005	-.050	.085	.360*
.000	.081	.037	.000	.0	7	.905	.265	.056	.000
510	510	507	509	5	0	510	509	507	510
.105*	.109*	.081	.387*	.0	4	-.035	-.091*	.078	.299*
.017	.014	.069	.000	.4	4	.424	.041	.079	.000
511	511	508	510	5	1	511	510	508	511
1.000	.271*	.275*	.094*	.3	4*	.302*	.141*	.146*	.102*
.	.000	.000	.033	.0	0	.000	.001	.001	.021
511	511	508	510	5	1	511	510	508	511
.271*	1.000	.377*	.058	.3	2*	.255*	.019	.182*	.061
.000	.	.000	.194	.0	0	.000	.668	.000	.167
511	511	508	510	5	1	511	510	508	511
.275*	.377*	1.000	.182*	.3	2*	.236*	.019	.251*	.232*
.000	.000	.	.000	.0	0	.000	.662	.000	.000
508	508	508	507	5	8	508	508	505	508
.094*	.058	.182*	1.000	.0	9	-.038	-.190*	.160*	.378*
.033	.194	.000	.	.0	5	.387	.000	.000	.000
510	510	507	510	5	0	510	509	507	510
.394*	.302*	.382*	.079	1.0	0	.454*	.134*	.254*	.136*
.000	.000	.000	.075		.	.000	.002	.000	.002
511	511	508	510	5	1	511	510	508	511
.302*	.255*	.236*	-.038	.4	4*	1.000	.168*	.284*	.020
.000	.000	.000	.387	.0	0	.	.000	.000	.651
511	511	508	510	5	1	511	510	508	511
.141*	.019	.019	-.190*	.1	4*	.168*	1.000	.003	-.110*
.001	.668	.662	.000	.0	2	.000	.	.949	.013
510	510	508	509	5	0	510	510	507	510
.146*	.182*	.251*	.160*	.2	4*	.284*	.003	1.000	.346*
.001	.000	.000	.000	.0	0	.000	.949	.	.000
508	508	505	507	5	8	508	507	508	508
.102*	.061	.232*	.378*	.1	6*	.020	-.110*	.346*	1.000
.021	.167	.000	.000	.0	2	.651	.013	.000	.
511	511	508	510	5	1	511	510	508	511

.212*	.113*	-.027	-.001	-.140*	-.032	.144*	-.015	-.015
.000	.011	.551	.982	.002	.478	.001	.741	.738
507	507	509	508	509	509	508	509	508
* .204*	.089*	-.107*	.016	-.032	-.027	-.009	.016	-.037
.000	.044	.016	.710	.465	.537	.846	.722	.400
509	509	511	510	511	511	510	511	510
* .087	.195*	.055	.105*	.225*	.081	.008	.052	.148*
.051	.000	.215	.018	.000	.066	.861	.238	.001
508	508	510	509	510	510	509	510	509
* .042	.197*	.108*	.162*	.262*	.134*	-.045	.155*	.194*
.345	.000	.015	.000	.000	.002	.309	.000	.000
509	509	511	510	511	511	510	511	510
* .291*	.115*	.014	.034	.007	.010	.159*	.016	.051
.000	.009	.758	.443	.881	.822	.000	.715	.255
509	509	511	510	511	511	510	511	510
.177*	.061	.059	-.057	-.060	-.078	.016	.048	-.009
.000	.169	.182	.201	.176	.078	.715	.284	.848
509	509	511	510	511	511	510	511	510
* .313*	.128*	-.004	.022	-.027	-.016	-.052	.037	.039
.000	.004	.933	.624	.551	.718	.238	.410	.380
506	506	508	507	508	508	507	508	507
* .054	.091*	.058	.118*	.258*	.076	-.107*	.188*	.217*
.222	.039	.188	.008	.000	.087	.016	.000	.000
508	508	510	509	510	510	509	510	509
* .388*	.069	.001	-.002	-.160*	-.088*	.102*	.056	.009
.000	.122	.977	.957	.000	.046	.021	.204	.848
509	509	511	510	511	511	510	511	510
.223*	.033	.037	-.014	-.109*	-.055	.124*	.022	-.031
.000	.461	.410	.756	.014	.212	.005	.613	.489
509	509	511	510	511	511	510	511	510
* .207*	.124*	.129*	.117*	-.053	.200*	.416*	-.094*	.006
.000	.005	.003	.008	.228	.000	.000	.033	.894
508	508	510	509	510	510	509	510	509
* .319*	.170*	-.013	.039	.108*	-.033	-.046	.054	-.025
.000	.000	.773	.378	.015	.463	.299	.228	.581
506	506	508	507	508	508	507	508	507
.278*	.215*	.100*	.097*	.274*	.009	-.079	.088*	.162*
.000	.000	.024	.028	.000	.832	.076	.048	.000
509	509	511	510	511	511	510	511	510

-.015	*.214**
.738	*.000*
508	*507*
-.037	*.327**
.400	*.000*
510	*509*
*.148**	*.031*
.001	*.482*
509	*508*
*.194**	*.013*
.000	*.778*
510	*509*
.051	*.227**
.255	*.000*
510	*509*
-.009	*.158**
.848	*.000*
510	*509*
.039	*.207**
.380	*.000*
507	*506*
*.217**	*.064*
.000	*.148*
509	*508*
.009	*.321**
.848	*.000*
510	*509*
-.031	*.277**
.489	*.000*
510	*509*
.006	*.108**
.894	*.015*
509	*508*
-.025	*.086*
.581	*.052*
507	*506*
*.162**	*.033*
.000	*.456*
510	*509*

*.157**	*.075*	*.072*	*-.106**	*.250**	*.212**	*.204**	*.087*	*.042*
.000	*.092*	*.105*	*.017*	*.000*	*.000*	*.000*	*.051*	*.345*
509	*508*	*508*	*508*	*509*	*507*	*509*	*508*	*509*
*.088**	*.069*	*.088**	*.097**	*.088**	*.113**	*.089**	*.195**	*.197**
.048	*.120*	*.046*	*.028*	*.046*	*.011*	*.044*	*.000*	*.000*
509	*508*	*508*	*508*	*509*	*507*	*509*	*508*	*509*
*.161**	*.140**	*.177**	*.207**	*.024*	*-.027*	*-.107**	*.055*	*.108**
.000	*.002*	*.000*	*.000*	*.593*	*.551*	*.016*	*.215*	*.015*
511	*510*	*510*	*510*	*511*	*509*	*511*	*510*	*511*
.071	*.113**	*.251**	*.181**	*-.022*	*-.001*	*.016*	*.105**	*.162**
.111	*.011*	*.000*	*.000*	*.626*	*.982*	*.710*	*.018*	*.000*
510	*509*	*509*	*509*	*510*	*508*	*510*	*509*	*510*
-.065	*-.072*	*.063*	*.214**	*-.074*	*-.140**	*-.032*	*.225**	*.262**
141	*103*	*157*	*000*	*096*	*003*	*465*	*000*	*000*
511	*510*	*510*	*510*	*511*	*509*	*511*	*510*	*511*
.084	*.171**	*.221**	*.178**	*.020*	*-.032*	*-.027*	*.081*	*.134**
.058	*.000*	*.000*	*.000*	*.651*	*.478*	*.537*	*.066*	*.002*
511	*510*	*510*	*510*	*511*	*509*	*511*	*510*	*511*
*.305**	*.392**	*.221**	*.077*	*.064*	*.144**	*-.009*	*.008*	*-.045*
.000	*.000*	*.000*	*.084*	*.147*	*.001*	*.846*	*.861*	*.309*
510	*509*	*509*	*509*	*510*	*508*	*510*	*509*	*510*
-.007	*-.122**	*-.020*	*.066*	*.082*	*-.015*	*.016*	*.052*	*.155**
.876	*.006*	*.645*	*.138*	*.065*	*.741*	*.722*	*.238*	*.000*
511	*510*	*510*	*510*	*511*	*509*	*511*	*510*	*511*
.005	*-.019*	*.006*	*.141**	*.047*	*-.015*	*-.037*	*.148**	*.194**
.918	*.676*	*.893*	*.001*	*.285*	*.738*	*.400*	*.001*	*.000*
510	*509*	*509*	*509*	*510*	*508*	*510*	*509*	*510*
*.202**	*.129**	*.017*	*-.074*	*.138**	*.214**	*.327**	*.031*	*.013*
.000	*.004*	*.702*	*.095*	*.002*	*.000*	*.000*	*.482*	*.778*
509	*508*	*508*	*508*	*509*	*507*	*509*	*508*	*509*

.291*	.177*	.313*	.054	.3 8*	.223*	.207*	.319*	.278*
.000	.000	.000	.222	.0 0	.000	.000	.000	.000
509	509	506	508	5 9	509	508	506	509
.115*	.061	.128*	.091*	.0 9	.033	.124*	.170*	.215*
.009	.169	.004	.039	.1 2	.461	.005	.000	.000
509	509	506	508	5 9	509	508	506	509
.014	.059	-.004	.058	.0 1	.037	.129*	-.013	.100*
.758	.182	.933	.188	.9 7	.410	.003	.773	.024
511	511	508	510	5 1	511	510	508	511
.034	-.057	.022	.118*	-.0 2	-.014	.117*	.039	.097*
.443	.201	.624	.008	.9 7	.756	.008	.378	.028
510	510	507	509	5 0	510	509	507	510
.007	-.060	-.027	.258*	-.1 0*	-.109*	-.053	.108*	.274*
.881	.176	.551	.000	0	.014	.228	.015	.000
511	511	508	510	511	511	510	508	511
.010	-.078	-.016	.076	-.088*	-.055	.200*	-.033	.009
.822	.078	.718	.087	.046	.212	.000	.463	.832
511	511	508	510	511	511	510	508	511
.159*	.016	-.052	-.107*	.102*	.124*	.416*	-.046	-.079
.000	.715	.238	.016	.021	.005	.000	.299	.076
510	510	507	509	510	510	509	507	510
.016	.048	.037	.188*	.056	.022	-.094*	.054	.088*
.715	.284	.410	.000	.204	.613	.033	.228	.048
511	511	508	510	511	511	510	508	511
.051	-.009	.039	.217*	.009	-.031	.006	-.025	.162*
.255	.848	.380	.000	.848	.489	.894	.581	.000
510	510	507	509	510	510	509	507	510
.227*	.158*	.207*	.064	.321*	.277*	.108*	.086	.033
.000	.000	.000	.148	.000	.000	.015	.052	.456
509	509	506	508	509	509	508	506	509

.278**	1.000	.154**	-.008	.038	-.077	.024	.167**	-.019
.000	.	.000	.866	.397	.084	.597	.000	.670
509	509	507	509	508	509	509	508	509
.215**	.154**	1.000	.220**	.266**	.114**	.119**	.213**	.102**
.000	.000	.	.000	.000	.010	.007	.000	.021
509	507	509	509	508	509	509	508	509
.100**	-.008	.220**	1.000	.381**	.235**	.164**	.135**	.312**
.024	.866	.000	.	.000	.000	.000	.002	.000
511	509	509	511	510	511	511	510	511
.097**	.038	.266**	.381**	1.000	.236**	.198**	.163**	.133**
.028	.397	.000	.000	.	.000	.000	.000	.003
510	508	508	510	510	510	510	509	510
.274**	-.077	.114**	.235**	.236**	1.000	.255**	-.028	.168**
.000	.084	.010	.000	.000	.	.000	.527	.000
511	509	509	511	510	511	511	510	511
.009	.024	.119**	.164**	.198**	.255**	1.000	.303**	.085
.832	.597	.007	.000	.000	.000	.	.000	.054
511	509	509	511	510	511	511	510	511
-.079	.167**	.213**	.135**	.163**	-.028	.303**	1.000	-.063
.076	.000	.000	.002	.000	.527	.000	.	.155
510	508	508	510	509	510	510	510	510
.088**	-.019	.102**	.312**	.133**	.168**	.085	-.063	1.000
.048	.670	.021	.000	.003	.000	.054	.155	.
511	509	509	511	510	511	511	510	511
.162**	.007	.050	.171**	.057	.210**	.103**	-.027	.432**
.000	.872	.264	.000	.196	.000	.019	.537	.000
510	508	508	510	509	510	510	509	510
.033	.246**	.077	-.020	-.007	-.126**	-.019	.196**	.065
.456	.000	.083	.656	.873	.005	.665	.000	.141
509	507	507	509	508	509	509	508	509

-.019	*.007*	*.246**
.670	*.872*	*.000*
509	*508*	*507*
*.102**	*.050*	*.077*
.021	*.264*	*.083*
509	*508*	*507*
*.312**	*.171**	*-.020*
.000	*.000*	*.656*
511	*510*	*509*
*.133**	*.057*	*-.007*
.003	*.196*	*.873*
510	*509*	*508*
*.168**	*.210**	*-.126**
.000	*.000*	*.005*
511	*510*	*509*
.085	*.103**	*-.019*
.054	*.019*	*.665*
511	*510*	*509*
-.063	*-.027*	*.196**
.155	*.537*	*.000*
510	*509*	*508*
1.000	*.432**	*.065*
.	*.000*	*.141*
511	*510*	*509*
*.432**	*1.000*	*.127**
.000	*.*	*.004*
510	*510*	*508*
.065	*.127**	*1.000*
.141	*.004*	*.*
509	*508*	*509*

Appendix 7

Complete Factor Analysis First Approach (eliminating those variables with low alphas).

First step

This procedure starts with a required analysis of sampling adequacy; here .807 means a high and appropriate indicator of sufficiency. KMO indicates the proportion of variance in current variables.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.807***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3900.397***
	df	***528***
	Sig.	***.000***

Additionally the significance of Bartlett's test of sphericity indicates the appropriateness of using factor analysis based in all correlations within a correlation matrix. The significance level gives the result of the test. Very small values (less than .05) indicate that there are probably significant relationships among current variables.

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.688***	***11.175***	***11.175***
	2	***2.235***	***6.772***	***17.947***
	3	***2.216***	***6.715***	***24.662***
	4	***1.893***	***5.737***	***30.399***
	5	***1.819***	***5.512***	***35.911***
	6	***1.798***	***5.450***	***41.360***
	7	***1.700***	***5.151***	***46.511***
	8	***1.682***	***5.097***	***51.608***
	9	***1.541***	***4.670***	***56.278***

Extraction Method: Principal Component Analysis.

The extracted variance at this step are lower (not convenient) to 60% of total variance explained by all components.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.640	-.076	-.270	-.011	.110	.019	.182	.009	.124
Comfort 2	.613	.033	-.116	.046	.086	-.170	.133	-.074	.146
Human Interaction 2	.028	.018	.158	-.021	.679	-.038	-.063	-.006	.022
Personal motivations 4	.102	.093	.027	-.019	-.066	.132	.123	-.051	.794
Time saving 2	.523	-.007	-.064	.145	-.158	-.002	.313	-.014	.236
Rationality 2	.632	.082	-.175	.077	.110	.077	.176	.057	.078
Failure Response 6	.755	-.079	-.026	.042	.050	.069	-.046	-.066	-.116
Design 15	.397	.160	-.148	.023	.419	.210	-.142	-.028	-.047
Change Resistance 2	.092	-.127	.062	-.019	.651	.138	.138	.086	-.166
Technological dependency 9	-.005	.141	-.003	.801	.070	.001	.034	.050	.088
Convenience 7	.176	.029	-.050	.697	-.127	.071	.265	-.062	.061
Personal Motivations 3	-.100	.221	.029	.479	.014	-.065	.012	-.038	.613
Human Interaction 4	-.047	.056	.818	.012	.055	.064	.058	.003	-.083
Human Interaction 6	-.155	-.050	.751	-.017	.106	.172	.100	.112	.080
Technological Dependency 11	.276	.258	.265	.435	-.136	-.042	.213	.088	-.100
Convenience 8	.111	.118	.106	.163	-.009	.032	.693	.014	.104
Time Saving 4	.023	.329	.128	.222	.047	-.003	.563	.023	.130
Efficiency 5	-.260	.143	.533	.039	.216	-.029	-.021	.252	.180
Time Saving 6	.235	.489	.103	.253	-.252	-.040	.382	.120	.015
Comfort 3	.189	.480	-.110	.298	-.162	-.029	.170	.099	.067
Failure Response 2	.631	.232	.035	-.027	-.093	.135	-.151	-.043	-.176
Rationality 3	-.128	.722	-.056	.004	.146	.077	.130	-.038	.154
Design 2	-.296	.528	.364	.021	.264	.141	.016	.045	.045
Technological dependency 13	.194	.687	.093	.118	-.127	.029	.044	-.036	.065
Safety 16	.083	.135	.266	.048	.015	.599	.079	-.106	.135
Safety 18	.112	-.053	-.064	-.026	.111	.677	.096	.363	-.111
Design 14	.064	.035	.063	.004	.114	.738	-.131	.061	.027
Change Resisance 14	-.099	.038	.243	-.152	.412	.221	-.178	.271	.053
Efficiency 11	.320	-.078	.203	.038	.284	.185	-.394	.154	.173
Failure Response 1	.625	.057	.157	.154	-.108	.237	-.287	-.090	.015
Safety 17	-.140	.014	-.004	.057	-.020	.238	.042	.787	.007
Change Resistance 12	-.006	.008	.198	-.013	.110	-.050	-.024	.778	-.035
Personal Motivtions 5	.285	.227	.116	.120	-.293	-.150	.106	.242	.408

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

The rotated matrix extracted 9 initial components

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	109.1963	153.2885	.2445	.7608
Q2	108.6653	152.8111	.2494	.7606
Q3	109.6157	156.8417	.1237	.7672
Q4	109.0992	154.4829	.2512	.7603
Q5	108.7128	152.5157	.3090	.7575
Q6	109.0372	150.1808	.3721	.7542
Q7	108.7355	151.1100	.2666	.7599
Q8	109.1095	152.4290	.2686	.7595
Q9	109.7128	156.6275	.1362	.7663
Q10	108.6756	153.0229	.3027	.7579
Q11	108.5269	152.9662	.2991	.7580
Q12	109.0847	154.1150	.2543	.7602
Q13	108.8926	154.4812	.2130	.7623
Q14	109.1054	154.9392	.2026	.7628
Q15	108.4587	151.7519	.3912	.7543
Q16	108.9153	154.0984	.3019	.7583
Q17	108.6488	152.3940	.3439	.7562
Q18	109.1260	155.7998	.1656	.7648
Q19	108.3616	151.7593	.4049	.7540
Q20	108.7107	153.3944	.3157	.7575
Q21	108.2438	153.6920	.2927	.7585
Q22	108.6240	154.3883	.2546	.7601
Q23	108.7955	154.0802	.2326	.7613
Q24	108.1384	152.8938	.3665	.7557
Q25	108.5227	151.2604	.3447	.7557
Q26	109.3802	152.9690	.2627	.7598
Q27	109.2169	153.6982	.2584	.7600
Q28	109.5888	157.5304	.1294	.7659
Q29	109.0950	153.9330	.2500	.7604
Q30	108.3822	151.6859	.3459	.7558
Q31	109.4504	156.4965	.1572	.7649
Q32	109.3161	156.5148	.1731	.7638
Q33	108.5744	154.1787	.3077	.7581

Reliability Coefficients

N of Cases = 484.0 N of Items = 33

Alpha = .7654

First variable to eliminate (in order to increase alpha) is Q3

Second Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.807***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3804.612***
	df	***496***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.659***	***11.435***	***11.435***
	2	***2.269***	***7.089***	***18.524***
	3	***2.130***	***6.655***	***25.180***
	4	***1.851***	***5.783***	***30.963***
	5	***1.812***	***5.664***	***36.627***
	6	***1.728***	***5.401***	***42.028***
	7	***1.683***	***5.259***	***47.287***
	8	***1.652***	***5.162***	***52.449***
	9	***1.535***	***4.797***	***57.247***

Extraction Method: Principal Component Analysis.

To proceed with this methodology we continue performing the same steps until final results.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.639	-.267	-.074	.169	.017	-.036	.010	.172	.128
Comfort 2	.615	-.114	.031	.133	.068	-.209	-.073	.091	.144
Personal motivations 4	.096	.028	.090	.117	-.019	.118	-.049	-.066	.793
Time saving 2	.506	-.079	-.041	.353	.122	-.011	-.025	-.121	.245
Rationality 2	.625	-.175	.064	.198	.063	.091	.061	.064	.081
Failure Response 6	.752	-.034	-.102	-.009	.024	.090	-.065	.002	-.114
Design 15	.425	-.112	.182	-.102	-.007	.199	-.034	.404	-.027
Change Resistance 2	.110	.112	-.086	.135	-.038	.121	.076	.639	-.148
Technological dependency 9	.010	.003	.149	.039	.821	-.017	.061	.044	.087
Convenience 7	.168	-.065	.008	.293	.691	.068	-.061	-.110	.068
Personal Motivations 3	-.095	.041	.217	.041	.448	-.031	-.033	-.082	.614
Human Interaction 4	-.041	.819	.047	.071	.006	.082	-.004	-.012	-.093
Human Interaction 6	-.150	.758	-.048	.092	-.014	.171	.105	.079	.073
Technological Dependency 11	.273	.250	.224	.256	.423	-.026	.088	-.185	-.103
Convenience 8	.084	.097	.092	.699	.147	.041	.011	-.012	.106
Time Saving 4	.021	.134	.326	.572	.228	-.053	.014	.103	.137
Efficiency 5	-.239	.560	.162	-.017	.036	-.046	.244	.179	.178
Time Saving 6	.221	.082	.438	.445	.215	-.007	.115	-.299	.016
Comfort 3	.178	-.125	.435	.234	.245	.049	.106	-.290	.066
Failure Response 2	.636	.016	.205	-.118	-.028	.155	-.034	-.151	-.183
Rationality 3	-.107	-.038	.737	.130	.016	.061	-.028	.106	.150
Design 2	-.262	.392	.561	.002	.047	.099	.048	.249	.041
Technological dependency 13	.210	.083	.673	.067	.136	.014	-.026	-.167	.054
Safety 16	.079	.254	.125	.069	.052	.625	-.091	-.026	.130
Safety 18	.109	-.064	-.054	.089	-.025	.664	.369	.171	-.100
Design 14	.076	.069	.042	-.118	-.006	.729	.063	.164	.043
Change Resisance 14	-.061	.285	.092	-.213	-.111	.136	.267	.480	.057
Efficiency 11	.360	.231	-.039	-.400	.075	.102	.151	.342	.179
Failure Response 1	.635	.141	.034	-.249	.151	.252	-.084	-.151	.012
Safety 17	-.140	-.001	.010	.036	.065	.219	.791	.016	.008
Change Resistance 12	-.001	.210	.004	-.018	-.017	-.048	.780	.064	-.041
Personal Motivtions 5	.263	.096	.168	.173	.058	-.065	.242	-.431	.401

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	106.5083	147.7618	.2522	.7623
Q2	105.9773	147.3804	.2539	.7623
Q4	106.4112	149.0004	.2577	.7619
Q5	106.0248	146.7116	.3288	.7584
Q6	106.3492	144.8654	.3747	.7559
Q7	106.0475	145.8549	.2661	.7619
Q8	106.4215	147.4783	.2572	.7621
Q9	107.0248	152.0781	.1088	.7698
Q10	105.9876	147.5692	.3090	.7595
Q11	105.8388	147.2121	.3170	.7591
Q12	106.3967	148.7036	.2581	.7619
Q13	106.2045	149.4964	.2013	.7649
Q14	106.4174	149.9497	.1906	.7654
Q15	105.7707	146.1854	.4042	.7556
Q16	106.2273	148.6190	.3094	.7598
Q17	105.9607	146.8287	.3556	.7575
Q18	106.4380	150.8388	.1524	.7675
Q19	105.6736	145.9967	.4270	.7548
Q20	106.0227	147.8235	.3273	.7589
Q21	105.5558	148.2805	.2972	.7601
Q22	105.9360	149.0828	.2542	.7621
Q23	106.1074	149.0733	.2216	.7638
Q24	105.4504	147.3495	.3783	.7571
Q25	105.8347	146.1921	.3374	.7579
Q26	106.6921	147.8077	.2580	.7620
Q27	106.5289	148.5437	.2528	.7622
Q28	106.9008	152.6195	.1122	.7687
Q29	106.4070	148.8920	.2400	.7628
Q30	105.6942	146.2624	.3519	.7574
Q31	106.7624	151.0966	.1588	.7668
Q32	106.6281	151.3976	.1640	.7662
Q33	105.8864	148.5730	.3210	.7594

Reliability Coefficients

N of Cases = 484.0 N of Items = 32

Alpha = .7672

Third Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.809***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3707.010***
	df	***465***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.455***	***11.146***	***11.146***
	2	***2.266***	***7.310***	***18.456***
	3	***2.110***	***6.806***	***25.262***
	4	***1.892***	***6.102***	***31.364***
	5	***1.776***	***5.729***	***37.093***
	6	***1.762***	***5.683***	***42.776***
	7	***1.710***	***5.515***	***48.291***
	8	***1.572***	***5.071***	***53.362***
	9	***1.536***	***4.955***	***58.317***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.704	-.234	-.107	-.050	-.027	.049	.021	.217	.092
Comfort 2	.662	-.083	-.021	.041	-.200	.081	-.078	.173	.104
Personal motivations 4	.109	.035	.045	.091	.106	-.026	-.062	.148	.781
Time saving 2	.466	-.073	.310	-.122	-.002	.107	-.045	.242	.263
Rationality 2	.631	-.161	.126	.017	.103	.080	.067	.149	.080
Failure Response 6	.728	-.016	.129	-.149	.109	.006	-.085	-.057	-.123
Design 15	.460	-.084	-.092	.245	.267	-.053	.002	-.164	-.034
Technological dependency 9	.029	-.002	.029	.148	-.018	.833	.086	.032	.086
Convenience 7	.145	-.066	.218	-.044	.069	.690	-.067	.236	.075
Personal Motivations 3	-.114	.023	.162	.192	-.028	.425	-.025	-.011	.631
Human Interaction 4	-.065	.820	.069	.034	.082	.001	-.017	.054	-.096
Human Interaction 6	-.148	.765	-.058	-.020	.169	-.017	.100	.113	.066
Technological Dependency 11	.228	.252	.366	.133	-.027	.393	.047	.211	-.105
Convenience 8	.107	.117	.181	.060	.041	.154	.001	.687	.101
Time Saving 4	.062	.154	.142	.328	-.037	.235	.024	.542	.122
Efficiency 5	-.213	.568	-.080	.221	-.026	.013	.259	-.007	.165
Time Saving 6	.135	.071	.629	.288	-.009	.167	.058	.305	.043
Comfort 3	.108	-.132	.524	.309	.051	.170	.047	.168	.080
Failure Response 2	.576	.012	.300	.098	.150	-.035	-.074	-.182	-.178
Rationality 3	-.058	-.030	.090	.747	.067	.019	-.022	.164	.126
Design 2	-.210	.396	-.080	.617	.110	.076	.082	.013	.022
Technological dependency 13	.179	.073	.370	.581	-.001	.152	-.054	.011	.046
Safety 16	.052	.244	.088	.086	.606	.101	-.093	.025	.137
Safety 18	.140	-.037	-.089	-.023	.674	-.044	.362	.154	-.129
Design 14	.077	.076	-.068	.063	.751	-.027	.072	-.114	.039
Change Resisance 14	.056	.321	-.469	.244	.165	-.108	.312	-.062	.002
Efficiency 11	.411	.250	-.295	.043	.131	.074	.190	-.356	.157
Failure Response 1	.551	.124	.256	-.070	.246	.152	-.108	-.348	.036
Safety 17	-.129	.000	.029	-.002	.212	.067	.791	.063	-.003
Change Resistance 12	-.006	.207	.061	-.013	-.042	-.011	.786	-.060	-.037
Personal Motivtions 5	.134	.056	.612	-.015	-.081	.040	.196	-.023	.453

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	103.9237	142.8888	.2505	.7642
Q2	103.3897	142.2714	.2600	.7638
Q4	103.8247	143.6903	.2724	.7629
Q5	103.4412	141.6314	.3358	.7598
Q6	103.7691	140.0499	.3710	.7578
Q7	103.4598	141.0051	.2643	.7639
Q8	103.8330	143.1353	.2367	.7650
Q10	103.4082	142.4776	.3137	.7609
Q11	103.2557	141.9717	.3299	.7601
Q12	103.8165	143.4105	.2706	.7630
Q13	103.6165	144.6047	.1986	.7669
Q14	103.8289	145.2826	.1795	.7678
Q15	103.1835	141.0014	.4167	.7566
Q16	103.6412	143.5487	.3155	.7612
Q17	103.3732	141.7633	.3619	.7588
Q18	103.8495	146.0620	.1449	.7697
Q19	103.0866	140.8437	.4388	.7559
Q20	103.4351	142.4818	.3447	.7598
Q21	102.9711	143.3256	.2985	.7618
Q22	103.3485	143.9258	.2624	.7634
Q23	103.5216	144.2790	.2162	.7659
Q24	102.8639	142.0476	.3962	.7579
Q25	103.2515	141.4118	.3331	.7598
Q26	104.1031	143.2951	.2425	.7646
Q27	103.9443	143.9659	.2394	.7646
Q28	104.3134	148.0958	.0936	.7714
Q29	103.8247	144.3762	.2238	.7654
Q30	103.1134	141.4065	.3492	.7592
Q31	104.1814	146.2439	.1535	.7689
Q32	104.0474	146.7271	.1509	.7686
Q33	103.3072	143.3124	.3326	.7606

Reliability Coefficients

N of Cases = 485.0 N of Items = 31

Alpha = .7688

Fourth Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.807***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3547.416***
	df	***435***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.403***	***11.344***	***11.344***
	2	***2.187***	***7.290***	***18.634***
	3	***2.158***	***7.193***	***25.827***
	4	***1.811***	***6.038***	***31.865***
	5	***1.794***	***5.980***	***37.845***
	6	***1.696***	***5.653***	***43.497***
	7	***1.628***	***5.428***	***48.925***
	8	***1.546***	***5.154***	***54.080***
	9	***1.504***	***5.012***	***59.092***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.728	-.102	-.219	-.024	-.004	.059	.032	.076	.181
Comfort 2	.681	-.012	-.075	.063	-.183	.087	-.067	.089	.134
Personal motivations 4	.131	.025	.043	.108	.101	-.022	-.055	.779	.138
Time saving 2	.496	.274	-.064	-.108	-.026	.106	-.036	.266	.222
Rationality 2	.630	.162	-.155	.008	.124	.074	.059	.073	.107
Failure Response 6	.716	.143	-.010	-.155	.118	.000	-.094	-.128	-.098
Design 15	.441	-.055	-.081	.247	.300	-.064	-.001	-.041	-.196
Technological dependency 9	.042	.046	.004	.173	-.018	.830	.105	.083	.017
Convenience 7	.151	.253	-.065	-.057	.055	.689	-.074	.078	.219
Personal Motivations 3	-.132	.215	.013	.158	-.021	.413	-.042	.635	-.026
Human Interaction 4	-.073	.085	.820	.044	.073	-.006	-.016	-.095	.039
Human Interaction 6	-.151	-.039	.771	-.005	.170	-.019	.103	.065	.102
Technological Dependency 11	.196	.468	.240	.075	-.017	.374	.014	-.104	.169
Convenience 8	.126	.236	.128	.044	.054	.150	-.006	.105	.664
Time Saving 4	.099	.159	.162	.352	-.040	.235	.041	.121	.526
Efficiency 5	-.215	-.060	.567	.239	-.012	.006	.269	.162	-.017
Time Saving 6	.132	.661	.063	.251	-.028	.143	.045	.058	.280
Comfort 3	.053	.652	-.153	.205	.076	.137	-.006	.091	.131
Failure Response 2	.542	.336	.004	.066	.152	-.050	-.095	-.180	-.222
Rationality 3	-.070	.162	-.044	.728	.085	.009	-.029	.122	.148
Design 2	-.207	-.052	.388	.645	.108	.076	.097	.015	.009
Technological dependency 13	.193	.353	.065	.603	-.030	.141	-.035	.048	-.005
Safety 16	.070	.049	.253	.121	.564	.111	-.081	.140	.027
Safety 18	.127	-.036	-.027	-.037	.695	-.043	.345	-.130	.139
Design 14	.039	-.007	.077	.035	.766	-.032	.043	.040	-.128
Efficiency 11	.378	-.240	.250	.047	.177	.071	.183	.138	-.397
Failure Response 1	.517	.272	.119	-.091	.237	.139	-.126	.035	-.386
Safety 17	-.119	.033	.005	.008	.221	.063	.798	-.001	.063
Change Resistance 12	.000	.058	.205	.001	-.037	-.016	.796	-.040	-.069
Personal Motivtions 5	.127	.599	.044	-.051	-.111	.020	.181	.467	-.040

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	101.2062	139.0194	.2602	.7665
Q2	100.6722	138.3448	.2717	.7659
Q4	101.1072	139.9720	.2772	.7655
Q5	100.7237	137.4731	.3589	.7614
Q6	101.0515	136.1854	.3827	.7599
Q7	100.7423	137.1049	.2746	.7661
Q8	101.1155	139.6395	.2332	.7680
Q10	100.6907	138.5529	.3275	.7630
Q11	100.5381	137.9226	.3489	.7619
Q12	101.0990	139.6265	.2780	.7654
Q13	100.8990	141.4712	.1815	.7706
Q14	101.1113	142.2768	.1572	.7717
Q15	100.4660	137.3031	.4228	.7591
Q16	100.9237	139.7070	.3266	.7635
Q17	100.6557	137.9907	.3703	.7612
Q18	101.1320	143.0239	.1241	.7737
Q19	100.3691	136.7953	.4613	.7576
Q20	100.7175	138.5585	.3595	.7618
Q21	100.2536	139.5533	.3060	.7642
Q22	100.6309	140.4358	.2579	.7664
Q23	100.8041	141.2653	.1945	.7698
Q24	100.1464	138.1955	.4092	.7601
Q25	100.5340	137.9808	.3277	.7629
Q26	101.3856	140.1961	.2246	.7683
Q27	101.2268	140.8617	.2205	.7683
Q29	101.1072	141.3356	.2023	.7692
Q30	100.3959	137.6611	.3562	.7615
Q31	101.4639	143.0013	.1390	.7724
Q32	101.3299	143.5521	.1326	.7723
Q33	100.5897	139.3334	.3504	.7625

Reliability Coefficients

N of Cases = 485.0 N of Items = 30

Alpha = .7714

Fifth Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.801***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3367.479***
	df	***406***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.420***	***11.792***	***11.792***
	2	***2.129***	***7.341***	***19.133***
	3	***1.856***	***6.399***	***25.532***
	4	***1.819***	***6.272***	***31.804***
	5	***1.796***	***6.195***	***37.998***
	6	***1.704***	***5.876***	***43.874***
	7	***1.590***	***5.481***	***49.356***
	8	***1.518***	***5.233***	***54.589***
	9	***1.511***	***5.211***	***59.799***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.737	-.121	-.205	-.019	.002	.060	.034	.179	.080
Comfort 2	.682	-.026	-.079	.070	-.165	.094	-.068	.133	.082
Personal motivations 4	.122	.016	.037	.124	.067	-.023	-.031	.135	.802
Time saving 2	.498	.270	-.044	-.109	-.028	.100	-.032	.225	.271
Rationality 2	.636	.150	-.134	.007	.129	.072	.058	.109	.077
Failure Response 6	.720	.130	.036	-.145	.129	.007	-.092	-.101	-.125
Design 15	.409	-.022	-.097	.212	.372	-.030	-.047	-.189	-.070
Technological dependency 9	.051	.042	.005	.183	-.023	.831	.105	.019	.066
Convenience 7	.167	.252	-.033	-.057	.046	.688	-.077	.222	.065
Personal Motivations 3	-.147	.241	-.028	.147	-.008	.439	-.061	-.021	.603
Human Interaction 4	-.098	.063	.827	.088	.048	-.005	.022	.036	-.070
Human Interaction 6	-.174	-.063	.778	.047	.134	-.010	.145	.091	.093
Technological Dependency 11	.204	.453	.258	.093	-.024	.372	.022	.173	-.109
Convenience 8	.124	.224	.139	.046	.036	.137	.003	.670	.116
Time Saving 4	.084	.161	.129	.345	-.025	.237	.032	.537	.111
Time Saving 6	.140	.658	.061	.252	-.028	.135	.043	.292	.049
Comfort 3	.067	.662	-.143	.199	.091	.157	-.031	.133	.057
Failure Response 2	.565	.307	.054	.087	.134	-.068	-.073	-.218	-.156
Rationality 3	-.069	.156	-.071	.732	.089	.020	-.036	.148	.112
Design 2	-.231	-.064	.351	.661	.104	.071	.115	.016	.031
Technological dependency 13	.209	.319	.080	.632	-.053	.132	-.008	-.004	.063
Safety 16	.081	.014	.304	.155	.502	.089	-.040	.029	.189
Safety 18	.121	-.032	-.013	-.049	.705	-.040	.329	.146	-.123
Design 14	.020	.016	.082	.012	.790	-.014	.013	-.117	.034
Efficiency 11	.352	-.245	.246	.061	.189	.077	.197	-.395	.156
Failure Response 1	.529	.252	.162	-.077	.215	.117	-.102	-.374	.064
Safety 17	-.130	.032	-.025	.008	.223	.058	.800	.068	.005
Change Resistance 12	-.013	.045	.179	.025	-.039	-.018	.818	-.070	-.028
Personal Motivtions 5	.132	.604	.035	-.035	-.115	.035	.182	-.039	.450

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	97.9712	134.3579	.2931	.7691
Q2	97.4383	133.8714	.2970	.7690
Q4	97.8683	136.3538	.2716	.7702
Q5	97.4856	133.2730	.3784	.7648
Q6	97.8148	131.7924	.4095	.7629
Q7	97.5103	132.2215	.3105	.7684
Q8	97.8827	135.4439	.2478	.7717
Q10	97.4588	134.6158	.3335	.7671
Q11	97.3045	133.6761	.3692	.7654
Q12	97.8621	136.2139	.2647	.7705
Q13	97.6646	138.5821	.1492	.7768
Q14	97.8786	139.2986	.1269	.7778
Q15	97.2325	133.4613	.4270	.7632
Q16	97.6852	136.0306	.3235	.7680
Q17	97.4198	134.5368	.3588	.7661
Q19	97.1317	133.1331	.4596	.7621
Q20	97.4835	134.4606	.3748	.7655
Q21	97.0185	135.1893	.3322	.7674
Q22	97.3971	136.7884	.2525	.7711
Q23	97.5679	138.4067	.1608	.7760
Q24	96.9136	134.2234	.4185	.7640
Q25	97.2984	134.3294	.3248	.7675
Q26	98.1502	136.4124	.2254	.7728
Q27	97.9918	137.2247	.2153	.7730
Q29	97.8724	137.6167	.2000	.7738
Q30	97.1584	133.6017	.3702	.7653
Q31	98.2243	139.8279	.1154	.7780
Q32	98.0926	140.2863	.1112	.7777
Q33	97.3539	135.5735	.3512	.7668

Reliability Coefficients

N of Cases = 486.0 N of Items = 29

Alpha = .7756

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	95.1193	129.8208	.3025	.7712
Q2	94.5864	129.1090	.3144	.7706
Q4	95.0165	131.8884	.2782	.7724
Q5	94.6337	128.7233	.3904	.7667
Q6	94.9630	127.3100	.4192	.7649
Q7	94.6584	127.3676	.3302	.7699
Q8	95.0309	130.9331	.2554	.7739
Q10	94.6070	130.4246	.3298	.7699
Q11	94.4527	129.2380	.3763	.7675
Q12	95.0103	131.8246	.2680	.7729
Q13	94.8128	134.3463	.1451	.7797
Q14	95.0267	135.3374	.1123	.7812
Q15	94.3807	129.1105	.4313	.7655
Q16	94.8333	131.7062	.3246	.7705
Q17	94.5679	130.2129	.3608	.7685
Q19	94.2798	128.8782	.4598	.7645
Q20	94.6317	130.0929	.3789	.7678
Q21	94.1667	130.5515	.3474	.7692
Q22	94.5453	132.5289	.2502	.7738
Q23	94.7160	134.2450	.1540	.7790
Q24	94.0617	129.7859	.4267	.7661
Q25	94.4465	130.2229	.3180	.7704
Q26	95.2984	132.8448	.1980	.7769
Q27	95.1399	133.1804	.2044	.7762
Q29	95.0206	133.4800	.1925	.7768
Q30	94.3066	129.0254	.3831	.7672
Q32	95.2407	136.9543	.0692	.7823
Q33	94.5021	131.3062	.3501	.7694

Reliability Coefficients

N of Cases = 486.0 N of Items = 28

Alpha = .7780

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	92.1358	126.7320	.3139	.7752
Q2	91.6029	125.9471	.3284	.7744
Q4	92.0329	128.9969	.2821	.7768
Q5	91.6502	125.7454	.3991	.7709
Q6	91.9794	124.4161	.4248	.7692
Q7	91.6749	124.4054	.3369	.7741
Q8	92.0473	128.0617	.2581	.7784
Q10	91.6235	127.6538	.3291	.7745
Q11	91.4691	126.3197	.3825	.7718
Q12	92.0267	128.8508	.2751	.7772
Q13	91.8292	131.8574	.1325	.7849
Q14	92.0432	132.9569	.0952	.7867
Q15	91.3971	126.3512	.4309	.7701
Q16	91.8498	128.8413	.3278	.7748
Q17	91.5844	127.4393	.3604	.7731
Q19	91.2963	126.0399	.4633	.7689
Q20	91.6481	127.1481	.3864	.7720
Q21	91.1831	127.6509	.3525	.7735
Q22	91.5617	129.5952	.2555	.7781
Q23	91.7325	131.8005	.1395	.7844
Q24	91.0782	126.9176	.4312	.7705
Q25	91.4630	127.4780	.3164	.7751
Q26	92.3148	130.4141	.1838	.7823
Q27	92.1564	130.4538	.2009	.7810
Q29	92.0370	130.8605	.1846	.7818
Q30	91.3230	126.0542	.3915	.7713
Q33	91.5185	128.6502	.3436	.7742

Reliability Coefficients

N of Cases = 486.0 N of Items = 27

Alpha = .7823

Sixth Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.812***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3123.043***
	df	***351***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.401***	***12.595***	***12.595***
	2	***2.139***	***7.922***	***20.518***
	3	***1.869***	***6.921***	***27.439***
	4	***1.826***	***6.764***	***34.203***
	5	***1.785***	***6.611***	***40.814***
	6	***1.715***	***6.353***	***47.167***
	7	***1.504***	***5.569***	***52.737***
	8	***1.498***	***5.549***	***58.286***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.736	-.121	-.184	-.022	.023	.062	.084	.180
Comfort 2	.691	-.028	-.074	.075	-.175	.092	.080	.125
Personal motivations 4	.122	.024	.036	.129	.048	-.021	.803	.130
Time saving 2	.503	.271	-.050	-.096	-.034	.103	.270	.212
Rationality 2	.623	.153	-.127	-.001	.170	.081	.082	.118
Failure Response 6	.722	.129	.016	-.132	.126	.009	-.124	-.115
Design 15	.398	-.025	-.117	.218	.384	-.023	-.062	-.190
Technological dependency 9	.038	.041	.024	.168	-.001	.835	.066	.028
Convenience 7	.176	.252	-.051	-.039	.017	.688	.065	.196
Personal Motivations 3	-.147	.246	-.033	.147	-.036	.438	.600	-.031
Human Interaction 4	-.097	.073	.823	.089	.024	-.008	-.079	.028
Human Interaction 6	-.182	-.048	.798	.036	.133	-.012	.088	.095
Technological Dependency 11	.202	.458	.255	.093	-.021	.374	-.115	.166
Convenience 8	.125	.242	.136	.042	.041	.141	.114	.662
Time Saving 4	.078	.168	.123	.341	-.009	.246	.109	.541
Time Saving 6	.141	.659	.068	.257	-.032	.138	.043	.281
Comfort 3	.068	.665	-.146	.204	.081	.158	.055	.117
Failure Response 2	.568	.301	.045	.102	.119	-.069	-.156	-.234
Rationality 3	-.061	.149	-.063	.745	.051	.018	.113	.132
Design 2	-.251	-.067	.355	.648	.129	.081	.031	.038
Technological dependency 13	.206	.311	.084	.633	-.060	.135	.058	-.005
Safety 16	.097	.012	.308	.192	.430	.084	.195	-.016
Safety 18	.087	-.020	.034	-.070	.786	-.025	-.107	.168
Design 14	.011	.025	.083	.024	.777	-.011	.047	-.138
Efficiency 11	.329	-.242	.288	.038	.228	.079	.160	-.371
Failure Response 1	.539	.249	.160	-.056	.169	.109	.063	-.406
Personal Motivtions 5	.113	.604	.051	-.048	-.068	.044	.445	-.018

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	88.9487	118.2134	.3005	.7710
Q2	88.4127	117.3334	.3210	.7698
Q4	88.8419	119.8824	.2913	.7714
Q5	88.4641	117.1175	.3895	.7661
Q6	88.7906	116.0589	.4083	.7648
Q7	88.4825	116.5342	.3063	.7711
Q10	88.4292	118.4677	.3427	.7687
Q11	88.2772	117.2748	.3928	.7660
Q12	88.8337	119.6575	.2873	.7716
Q13	88.6345	122.6809	.1380	.7802
Q14	88.8522	123.5378	.1090	.7816
Q15	88.2033	117.3392	.4403	.7642
Q16	88.6550	119.6174	.3427	.7691
Q17	88.3901	118.3166	.3724	.7673
Q19	88.1027	116.9689	.4768	.7628
Q20	88.4559	118.1951	.3920	.7665
Q21	87.9979	119.0679	.3362	.7691
Q22	88.3696	120.5874	.2590	.7730
Q23	88.5400	122.7469	.1409	.7798
Q24	87.8850	117.9703	.4372	.7648
Q25	88.2710	118.6013	.3173	.7700
Q26	89.1232	121.7955	.1704	.7784
Q27	88.9630	122.0357	.1784	.7775
Q29	88.8439	122.3748	.1645	.7782
Q30	88.1376	117.5510	.3753	.7669
Q33	88.3265	119.5125	.3561	.7685

Reliability Coefficients

N of Cases = 487.0 N of Items = 26

Alpha = .7777

Seventh Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.815***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***2987.644***
	df	***325***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.291***	***12.659***	***12.659***
	2	***2.136***	***8.214***	***20.873***
	3	***1.839***	***7.071***	***27.944***
	4	***1.826***	***7.022***	***34.966***
	5	***1.707***	***6.566***	***41.532***
	6	***1.703***	***6.551***	***48.083***
	7	***1.494***	***5.747***	***53.831***
	8	***1.476***	***5.678***	***59.509***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.746	-.127	-.203	.001	.057	.035	.074	.155
Comfort 2	.694	-.033	-.079	.086	.092	-.169	.075	.114
Personal motivations 4	.130	.023	.025	.141	-.026	.062	.800	.125
Time saving 2	.512	.280	-.032	-.115	.088	-.054	.276	.198
Rationality 2	.628	.152	-.132	.004	.077	.167	.076	.102
Failure Response 6	.711	.130	.035	-.148	.014	.105	-.122	-.115
Technological dependency 9	.038	.039	.012	.180	.834	.011	.064	.030
Convenience 7	.183	.257	-.049	-.041	.684	.015	.068	.192
Personal Motivations 3	-.151	.255	-.019	.126	.438	-.046	.607	-.014
Human Interaction 4	-.104	.078	.837	.078	-.006	.026	-.072	.038
Human Interaction 6	-.173	-.048	.793	.045	-.016	.155	.089	.091
Technological Dependency 11	.203	.458	.258	.097	.377	-.016	-.117	.161
Convenience 8	.133	.249	.132	.047	.142	.055	.108	.659
Time Saving 4	.080	.178	.133	.322	.245	-.011	.111	.552
Time Saving 6	.146	.661	.071	.260	.137	-.029	.040	.273
Comfort 3	.071	.669	-.141	.200	.155	.074	.053	.111
Failure Response 2	.579	.274	.009	.147	-.074	.137	-.165	-.275
Rationality 3	-.063	.147	-.071	.743	.016	.049	.112	.137
Design 2	-.258	-.067	.353	.639	.080	.125	.035	.052
Technological dependency 13	.203	.297	.064	.660	.141	-.045	.048	-.014
Safety 16	.107	-.003	.264	.244	.083	.462	.179	-.045
Safety 18	.100	-.024	.001	-.044	-.030	.806	-.121	.146
Design 14	.008	.025	.073	.022	-.009	.775	.042	-.139
Efficiency 11	.315	-.250	.291	.032	.089	.227	.159	-.359
Failure Response 1	.548	.225	.129	-.012	.103	.184	.052	-.439
Personal Motivtions 5	.118	.606	.055	-.040	.044	-.062	.441	-.030

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

Reliability

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	85.7433	113.1624	.2929	.7722
Q2	85.2074	112.1359	.3199	.7706
Q4	85.6366	114.6475	.2895	.7721
Q5	85.2587	111.7724	.3953	.7662
Q6	85.5852	110.9017	.4069	.7653
Q7	85.2772	111.6740	.2938	.7728
Q10	85.2238	113.0877	.3488	.7689
Q11	85.0719	111.7500	.4067	.7657
Q12	85.6283	114.1887	.2960	.7718
Q13	85.4292	117.4924	.1319	.7815
Q14	85.6468	118.5252	.0953	.7833
Q15	84.9979	111.9156	.4508	.7641
Q16	85.4497	114.0422	.3582	.7689
Q17	85.1848	112.8423	.3835	.7673
Q19	84.8973	111.3433	.4985	.7621
Q20	85.2505	112.6449	.4074	.7662
Q21	84.7926	114.0906	.3234	.7704
Q22	85.1643	115.0635	.2694	.7732
Q23	85.3347	117.3754	.1420	.7806
Q24	84.6797	112.5844	.4456	.7649
Q25	85.0657	113.4607	.3127	.7709
Q26	85.9179	116.8327	.1563	.7801
Q27	85.7577	117.1346	.1608	.7793
Q30	84.9322	112.8781	.3510	.7688
Q33	85.1211	114.0203	.3678	.7685

Reliability Coefficients

N of Cases = 487.0 N of Items = 25

Alpha = .7782

Final Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.816***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***2890.021***
	df	***300***
	Sig.	***.000***

Again, in this table it is important to notice two statistical figures; first, the KMO measure of sampling adequacy which "is an index used to examine the appropriateness of factor analysis" (Malhotra, 1996); a high value of .816 means that factor analysis is appropriate. We need to remember that significance level gives the result of the test. Very small values (less than .05) indicate that there are probably significant relationships among current variables.

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.231***	***12.923***	***12.923***
	2	***2.074***	***8.298***	***21.221***
	3	***1.809***	***7.237***	***28.458***
	4	***1.799***	***7.198***	***35.656***
	5	***1.689***	***6.757***	***42.412***
	6	***1.638***	***6.552***	***48.964***
	7	***1.517***	***6.067***	***55.032***
	8	***1.461***	***5.844***	***60.876***

Extraction Method: Principal Component Analysis.

Second, to maintain a balance between reliability and explained variance, we decided to stay with 25 final items explaining 60% of total variance.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.741	-.138	-.210	2.E-03	6.E-02	3.E-02	7.E-02	.172
Comfort 2	.696	-.052	-.082	9.E-02	1.E-01	-.174	7.E-02	.123
Personal motivations 4	.130	-.007	2.E-02	.143	-.031	6.E-02	.797	.144
Time saving 2	.518	.237	-.029	-.113	.105	-.071	.294	.196
Rationality 2	.632	.137	-.130	3.E-03	8.E-02	.164	9.E-02	.114
Failure Response 6	.723	.117	4.E-02	-.146	2.E-02	.104	-.109	-.105
Technological dependency 9	4.E-02	5.E-02	1.E-02	.178	.828	1.E-02	6.E-02	5.E-02
Convenience 7	.189	.233	-.043	-.040	.697	4.E-03	8.E-02	.187
Personal Motivations 3	-.150	.243	-.021	.124	.429	-.046	.612	4.E-03
Human Interaction 4	-.085	6.E-02	.851	8.E-02	5.E-03	1.E-02	-.058	3.E-02
Human Interaction 6	-.170	-.040	.790	4.E-02	-.027	.150	8.E-02	.112
Technological Dependency 11	.202	.465	.253	8.E-02	.370	-.025	-.102	.180
Convenience 8	.101	.272	.104	2.E-02	.110	5.E-02	1.E-01	.699
Time Saving 4	5.E-02	.201	.103	.304	.223	-.029	9.E-02	.596
Time Saving 6	.141	.659	7.E-02	.246	.134	-.046	6.E-02	.288
Comfort 3	6.E-02	.701	-.159	.180	.129	7.E-02	6.E-02	.151
Failure Response 2	.585	.294	5.E-03	.143	-.086	.143	-.158	-.241
Rationality 3	-.071	.162	-.074	.737	7.E-03	4.E-02	.108	.157
Design 2	-.247	-.072	.367	.644	9.E-02	.113	4.E-02	5.E-02
Technological dependency 13	.210	.298	7.E-02	.657	.143	-.056	6.E-02	3.E-03
Safety 16	.152	-.080	.314	.272	.137	.441	.218	-.092
Safety 18	1.E-01	-.011	5.E-03	-.041	-.037	.805	-.119	.164
Design 14	2.E-02	2.E-02	9.E-02	3.E-02	-.006	.777	5.E-02	-.128
Failure Response 1	.561	.233	.126	-.009	1.E-01	.188	6.E-02	-.402
Personal Motivtions 5	.134	.565	7.E-02	-.040	6.E-02	-.075	.476	-.036

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

We have finally 8 components extracted with 25 variables involved.

Removed items and factor loadings in Factor Analysis first approach

Item #	Item Name	C1	C2	C3	C4	C5	C6	C7	C8
1.	Ubiquity 5	X							
2.	Comfort 2	X							
3.	Human interaction 2								
4.	Personal motivations 4							X	
5.	Time saving 2	X							
6.	Rationality 2	X							
7.	Failure response 6	X							
8.	Design 15								
9.	Change resistance 2								
10.	Dependence/Independence 9					X			
11.	Convenience 7					X			
12.	Personal motivations 3							X	
13.	Human interaction 4			X					
14.	Human interaction 6			X					
15.	Dependence/Independence 11		X						
16.	Convenience 8								X
17.	Time saving 4								X
18.	Efficiency 5								
19.	Time saving 6		X						
20.	Comfort 3		X						
21.	Failure response 2	X							
22.	Rationality 3				X				
23.	Design 2				X				
24.	Dependence/Independence 13				X				
25.	Safety 16						X		
26.	Safety 18						X		
27.	Design 14						X		
28.	Change resistance 14								
29.	Efficiency 11								
30.	Failure response 1	X							
31.	Safety 17								
32.	Change resistance 12								
33.	Personal motivations 5		X						

Variables in red represent the deleted variables. The X's show each single variable inclusion for each component.

Grouping Variables by component

Component 1

1. While purchasing, the fundamental thing is product availability, the problem is that in stores, in several times, products are not available; whereas on Internet there are so many companies offering the same product that somebody will have it for sure.
2. Purchasing through Self Service Technologies let me avoid traffic, find a parking lot or wait in lines.
5. With automated services people are going to spend less time. They are faster than personally deal with somebody.
6. Through Self Service Technologies like Internet you can compare prices of what you are looking for so you can adjust to your budget.

7. When technology fails it should be easy to interact personally with somebody in case of failures or doubts.
21. Automated services should offer alternatives when they fail.

30. We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.

Component 2

15. There is a great trend that forces you to move at the speed of technology, and people use that tool to make their life more comfortable.
19. One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.
20. What I like from Self Service Technologies is that I can do other things while waiting for somebody to attend me.
33. I am always looking for the benefits that novelty in technology can give me.

Component 3

13. It's uncomfortable to talk with a machine, personal service is more agreeable.

14. It is very upsetting to be waiting a recording machine to attend me.

Component 4

22. The advantage of using Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.
23. Automated services would be easier and simpler if they offer only basic and repetitive operations.
24. I like the idea of doing business via self service technologies because I'm not limited to regular business hours

Component 5

10. Use of automated systems provides a sensation of control and independence to me.
11. The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.

Component 6

25. I worry that information I send over the internet will be seen by other people or institution.
26. If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.
27. I don't like automated services because companies' don't care of infrastructures operating around them; for example, maintaining ATM's clean.

Component 7

4. Compared to others I am one of the first to understand self service technologies.

12. In general, I am among the first in my circle of friends to search for new technology when it appears.

Component 8

16. With Self Service Technologies, users will save money through price competition.

17. Personal attention implies losing time while doing lines and wait for somebody to understand to you; whereas in Internet this doesn't happen.

Items that didn't match

3. I don't feel safe if there is no person who endorses the operation I'm doing.

8. Design of ATM's is so bad that sometimes banks do not realize that sun shines very hard and it is not possible to see the monitor well.
9. The fact that I don't know the way SST's operate, generates a sense of frustration that increases my rejection to use them.
18. Failure in an automated service generates in me a feeling of rejection and frustration that I prefer no longer use it.
28. To accede to Self Service Technologies, you must have a strong need to use it or don't have any other alternative.
29. Technology systems always seems to fail at the worst possible time

31. If there are two automated tellers in a single room I prefer to leave and not use them due to safety reasons.
32. If there is not enough information about advantages and disadvantages of Self Service Technologies, I prefer to use personal services.

After reviewing the factorization of these items, we can see that component 1 have several items and they seems not so congruent between each other; to understand this a little bit more, we decided to run a particular factor analysis just for the seven items in Component 1. The outcome was the following:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.842***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***756.818***
	df	***21***
	Sig.	***.000***

Rotated Component Matrix[a]

	Component	
	1	**2**
Ubiquity 5	***.760***	***.188***
Comfort 2	***.747***	***.127***
Time saving 2	***.637***	***.103***
Rationality 2	***.622***	***.315***
Failure Response 6	***.506***	***.550***
Failure Response 2	***.165***	***.796***
Failure Response 1	***.137***	***.803***

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalizati

a. Rotation converged in 3 iterations.

So, it might be possible to separate component 1 in two different components after reviewing this additional factor analysis. This might be explained if we understood that the effect of the numerical relationship with the rest of the components it's separated since the starting analysis; at this time we're just trying to understand the effect of this component.

Naming the Components:

1. Ubiquity: you can be sure that you might buy your products when you needed, where you wanted, at the time and price you needed.

2. Failure Response: an appropriate response (personal or mechanical) in case of technological failures.

3. Technological Advantage: people's perception of technological payback.

4. Human Interaction: a person's need to be assisted by a human being when technology doesn't seem to have the expected answer.

5. Control: provides to users the sense of situational and operational domination.

6. Convenience: It gives a sense of productivity through an automated operation.

7. Safe Design: people's need to operate trough/in a trusty and appropriate automated service.

8. Novelty: people's readiness to interact with technology.

9. Profitability: a sense of profitability trough competitive prices and personnel reduction.

Reliability could increase if we continue deleting items to raise it. The problem is the explained variance; it was decreasing while deleting those items (Q13, Q14 and Q23).

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	% of Variance	Cumulative %
Component	1	*3.101*	*14.095*	*14.095*
	2	*2.428*	*11.035*	*25.130*
	3	*1.971*	*8.961*	*34.090*
	4	*1.715*	*7.794*	*41.884*
	5	*1.570*	*7.135*	*49.020*
	6	*1.319*	*5.994*	*55.014*

Extraction Method: Principal Component Analysis.

It is also true that we can obtain less components while deleting the rest of the items (Q26, Q27, Q25, and Q22) until it cant be impossible to increase reliability; but It get worst with the explained variance if we do so.

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	% of Variance	Cumulative %
Component	1	*2.960*	*16.443*	*16.443*
	2	*2.564*	*14.246*	*30.689*
	3	*1.900*	*10.557*	*41.246*
	4	*1.630*	*9.057*	*50.303*

Extraction Method: Principal Component Analysis.

Appendix 8

A. Complete Factor Analysis Second Approach (eliminating items with low factor loadings)

First Step

We started again with the specific and basic statistic analysis, including KMO and Bartlett's Test of Sphericity.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.807***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3900.397***
	df	***528***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.688***	***11.175***	***11.175***
	2	***2.235***	***6.772***	***17.947***
	3	***2.216***	***6.715***	***24.662***
	4	***1.893***	***5.737***	***30.399***
	5	***1.819***	***5.512***	***35.911***
	6	***1.798***	***5.450***	***41.360***
	7	***1.700***	***5.151***	***46.511***
	8	***1.682***	***5.097***	***51.608***
	9	***1.541***	***4.670***	***56.278***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
Ubiquity 5	.640	-7.636E-02	-.270	-1.063E-02	.110	1.922E-02	.182	9.478E-03	.124
Comfort 2	.613	3.278E-02	-.116	4.561E-02	8.634E-02	-.170	.133	-7.441E-02	.146
Human Interaction 2	2.812E-02	1.777E-02	.158	-2.130E-02	.679	-3.751E-02	-6.333E-02	-6.314E-03	2.168E-02
Personal motivations 4	.102	9.347E-02	2.687E-02	-1.933E-02	-6.604E-02	.132	.123	-5.090E-02	.794
Time saving 2	.523	-7.304E-03	-6.428E-02	.145	-.158	-1.633E-03	.313	-1.432E-02	.236
Rationality 2	.632	8.193E-02	-.175	7.673E-02	.110	7.696E-02	.176	5.672E-02	7.827E-02
Failure Response 6	.755	-7.884E-02	-2.589E-02	4.166E-02	4.974E-02	6.866E-02	-4.551E-02	-6.631E-02	-.116
Design 15	.397	.160	-.148	2.301E-02	.419	.210	-.142	-2.810E-02	-4.743E-02
Change Resistance 2	9.176E-02	-.127	6.163E-02	-1.887E-02	.651	.138	.138	8.559E-02	-.166
Technological dependency 9	-4.964E-03	.141	-2.762E-03	.801	6.992E-02	5.628E-04	3.409E-02	4.997E-02	8.765E-02
Convenience 7	.176	2.906E-02	-5.043E-02	.697	-.127	7.124E-02	.265	-6.241E-02	6.060E-02
Personal Motivations 3	-9.960E-02	.221	2.892E-02	.479	1.440E-02	-6.547E-02	1.230E-02	-3.768E-02	.613
Human Interaction 4	-4.731E-02	5.631E-02	.818	1.211E-02	5.522E-02	6.389E-02	5.843E-02	3.159E-03	-8.296E-02
Human Interaction 6	-.155	-5.032E-02	.751	-1.727E-02	.106	.172	.100	.112	7.987E-02
Technological Dependency 11	.276	.258	.265	.435	-.136	-4.188E-02	.213	8.834E-02	-9.951E-02
Convenience 8	.111	.118	.106	.163	-9.125E-03	3.241E-02	.693	1.429E-02	.104
Time Saving 4	2.262E-02	.329	.128	.222	4.652E-02	-2.673E-03	.563	2.296E-02	.130
Efficiency 5	-.260	.143	.533	3.860E-02	.216	-2.863E-02	-2.136E-02	.252	.180
Time Saving 6	.235	.489	.103	.253	-.252	-4.001E-02	.382	.120	1.504E-02
Comfort 3	.189	.480	-.110	.298	-.162	-2.855E-02	.170	9.880E-02	6.748E-02
Failure Response 2	.631	.232	3.471E-02	-2.702E-02	-9.323E-02	.135	-.151	-4.324E-02	-.176
Rationality 3	-.128	.722	-5.565E-02	4.424E-03	.146	7.741E-02	.130	-3.778E-02	.154
Design 2	-.296	.528	.364	2.079E-02	.264	.141	1.568E-02	4.542E-02	4.522E-02
Technological dependency 13	.194	.687	9.333E-02	.118	-.127	2.881E-02	4.428E-02	-3.629E-02	6.500E-02
Safety 16	8.329E-02	.135	.266	4.786E-02	1.527E-02	.599	7.926E-02	-.106	.135
Safety 18	.112	-5.324E-02	-6.441E-02	-2.647E-02	.111	.677	9.593E-02	.363	-.111
Design 14	6.443E-02	3.467E-02	6.322E-02	4.373E-03	.114	.738	-.131	6.085E-02	2.683E-02
Change Resisance 14	-9.913E-02	3.781E-02	.243	-.152	.412	.221	[illegible]	.271	5.279E-02
Efficiency 11	.320	-7.764E-02	.203	3.755E-02	.284	.185	-.394	.154	.173
Failure Response 1	.625	5.685E-02	.157	.154	-.108	.237	[illegible]	-8.962E-02	1.488E-02
Safety 17	-.140	1.416E-02	-3.919E-03	5.749E-02	-2.038E-02	.238	4.173E-02	.787	6.786E-03
Change Resistance 12	-6.189E-03	8.431E-03	.198	1.254E-02	.110	-4.960E-02	2.409E-02	.778	-3.524E-02
Personal Motivtions 5	.285	.227	.116	.120	-.293	-.150	.106	.242	.408

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

The main difference here with the initial procedure, was the idea of taking off the all those variables that didn't load well or have unclear loadings, but step by step; this means that we took away first the most unclear variable and start the analysis again. At this step it was variable **Efficiency 11.**

Second Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.807***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3761.863***
	df	***496***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.557***	***11.114***	***11.114***
	2	***2.725***	***8.515***	***19.629***
	3	***2.203***	***6.884***	***26.513***
	4	***2.022***	***6.320***	***32.833***
	5	***1.784***	***5.576***	***38.409***
	6	***1.732***	***5.412***	***43.821***
	7	***1.667***	***5.209***	***49.031***
	8	***1.600***	***5.000***	***54.030***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.628	.124	-.286	-7.604E-02	-1.214E-02	.134	3.157E-02	9.120E-02
Comfort 2	.608	.137	-.121	1.964E-02	-.175	.102	-6.922E-02	.136
Human Interaction 2	5.034E-02	-9.273E-02	.188	1.722E-02	-1.566E-02	.678	-1.372E-02	6.316E-02
Personal motivations 4	.101	6.333E-02	1.375E-02	8.765E-02	.110	-3.975E-02	-2.545E-02	.768
Time saving 2	.513	.321	-8.445E-02	-3.069E-02	-4.503E-02	-.130	1.320E-02	.232
Rationality 2	.635	.180	-.175	6.252E-02	5.650E-02	.130	7.671E-02	9.261E-02
Failure Response 6	.762	1.603E-02	-2.226E-02	-9.789E-02	8.282E-02	5.167E-02	-6.565E-02	-9.868E-02
Design 15	.406	-6.303E-02	-.135	.158	.239	.404	-3.645E-02	-3.226E-02
Change Resistance 2	8.614E-02	6.288E-02	6.064E-02	-.109	.111	.660	9.910E-02	-.183
Technological dependency 9	-3.058E-02	.645	-7.902E-03	5.296E-02	.105	3.549E-02	-3.088E-02	.146
Convenience 7	.148	.712	-7.318E-02	-4.658E-02	.108	-.133	-9.787E-02	9.947E-02
Personal Motivations 3	-.101	.356	3.492E-02	.159	3.226E-03	3.579E-03	-7.972E-02	.669
Human Interaction 4	-3.747E-02	6.913E-02	.823	4.057E-02	6.318E-02	5.414E-02	2.976E-03	-6.982E-02
Human Interaction 6	-.159	7.271E-02	.742	-5.282E-02	.155	.111	.119	5.894E-02
Technological Dependency 11	.262	.511	.256	.200	-2.013E-02	-.146	6.292E-02	-6.658E-02
Convenience 8	7.829E-02	.597	6.245E-02	.114	-7.933E-02	3.473E-02	6.878E-02	5.807E-02
Time Saving 4	-1.312E-02	.580	8.884E-02	.321	-7.783E-02	6.723E-02	5.080E-02	8.490E-02
Efficiency 5	-.256	2.643E-02	.544	.134	-5.929E-03	.207	.233	.187
Time Saving 6	.226	.485	9.012E-02	.453	-7.969E-02	-.244	.135	3.650E-02
Comfort 3	.184	.367	-.111	.441	-2.496E-02	-.171	9.111E-02	.108
Failure Response 2	.633	-5.707E-02	3.365E-02	.224	.160	-.112	-5.219E-02	-.182
Rationality 3	-.126	.133	-5.332E-02	.725	6.347E-02	.139	-2.821E-02	.151
Design 2	-.285	6.134E-02	.377	.523	.156	.251	3.744E-02	5.539E-02
Technological dependency 13	.193	.191	9.210E-02	.665	4.514E-02	-.146	-4.727E-02	7.200E-02
Safety 16	9.621E-02	9.891E-02	.263	.117	.581	2.733E-02	-7.660E-02	.150
Safety 18	.109	5.291E-02	-7.122E-02	-4.837E-02	.637	.126	.397	-.127
Design 14	7.500E-02	-7.008E-02	6.532E-02	3.035E-02	.748	.110	7.440E-02	2.946E-02
Change Resisance 14	-.104	-.201	.247	6.244E-02	.245	.398	.256	5.008E-03
Failure Response 1	.622	-1.453E-02	.152	2.696E-02	.307	-.141	-.126	1.769E-02
Safety 17	-.152	8.428E-02	-1.660E-03	8.244E-03	.229	-2.111E-02	.783	-1.545E-04
Change Resistance 12	-8.711E-04	-2.256E-02	.220	-1.560E-03	-3.962E-02	.110	.764	-1.631E-02
Personal Motivtions 5	.303	.153	.131	.185	-.152	-.279	.249	.467

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

We can notice the impact of first eliminated variable, there was at least one variable that showed better and clear loadings; although we need to continue removing those who don't.

Third Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.804***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3614.336***
	df	***465***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.548***	***11.444***	***11.444***
	2	***2.655***	***8.565***	***20.008***
	3	***2.174***	***7.012***	***27.020***
	4	***2.052***	***6.619***	***33.639***
	5	***1.753***	***5.654***	***39.293***
	6	***1.615***	***5.211***	***44.504***
	7	***1.613***	***5.204***	***49.708***
	8	***1.583***	***5.106***	***54.814***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.620	.138	-.287	-8.188E-02	3.527E-04	2.152E-02	8.097E-02	.137
Comfort 2	.602	.149	-.124	1.444E-02	-.167	-7.764E-02	.128	.106
Human Interaction 2	3.289E-02	-.111	.204	1.932E-02	8.903E-04	1.790E-03	6.542E-02	.698
Personal motivations 4	9.460E-02	6.638E-02	1.286E-02	8.364E-02	.115	-3.133E-02	.764	-3.605E-02
Time saving 2	.517	.311	-9.058E-02	-1.641E-02	-5.078E-02	2.676E-02	.244	-.101
Rationality 2	.628	.178	-.175	6.621E-02	6.507E-02	7.892E-02	9.243E-02	.148
Failure Response 6	.763	9.836E-03	-2.559E-02	-8.966E-02	8.184E-02	-5.749E-02	-9.241E-02	7.113E-02
Design 15	.396	-8.586E-02	-.128	.169	.244	-1.965E-02	-2.213E-02	.432
Change Resistance 2	7.299E-02	4.556E-02	7.525E-02	-.103	.123	.115	-.179	.675
Technological dependency 9	-2.886E-02	.644	-2.248E-03	5.911E-02	.109	-2.758E-02	.145	3.992E-02
Convenience 7	.158	.714	-7.597E-02	-3.632E-02	9.722E-02	-9.601E-02	.103	-.134
Personal Motivations 3	-.103	.353	3.507E-02	.162	-9.658E-04	-7.957E-02	.670	5.475E-03
Human Interaction 4	-3.259E-02	6.514E-02	.825	4.131E-02	6.077E-02	4.130E-03	-6.971E-02	3.680E-02
Human Interaction 6	-.158	7.321E-02	.747	-5.599E-02	.158	.116	5.455E-02	8.794E-02
Technological Dependency 11	.269	.517	.251	.204	-2.866E-02	5.606E-02	-6.838E-02	-.161
Convenience 8	7.872E-02	.599	6.474E-02	.118	-7.529E-02	6.996E-02	5.663E-02	3.782E-02
Time Saving 4	-1.448E-02	.576	9.138E-02	.327	-7.608E-02	5.370E-02	8.607E-02	7.224E-02
Efficiency 5	-.262	1.930E-02	.551	.131	5.987E-04	.234	.184	.196
Time Saving 6	.232	.464	8.539E-02	.471	-8.705E-02	.152	5.225E-02	-.215
Comfort 3	.187	.358	-.117	.451	-3.273E-02	9.488E-02	.115	-.160
Failure Response 2	.635	-6.067E-02	2.767E-02	.229	.156	-5.194E-02	-.179	-.104
Rationality 3	-.138	.134	-4.921E-02	.718	7.100E-02	-3.912E-02	.143	.133
Design 2	-.296	5.992E-02	.385	.515	.163	2.820E-02	4.764E-02	.231
Technological dependency 13	.192	.179	8.976E-02	.672	4.538E-02	-4.297E-02	7.827E-02	-.128
Safety 16	9.624E-02	8.902E-02	.268	.122	.584	-7.245E-02	.155	3.148E-02
Safety 18	.103	5.216E-02	-6.457E-02	-4.834E-02	.647	.391	-.131	.115
Design 14	7.229E-02	-7.436E-02	7.123E-02	3.066E-02	.749	6.924E-02	2.865E-02	9.542E-02
Failure Response 1	.628	-1.959E-02	.146	3.408E-02	.299	-.123	2.428E-02	-.134
Safety 17	-.158	7.935E-02	1.554E-03	1.002E-02	.241	.782	-1.018E-03	-2.548E-02
Change Resistance 12	-9.144E-03	-3.152E-02	.222	8.585E-04	-2.919E-02	.767	-1.524E-02	.109
Personal Motivtions 5	.308	.131	.122	.202	-.161	.267	.485	-.246

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Fourth Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.805***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3474.086***
	df	***435***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.407***	***11.357***	***11.357***
	2	***2.752***	***9.174***	***20.531***
	3	***2.170***	***7.233***	***27.763***
	4	***1.949***	***6.498***	***34.261***
	5	***1.713***	***5.710***	***39.971***
	6	***1.610***	***5.366***	***45.337***
	7	***1.606***	***5.354***	***50.691***
	8	***1.495***	***4.982***	***55.674***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.634	.116	-.318	-4.787E-02	4.034E-03	2.370E-02	8.337E-02	.182
Comfort 2	.611	.142	-.147	3.399E-02	-.164	-7.415E-02	.128	.135
Human Interaction 2	6.551E-02	-.127	.187	7.071E-02	1.718E-02	5.936E-03	6.603E-02	.716
Personal motivations 4	9.969E-02	5.775E-02	-1.120E-03	.104	.109	-2.690E-02	.768	-1.480E-02
Time saving 2	.513	.309	-7.894E-02	-6.156E-02	-5.329E-02	2.641E-02	.245	-.138
Rationality 2	.635	.178	-.188	6.765E-02	6.989E-02	8.046E-02	9.122E-02	.144
Failure Response 6	.749	2.644E-02	-1.692E-02	-.119	8.351E-02	-5.724E-02	-9.571E-02	2.678E-02
Change Resistance 2	8.906E-02	3.953E-02	7.710E-02	-8.422E-02	.141	.115	-.180	.661
Technological dependency 9	-3.101E-02	.640	-7.349E-03	5.108E-02	.111	-2.987E-02	.149	5.599E-02
Convenience 7	.147	.716	-6.793E-02	-8.151E-02	9.917E-02	-.103	.107	-.146
Personal Motivations 3	-.111	.370	5.072E-02	.130	-6.256E-04	-7.955E-02	.668	-2.725E-02
Human Interaction 4	-3.587E-02	7.279E-02	.828	3.459E-02	6.161E-02	6.542E-04	-7.080E-02	3.152E-02
Human Interaction 6	-.144	5.726E-02	.733	-3.152E-02	.164	.110	5.725E-02	.131
Technological Dependency 11	.258	.536	.258	.159	-2.617E-02	5.115E-02	-7.061E-02	-.184
Convenience 8	7.583E-02	.597	4.595E-02	.126	-6.975E-02	6.644E-02	5.574E-02	7.438E-02
Time Saving 4	-1.500E-02	.589	9.190E-02	.312	-7.386E-02	5.444E-02	8.245E-02	6.188E-02
Efficiency 5	-.263	3.611E-02	.561	.126	5.648E-03	.234	.178	.175
Time Saving 6	.226	.496	9.939E-02	.419	-8.507E-02	.151	4.674E-02	.260
Comfort 3	.182	.388	-.102	.403	-3.021E-02	9.397E-02	.110	-.211
Failure Response 2	.652	-6.768E-02	1.012E-02	.225	.156	-5.068E-02	-.169	-9.849E-02
Rationality 3	-.117	.147	-5.563E-02	.739	6.629E-02	-2.820E-02	.140	.114
Design 2	-.278	6.755E-02	.386	.534	.158	3.683E-02	4.676E-02	.210
Technological dependency 13	.200	.200	8.528E-02	.668	3.648E-02	-3.441E-02	7.572E-02	-.151
Safety 16	.111	7.084E-02	.244	.162	.584	-7.384E-02	.160	6.720E-02
Safety 18	.108	4.377E-02	-7.662E-02	-3.091E-02	.657	.385	-.132	.124
Design 14	6.203E-02	-5.889E-02	8.697E-02	1.338E-02	.754	6.380E-02	2.322E-02	4.062E-02
Failure Response 1	.634	-2.736E-02	.137	1.919E-02	.295	-.123	3.016E-02	-.142
Safety 17	-.158	7.616E-02	-1.353E-03	1.168E-02	.242	.781	-1.698E-04	-1.712E-02
Change Resistance 12	-5.875E-03	-2.813E-02	.226	-4.819E-03	-2.682E-02	.770	-1.516E-02	.104
Personal Motivtions 5	.297	.160	.138	.152	-.159	.266	.479	-.286

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Fifth Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.801***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***3272.717***
	df	***406***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.381***	***11.660***	***11.660***
	2	***2.631***	***9.071***	***20.731***
	3	***2.136***	***7.364***	***28.096***
	4	***1.825***	***6.291***	***34.387***
	5	***1.711***	***5.899***	***40.286***
	6	***1.617***	***5.577***	***45.863***
	7	***1.610***	***5.553***	***51.417***
	8	***1.468***	***5.064***	***56.480***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component							
	1	2	3	4	5	6	7	8
Ubiquity 5	.633	.112	-.331	-3.995E-02	9.032E-04	7.381E-02	3.426E-02	.173
Comfort 2	.612	.137	-.156	3.449E-02	-.167	.121	-6.574E-02	.128
Human Interaction 2	6.135E-02	-.130	.198	7.095E-02	1.981E-02	7.152E-02	-9.063E-03	.733
Personal motivations 4	9.853E-02	5.305E-02	-1.677E-02	.120	.109	.761	-2.202E-02	-1.920E-02
Time saving 2	.510	.307	-8.832E-02	-7.084E-02	-5.344E-02	.244	3.226E-02	-.139
Rationality 2	.636	.178	-.185	3.736E-02	7.007E-02	9.921E-02	7.550E-02	.148
Failure Response 6	.744	2.861E-02	-1.208E-02	-.146	8.565E-02	-8.969E-02	-6.191E-02	3.635E-02
Change Resistance 2	8.380E-02	3.743E-02	7.661E-02	-5.973E-02	.141	-.184	.113	.668
Technological dependency 9	-3.125E-02	.642	-1.853E-02	5.912E-02	.111	.149	-2.611E-02	5.318E-02
Convenience 7	.142	.716	-7.401E-02	-9.235E-02	.100	.111	-.102	-.139
Personal Motivations 3	-.115	.366	5.694E-02	9.738E-02	4.408E-03	.682	-9.649E-02	-7.515E-03
Human Interaction 4	-3.792E-02	7.429E-02	.829	4.653E-02	6.362E-02	-6.688E-02	-1.721E-04	3.946E-02
Human Interaction 6	-.149	5.628E-02	.731	-9.945E-03	.167	5.785E-02	.109	.141
Technological Dependency 11	.263	.545	.261	.126	-2.531E-02	-5.370E-02	4.728E-02	-.183
Convenience 8	7.935E-02	.600	4.345E-02	.113	-7.092E-02	6.554E-02	6.542E-02	7.468E-02
Time Saving 4	-1.644E-03	.593	6.708E-02	.344	-8.122E-02	7.587E-02	7.517E-02	3.134E-02
Efficiency 5	-.261	3.898E-02	.552	.156	5.800E-03	.177	.238	.170
Time Saving 6	.241	.501	.107	.363	-8.664E-02	6.987E-02	.144	-.265
Failure Response 2	.661	-6.154E-02	1.871E-02	.183	.155	-.156	-5.601E-02	-.102
Rationality 3	-8.933E-02	.152	-6.130E-02	.731	5.772E-02	.147	-2.362E-02	8.313E-02
Design 2	-.257	7.506E-02	.361	.591	.148	3.496E-02	5.929E-02	.169
Technological dependency 13	.229	.217	5.705E-02	.692	2.554E-02	7.150E-02	-8.278E-03	-.206
Safety 16	.115	7.111E-02	.227	.195	.581	.150	-6.305E-02	5.437E-02
Safety 18	.108	4.198E-02	-7.332E-02	-3.706E-02	.657	-.129	.381	.130
Design 14	6.057E-02	-5.820E-02	8.987E-02	1.081E-02	.756	2.541E-02	5.723E-02	4.852E-02
Failure Response 1	.633	-2.423E-02	.143	-1.371E-02	.298	3.871E-02	-.131	-.133
Safety 17	-.154	7.713E-02	-4.911E-03	1.330E-02	.241	2.482E-03	.785	-2.360E-02
Change Resistance 12	-3.738E-03	-2.664E-02	.220	6.849E-03	-2.666E-02	-1.548E-02	.777	9.503E-02
Personal Motivtions 5	.299	.163	.147	9.590E-02	-.154	.501	.252	-.276

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Then, after eliminate the low factor loading items, we can continue eliminating those items that increase reliability (to the limit were it is not necessary to sacrifice the explained variance.

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	96.4887	123.5314	.2336	.7408
Q2	95.9546	122.8988	.2469	.7401
Q3	96.9072	127.3075	.0922	.7499
Q4	96.3876	124.1594	.2604	.7391
Q5	96.0062	122.3078	.3192	.7356
Q6	96.3278	120.7745	.3608	.7328
Q7	96.0227	122.1007	.2391	.7411
Q9	97.0021	127.3120	.0972	.7493
Q10	95.9608	122.4633	.3280	.7352
Q11	95.8144	122.3911	.3255	.7353
Q12	96.3711	123.8083	.2638	.7389
Q13	96.1773	124.3982	.2104	.7422
Q14	96.3938	124.8053	.2008	.7427
Q15	95.7443	121.6452	.4050	.7316
Q16	96.2000	123.4455	.3296	.7357
Q17	95.9340	121.9626	.3680	.7332
Q18	96.4103	125.6805	.1589	.7455
Q19	95.6474	121.3610	.4337	.7304
Q21	95.5381	124.1705	.2673	.7387
Q22	95.9113	124.4322	.2485	.7397
Q23	96.0825	124.1709	.2254	.7412
Q24	95.4247	122.5548	.3873	.7330
Q25	95.8103	121.3689	.3492	.7337
Q26	96.6680	123.8007	.2316	.7409
Q27	96.5031	124.7174	.2153	.7417
Q30	95.6763	122.5252	.3150	.7359
Q31	96.7381	126.4334	.1464	.7457
Q32	96.6041	126.4504	.1621	.7445
Q33	95.8619	123.6152	.3327	.7357

Reliability Coefficients

N of Cases = 485.0 N of Items = 29

Alpha = .7457

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	93.8041	119.2859	.2407	.7449
Q2	93.2701	118.7389	.2510	.7444
Q4	93.7031	119.9447	.2671	.7431
Q5	93.3216	117.7889	.3397	.7388
Q6	93.6433	116.7341	.3621	.7372
Q7	93.3381	118.1086	.2374	.7458
Q9	94.3175	124.0312	.0659	.7558
Q10	93.2763	118.2665	.3351	.7392
Q11	93.1299	117.9025	.3452	.7386
Q12	93.6866	119.6578	.2677	.7431
Q13	93.4928	120.6678	.1971	.7476
Q14	93.7093	121.0827	.1867	.7481
Q15	93.0598	117.3373	.4190	.7352
Q16	93.5155	119.2214	.3382	.7396
Q17	93.2495	117.6546	.3810	.7369
Q18	93.7258	121.9722	.1442	.7509
Q19	92.9629	116.8581	.4582	.7335
Q21	92.8536	120.0467	.2701	.7430
Q22	93.2268	120.3906	.2473	.7442
Q23	93.3979	120.4260	.2126	.7465
Q24	92.7402	118.2712	.4000	.7367
Q25	93.1258	117.5647	.3402	.7387
Q26	93.9835	119.9047	.2252	.7458
Q27	93.8186	120.8224	.2079	.7466
Q30	92.9918	118.3884	.3192	.7401
Q31	94.0536	122.2988	.1476	.7502
Q32	93.9196	122.5989	.1513	.7495
Q33	93.1773	119.2743	.3472	.7393

Reliability Coefficients

N of Cases = 485.0 N of Items = 28

Alpha = .7499

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	91.2140	115.9417	.2374	.7503
Q2	90.6770	115.1758	.2559	.7492
Q4	91.1111	116.1732	.2820	.7474
Q5	90.7325	114.2335	.3463	.7435
Q6	91.0576	113.4152	.3575	.7426
Q7	90.7449	114.8007	.2334	.7514
Q10	90.6914	114.6633	.3411	.7440
Q11	90.5412	114.1787	.3593	.7429
Q12	91.1008	115.8599	.2820	.7474
Q13	90.8992	117.3197	.1926	.7530
Q14	91.1152	117.9661	.1726	.7541
Q15	90.4671	113.6927	.4308	.7396
Q16	90.9239	115.6829	.3439	.7444
Q17	90.6564	114.1312	.3861	.7417
Q18	91.1317	118.7414	.1345	.7567
Q19	90.3704	113.2440	.4693	.7379
Q21	90.2634	116.6233	.2696	.7481
Q22	90.6337	116.7769	.2544	.7489
Q23	90.8066	117.1625	.2053	.7521
Q24	90.1481	114.5058	.4183	.7408
Q25	90.5370	114.2986	.3344	.7442
Q26	91.3889	116.9433	.2055	.7522
Q27	91.2284	117.7642	.1916	.7527
Q30	90.4053	115.0374	.3154	.7454
Q31	91.4671	118.9463	.1420	.7557
Q32	91.3333	119.4268	.1373	.7555
Q33	90.5926	115.5038	.3612	.7436

Reliability Coefficients

N of Cases = 486.0 N of Items = 27

Alpha = .7547

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	87.9856	110.8660	.2738	.7518
Q2	87.4497	110.3097	.2834	.7513
Q4	87.8789	112.1149	.2777	.7514
Q5	87.5010	109.5838	.3701	.7459
Q6	87.8275	108.5957	.3881	.7445
Q7	87.5195	109.5505	.2712	.7526
Q10	87.4661	110.3687	.3464	.7474
Q11	87.3142	109.5492	.3815	.7453
Q12	87.8706	112.0347	.2680	.7520
Q13	87.6715	114.0482	.1562	.7592
Q14	87.8891	114.6091	.1381	.7602
Q15	87.2402	109.4751	.4350	.7430
Q16	87.6920	111.5839	.3419	.7482
Q17	87.4271	110.2781	.3738	.7461
Q19	87.1396	109.1656	.4689	.7416
Q21	87.0349	111.8362	.2986	.7503
Q22	87.4066	112.7438	.2478	.7531
Q23	87.5770	113.8948	.1684	.7583
Q24	86.9220	110.1626	.4277	.7440
Q25	87.3080	110.2424	.3317	.7481
Q26	88.1602	112.7562	.2061	.7561
Q27	88.0000	113.7325	.1851	.7570
Q30	87.1745	110.5312	.3322	.7482
Q31	88.2341	115.3278	.1175	.7610
Q32	88.1027	115.7384	.1143	.7606
Q33	87.3634	111.3388	.3627	.7472

Reliability Coefficients

N of Cases = 487.0 N of Items = 26

Alpha = .7583

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
Q1	85.1335	106.5686	.2840	.7542
Q2	84.5975	105.7883	.3027	.7530
Q4	85.0267	107.8902	.2853	.7539
Q5	84.6489	105.2736	.3835	.7479
Q6	84.9754	104.3533	.3987	.7466
Q7	84.6674	104.9385	.2923	.7541
Q10	84.6140	106.4186	.3428	.7505
Q11	84.4620	105.3519	.3900	.7476
Q12	85.0185	107.8865	.2720	.7547
Q13	84.8193	110.0537	.1518	.7626
Q14	85.0370	110.8875	.1222	.7642
Q15	84.3881	105.3655	.4402	.7455
Q16	84.8398	107.5010	.3438	.7510
Q17	84.5749	106.1955	.3766	.7488
Q19	84.2875	105.1518	.4696	.7443
Q21	84.1828	107.4377	.3150	.7522
Q22	84.5544	108.7249	.2453	.7562
Q23	84.7248	109.9735	.1611	.7618
Q24	84.0698	105.9663	.4372	.7462
Q25	84.4559	106.3761	.3246	.7515
Q26	85.3080	109.4276	.1757	.7611
Q27	85.1478	109.9287	.1727	.7608
Q30	84.3224	106.1942	.3460	.7502
Q32	85.2505	112.6449	.0681	.7662
Q33	84.5113	107.3121	.3619	.7501

Reliability Coefficients

N of Cases = 487.0 N of Items = 25

Alpha = .7610

Final Step

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.811***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***2695.560***
	df	***276***
	Sig.	***.000***

Again, it is important to notice two statistical figures; first, KMO with a high value of .811, (and also the significance level for the sphericity test),

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.341***	***13.919***	***13.919***
	2	***1.885***	***7.855***	***21.774***
	3	***1.877***	***7.820***	***29.595***
	4	***1.785***	***7.440***	***37.034***
	5	***1.673***	***6.972***	***44.007***
	6	***1.671***	***6.963***	***50.970***
	7	***1.667***	***6.945***	***57.915***

Extraction Method: Principal Component Analysis.

Second, a Total Variance Explained of 58% with 24 variables included and 7 extracted components.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Ubiquity 5	.648	-6.395E-02	-3.552E-02	-.287	.189	9.445E-02	6.112E-02
Comfort 2	.617	3.622E-02	2.265E-02	-.146	.153	-.109	9.134E-02
Personal motivations 4	6.257E-02	.113	-.102	-3.239E-02	.147	.128	.785
Time saving 2	.512	-8.043E-02	.140	-4.737E-02	.271	-7.869E-02	.328
Rationality 2	.622	-1.666E-04	8.357E-02	-.150	.178	.160	.113
Failure Response 6	.746	-.133	5.281E-02	3.357E-02	-2.811E-02	8.424E-02	-7.641E-02
Technological dependency 9	-2.054E-02	.148	.773	-4.924E-02	5.518E-02	8.295E-02	9.052E-02
Convenience 7	.169	-2.237E-02	.714	-7.203E-02	.236	1.552E-02	.127
Personal Motivations 3	-.149	.142	.435	-2.059E-02	3.008E-02	-2.465E-02	.651
Human Interaction 4	-7.431E-02	8.160E-02	1.281E-02	.848	5.710E-02	4.944E-02	-3.241E-02
Human Interaction 6	-.190	1.806E-02	-5.716E-02	.769	.111	.203	8.342E-02
Technological Dependency 11	.266	.163	.487	.284	.284	-7.734E-02	-2.639E-02
Convenience 8	7.317E-02	4.689E-02	.146	9.150E-02	.746	3.120E-02	.121
Time Saving 4	-2.790E-03	.322	.232	5.638E-02	.631	-4.670E-03	.102
Time Saving 6	.246	.361	.307	.139	.412	-.144	.147
Failure Response 2	.676	.199	1.574E-02	4.553E-02	-.141	7.816E-02	-.110
Rationality 3	-7.553E-02	.732	5.484E-03	-7.708E-02	.174	6.081E-02	.125
Design 2	-.289	.616	3.767E-02	.315	3.140E-02	.190	1.883E-02
Technological dependency 13	.239	.713	.206	5.286E-02	8.111E-02	-5.463E-02	9.193E-02
Safety 16	.119	.235	8.353E-02	.256	-8.554E-02	.507	.196
Safety 18	.111	-5.979E-02	-2.706E-02	6.128E-04	.169	.775	-.154
Design 14	6.583E-02	3.544E-02	2.129E-02	9.375E-02	-.114	.748	2.427E-02
Failure Response 1	.639	3.712E-02	.172	.147	-.309	.154	.102
Personal Motivtions 5	.245	7.756E-02	.214	.135	7.743E-02	-.162	.548

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Removed items and factor loadings in Factor Analysis second approach

Item #	Item Name	C1	C2	C3	C4	C5	C6	C7
1.	Ubiquity 5	X						
2.	Comfort 2	X						
3.	Human interaction 2							
4.	Personal motivations 4							X
5.	Time saving 2	X						
6.	Rationality 2	X						
7.	Failure response 6	X						
8.	Design 15							
9.	Change resistance 2							
10.	Dependence/Independence 9			X				
11.	Convenience 7			X				
12.	Personal motivations 3							X
13.	Human interaction 4				X			
14.	Human interaction 6				X			
15.	Dependence/Independence 11			X				
16.	Convenience 8					X		
17.	Time saving 4					X		
18.	Efficiency 5							
19.	Time saving 6					X		
20.	Comfort 3							
21.	Failure response 2	X						
22.	Rationality 3		X					
23.	Design 2		X					
24.	Dependence/Independence 13		X					
25.	Safety 16						X	
26.	Safety 18						X	
27.	Design 14						X	
28.	Change resistance 14							
29.	Efficiency 11							
30.	Failure response 1	X						
31.	Safety 17							
32.	Change resistance 12							
33.	Personal motivations 5							X

Variables in red represent the deleted variables. The X's show each single variable inclusion for each component.

Compared with first Factor Analysis approach we can notice that variable 20 it's also deleted. This variable elimination produces an outcome of one component elimination with three variables regrouping in different components.

Variable15 regroups with variables10 and 11 (that were alone in component 5 in first factor analysis approach).

Variable 19 regroups with variables 16 and 17 (that were alone in component 8 in first factor analysis approach).

Variable 33 regroups with variables 4 and 12 (that were alone in component 7 in first factor analysis approach).

Grouping Variables by component

Component 1

1. While purchasing, the fundamental thing is product availability, the problem is that in stores, in several times, products are not available; whereas on Internet there are so many companies offering the same product that somebody will have it for sure.
2. Purchasing through Self Service Technologies let me avoid traffic, find a parking lot or wait in lines.
5. With automated services people are going to spend less time. They are faster than personally deal with somebody.
6. Through Self Service Technologies like Internet you can compare prices of what you are looking for so you can adjust to your budget.

7. When technology fails it should be easy to interact personally with somebody in case of failures or doubts.
21. Automated services should offer alternatives when they fail.

30. We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.

Component 2

22. The advantage of using Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.
23. Automated services would be easier and simpler if they offer only basic and repetitive operations.
24. I like the idea of doing business via self service technologies because I'm not limited to regular business hours

Component 3

10. Use of automated systems provides a sensation of control and independence to me.
11. The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.
15. There is a great trend that forces you to move at the speed of technology, and people use that tool to make their life more comfortable.

Component 4

13. It's uncomfortable to talk with a machine, personal service is more agreeable.

14. It is very upsetting to be waiting a recording machine to attend me.

Component 5

16. With Self Service Technologies, users will save money through price competition.

17. Personal attention implies losing time while doing lines and wait for somebody to understand to you; whereas in Internet this doesn't happen.

19. One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.

Component 6

25. I worry that information I send over the internet will be seen by other people or institution.

26. If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.

27. I don't like automated services because companies' don't care of infrastructures operating around them; for example, maintaining ATM's clean.

Component 7

4. Compared to others I am one of the first to understand self service technologies.

12. In general, I am among the first in my circle of friends to search for new technology when it appears.

33. I am always looking for the benefits that novelty in technology can give me.

Items that didn't match

3. I don't feel safe if there is no person who endorses the operation I'm doing.

8. Design of ATM's is so bad that sometimes banks do not realize that sun shines very hard and it is not possible to see the monitor well.

9. The fact that I don't know the way SST's operate, generates a sense of frustration that increases my rejection to use them.

18. Failure in an automated service generates in me a feeling of rejection and frustration that I prefer no longer use it.

20. What I like from Self Service Technologies is that I can do other things while waiting for somebody to attend me.

28. To accede to Self Service Technologies, you must have a strong need to use it or don't have any other alternative.

29. Technology systems always seems to fail at the worst possible time

31. If there are two automated tellers in a single room I prefer to leave and not use them due to safety reasons.

32. If there is not enough information about advantages and disadvantages of Self Service Technologies, I prefer to use personal services.

We can perceive here the same situation that appears in the first factor analysis with the grouping variables in component 1; it have several items and they are not so congruent between each other; again, we decided to run a particular Factor analysis just for the seven items in Component 1. The outcome was identical:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.842***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***756.818***
	df	***21***
	Sig.	***.000***

Rotated Component Matrix[a]

	Component	
	1	**2**
Ubiquity 5	***.760***	***.188***
Comfort 2	***.747***	***.127***
Time saving 2	***.637***	***.103***
Rationality 2	***.622***	***.315***
Failure Response 6	***.506***	***.550***
Failure Response 2	***.165***	***.796***
Failure Response 1	***.137***	***.803***

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalizati

a. Rotation converged in 3 iterations.

So, again it might be possible to separate component 1 in two different components after reviewing this additional factor analysis.

Naming the Components:

As we can appreciate here, we have one component less, but three more solid and consistent ones.

9. Ubiquity: you can be sure that you might buy your products when you needed, where you wanted, at the time and price you needed.

10. Failure Response: an appropriate response (personal or mechanical) in case of technological failures.

11. Control: provides to users a sense of situational and operational domination.

12. Technological dependency: It gives a sense of dependency/independency through an automated operation.

13. Human Interaction: a person's need to be assisted by a human being when technology doesn't seem to have the expected answer.

14. Convenience: a sense of profitability trough competitive prices and personnel reduction.

15. Safe Design: people's need to operate trough/in a trusty and appropriate automated service.

16. Novelty: people's readiness to interact with technology.

B. Complete Factor Analysis Third Approach (eliminating items with low factor loadings)

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Ubiquity 5	.648	-6.395E-02	-3.552E-02	-.287	.189	9.445E-02	6.112E-02
Comfort 2	.617	3.622E-02	2.265E-02	-.146	.153	-.109	9.134E-02
Personal motivations 4	6.257E-02	.113	-.102	-3.239E-02	.147	.128	.785
Time saving 2	.512	-8.043E-02	.140	-4.737E-02	.271	-7.869E-02	.328
Rationality 2	.622	-1.666E-04	8.357E-02	-.150	.178	.160	.113
Failure Response 6	.746	-.133	5.281E-02	3.357E-02	-2.811E-02	8.424E-02	-7.641E-02
Technological dependency 9	-2.054E-02	.148	.773	-4.924E-02	5.518E-02	8.295E-02	9.052E-02
Convenience 7	.169	-2.237E-02	.714	-7.203E-02	.236	1.552E-02	.127
Personal Motivations 3	-.149	.142	.435	-2.059E-02	3.008E-02	-2.465E-02	.651
Human Interaction 4	-7.431E-02	8.160E-02	1.281E-02	.848	5.710E-02	4.944E-02	-3.241E-02
Human Interaction 6	-.190	1.806E-02	-5.716E-02	.769	.111	.203	8.342E-02
Technological Dependency 11	.266	.163	.487	.284	.284	-7.734E-02	-2.639E-02
Convenience 8	7.317E-02	4.689E-02	.146	9.150E-02	.746	3.120E-02	.121
Time Saving 4	-2.790E-03	.322	.232	5.638E-02	.631	-4.670E-03	.102
Time Saving 6	.246	.361	.307	.139	.412	-.144	.147
Failure Response 2	.676	.199	1.574E-02	4.553E-02	-.141	7.816E-02	-.110
Rationality 3	-7.553E-02	.732	5.484E-03	-7.708E-02	.174	6.081E-02	.125
Design 2	-.289	.616	3.767E-02	.315	3.140E-02	.190	1.883E-02
Technological dependency 13	.239	.713	.206	5.286E-02	8.111E-02	-5.463E-02	9.193E-02
Safety 16	.119	.235	8.353E-02	.256	-8.554E-02	.507	.196
Safety 18	.111	-5.979E-02	-2.706E-02	6.128E-04	.169	.775	-.154
Design 14	6.583E-02	3.544E-02	2.129E-02	9.375E-02	-.114	.748	2.427E-02
Failure Response 1	.639	3.712E-02	.172	.147	-.309	.154	.102
Personal Motivtions 5	.245	7.756E-02	.214	.135	7.743E-02	-.162	.548

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

As we can see here (this is the last rotation on the second procedure), there are two items that still perform low factor loadings Q15 and Q19 (these two items were low since the first factor analysis, prior to eliminate low factor loadings); the following is the outcome if we eliminate those two items:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.786***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***2325.804***
	df	***231***
	Sig.	***.000***

Total Variance Explained

		Rotation Sums of Squared Loadings		
		Total	**% of Variance**	**Cumulative %**
Component	**1**	***3.241***	***14.731***	***14.731***
	2	***1.781***	***8.096***	***22.827***
	3	***1.749***	***7.949***	***30.776***
	4	***1.686***	***7.664***	***38.439***
	5	***1.657***	***7.530***	***45.970***
	6	***1.601***	***7.279***	***53.249***
	7	***1.428***	***6.492***	***59.742***

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Ubiquity 5	.668	-4.884E-02	-.260	3.454E-02	6.440E-02	-2.713E-02	.210
Comfort 2	.643	4.381E-02	-.109	5.914E-02	-.146	4.327E-02	.162
Personal motivations 4	4.279E-02	.117	-4.772E-02	.778	.136	-.125	.154
Time saving 2	.510	-9.774E-02	-4.842E-02	.347	-6.217E-02	.148	.227
Rationality 2	.626	8.044E-03	-.155	.133	.162	5.139E-02	.169
Failure Response 6	.751	-.135	3.770E-02	-6.264E-02	8.231E-02	4.343E-02	-4.682E-02
Technological dependency 9	1.751E-02	.177	-6.090E-03	7.096E-02	4.568E-02	.779	7.905E-02
Convenience 7	.202	-1.888E-02	-2.814E-02	.117	-2.110E-03	.753	.222
Personal Motivations 3	-.145	.156	-8.217E-03	.641	-3.452E-02	.434	4.460E-02
Human Interaction 4	-5.410E-02	8.291E-02	.870	-3.819E-02	2.458E-02	1.360E-02	4.525E-02
Human Interaction 6	-.172	3.155E-02	.791	6.714E-02	.173	-5.871E-02	.123
Convenience 8	.110	7.170E-02	.114	.139	1.065E-02	.143	.747
Time Saving 4	3.843E-02	.337	9.310E-02	.103	-3.248E-02	.260	.621
Failure Response 2	.670	.185	3.273E-02	-7.692E-02	9.245E-02	-6.254E-03	-.181
Rationality 3	-5.961E-02	.742	-6.595E-02	.118	4.174E-02	3.878E-04	.175
Design 2	-.266	.630	.344	-6.477E-03	.155	5.119E-02	4.439E-02
Technological dependency 13	.250	.708	5.094E-02	.123	-5.318E-02	.188	4.173E-02
Safety 16	.122	.246	.273	.173	.488	8.933E-02	-7.715E-02
Safety 18	.104	-5.903E-02	-3.900E-04	-.149	.788	-2.606E-02	.164
Design 14	4.115E-02	2.955E-02	7.521E-02	3.647E-02	.775	8.379E-03	-.128
Failure Response 1	.625	2.609E-02	.132	.129	.170	.145	-.341
Personal Motivtions 5	.223	5.787E-02	.102	.604	-.120	.185	2.170E-02

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Removed items and factor loadings in Factor Analysis third approach

Item #	Item Name	C1	C2	C3	C4	C5	C6	C7
1.	Ubiquity 5	X						
2.	Comfort 2	X						
3.	Human interaction 2							
4.	Personal motivations 4				X			
5.	Time saving 2	X						
6.	Rationality 2	X						
7.	Failure response 6	X						
8.	Design 15							
9.	Change resistance 2							
10.	Dependence/Independence 9						X	
11.	Convenience 7						X	
12.	Personal motivations 3				X			
13.	Human interaction 4			X				
14.	Human interaction 6			X				
15.	Dependence/Independence 11							
16.	Convenience 8							X
17.	Time saving 4							X
18.	Efficiency 5							
19.	Time saving 6							
20.	Comfort 3							
21.	Failure response 2	X						
22.	Rationality 3		X					
23.	Design 2		X					
24.	Dependence/Independence 13		X					
25.	Safety 16					X		
26.	Safety 18					X		
27.	Design 14					X		
28.	Change resistance 14							
29.	Efficiency 11							
30.	Failure response 1	X						
31.	Safety 17							
32.	Change resistance 12							
33.	Personal motivations 5				X			

Variables in red represent the deleted variables. The X's show each single variable inclusion for each component.

Here we can appreciate again the deletion of three variables compared to factor analysis first approach: variables 15, 19 and 20.

This created a similar outcome (compared with first factor analysis approach), but with the difference of two deleted components and the regrouping of one variable (33) in a different component (regrouped in the same component than second factor analysis approach).

Grouping Variables by component

Component 1

1. While purchasing, the fundamental thing is product availability, the problem is that in stores, in several times, products are not available; whereas on Internet there are so many companies offering the same product that somebody will have it for sure.
2. Purchasing through Self Service Technologies let me avoid traffic, find a parking lot or wait in lines.
5. With automated services people are going to spend less time. They are faster than personally deal with somebody.
6. Through Self Service Technologies like Internet you can compare prices of what you are looking for so you can adjust to your budget.

7. When technology fails it should be easy to interact personally with somebody in case of failures or doubts.
21. Automated services should offer alternatives when they fail.

30. We know technology can fail, that's why it is important that human support exists at any moment to solve any problem.

Component 2

22. The advantage of using Self Service Technologies is that they allow you to think and plan what you say because the interaction is not immediate.
23. Automated services would be easier and simpler if they offer only basic and repetitive operations.
24. I like the idea of doing business via self service technologies because I'm not limited to regular business hours

Component 3

13. It's uncomfortable to talk with a machine, personal service is more agreeable.

14. It is very upsetting to be waiting a recording machine to attend me.

Component 4

4. Compared to others I am one of the first to understand self service technologies.

12. In general, I am among the first in my circle of friends to search for new technology when it appears.
33. I am always looking for the benefits that novelty in technology can give me.

Component 5

25. I worry that information I send over the internet will be seen by other people or institution.
26. If a person stands behind me in a teller it makes me feel worried and distrustful and I prefer not to use it.
27. I don't like automated services because companies' don't care of infrastructures operating around them; for example, maintaining ATM's clean.

Component 6

10. Use of automated systems provides a sensation of control and independence to me.
11. The use of automated services allows you to save time, money and effort because you don't need to go personally and pay for transportation and parking lots.

Component 7

16. With Self Service Technologies, users will save money through price competition.

17. Personal attention implies losing time while doing lines and wait for somebody to understand to you; whereas in Internet this doesn't happen.

Items that didn't match

3. I don't feel safe if there is no person who endorses the operation I'm doing.

8. Design of ATM's is so bad that sometimes banks do not realize that sun shines very hard and it is not possible to see the monitor well.
9. The fact that I don't know the way SST's operate, generates a sense of frustration that increases my rejection to use them.
15. There is a great trend that forces you to move at the speed of technology, and people use that tool to make their life more comfortable.
18. Failure in an automated service generates in me a feeling of rejection and frustration that I prefer no longer use it.
19. One of the reasons why I prefer to use technology is because it takes a minimal time to respond a task.
20. What I like from Self Service Technologies is that I can do other things while waiting for somebody to attend me.
28. To accede to Self Service Technologies, you must have a strong need to use it or don't have any other alternative.
29. Technology systems always seems to fail at the worst possible time

31. If there are two automated tellers in a single room I prefer to leave and not use them due to safety reasons.
32. If there is not enough information about advantages and disadvantages of Self Service Technologies, I prefer to use personal services.

The situation with Component 1 maintains the same status; it has several items and they are not so congruent between each other; again, we decided to run a particular Factor analysis just for the seven items in Component 1. The outcome persists:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		***.842***
Bartlett's Test of Sphericity	**Approx. Chi-Square**	***756.818***
	df	***21***
	Sig.	***.000***

Rotated Component Matrix[a]

	Component	
	1	**2**
Ubiquity 5	***.760***	***.188***
Comfort 2	***.747***	***.127***
Time saving 2	***.637***	***.103***
Rationality 2	***.622***	***.315***
Failure Response 6	***.506***	***.550***
Failure Response 2	***.165***	***.796***
Failure Response 1	***.137***	***.803***

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalizati

a. Rotation converged in 3 iterations.

So, it might be possible to separate component 1 in two different components after reviewing this additional factor analysis.

Naming the Components:

The outcome of this additional approach, created 7 similar components with first factor approach and one similar component with second factor approach.

1. Ubiquity: you can be sure that you might buy your products when you needed, where you wanted, at the time and price you needed.

2. Failure Response: an appropriate response (personal or mechanical) in case of technological failures.

3. Control: provides to users the sense of situational and operational domination.

4. Human Interaction: a person's need to be assisted by a human being when technology doesn't seem to have the expected answer.

5. Novelty: people's readiness to interact with technology.

6. Safe Design: people's need to operate trough/in a trusty and appropriate automated service.

7. Convenience: It gives a sense of productivity through an automated operation.

8. Profitability: a sense of profitability trough competitive prices and personnel reduction.

Appendix 9 Independent Variables testing

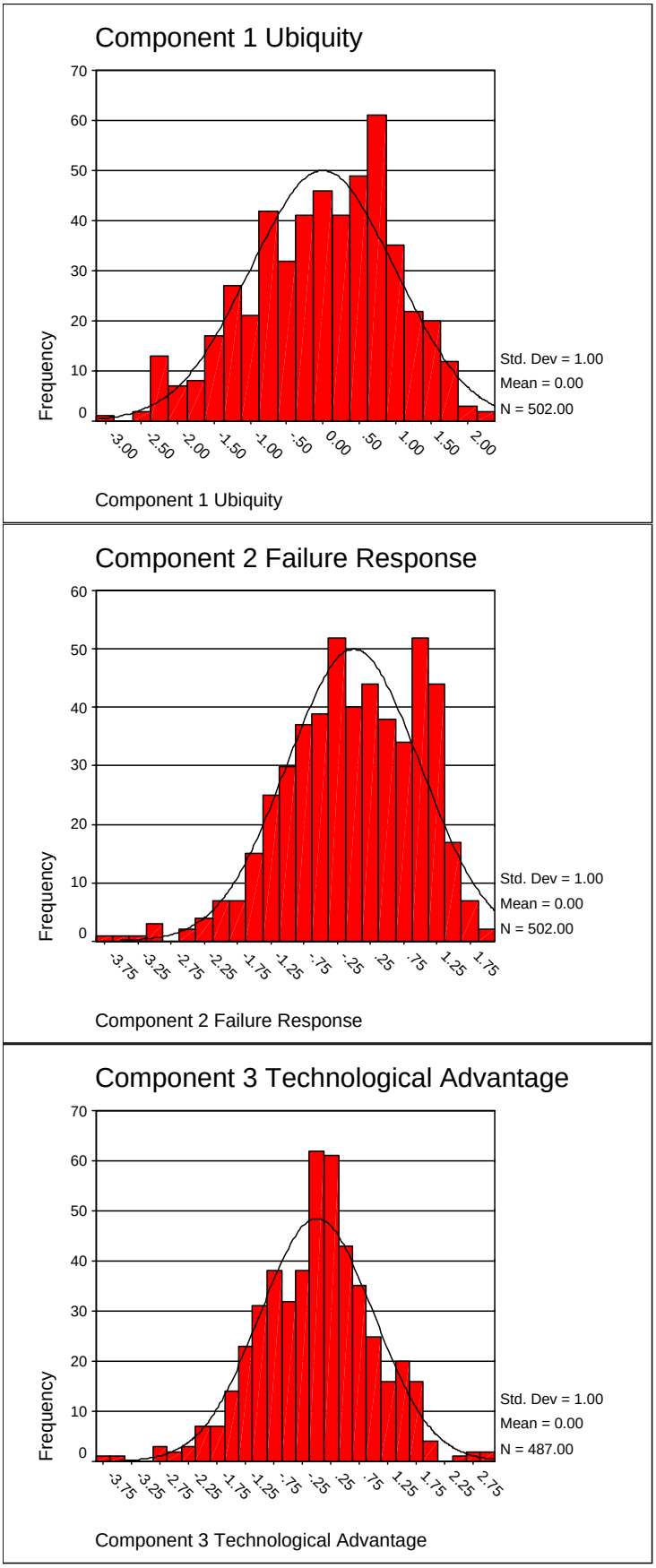
First Regression Approach

Correlations

		Overall, how favorable did you feel about using self service technologies instead of personal services?	Component 1 Ubiquity	Component 2 Failure Response	Component 3 Technological Advantage	Component 4 Human Interaction	Component 5 Control	Component 6 Convenience	Component 7 Safe Design	Component 8 Novelty	Component 9 Profitability
Overall, how favorable did you feel about using self service technologies instead of personal services?	Pearson Correlation	1.000	.130**	-.126**	.265**	-.172**	.013	.109**	-.136**	.252**	.143**
	Sig. (2-tailed)	.	.004	.005	.000	.000	.777	.016	.003	.000	.002
	N	510	501	501	486	486	486	486	486	486	486
Component 1 Ubiquity	Pearson Correlation	.130**	1.000	.000	-.044	-.185**	-.044	.117**	-.093**	.189**	.333**
	Sig. (2-tailed)	.004	.	1.000	.333	.000	.333	.010	.041	.000	.000
	N	501	502	502	487	487	487	487	487	487	487
Component 2 Failure Response	Pearson Correlation	-.126**	.000	1.000	.324**	.126**	.041	-.024	.255**	-.144**	-.462**
	Sig. (2-tailed)	.005	1.000	.	.000	.005	.368	.602	.000	.001	.000
	N	501	502	502	487	487	487	487	487	487	487
Component 3 Technological Advantage	Pearson Correlation	.265**	-.044	.324**	1.000	.000	.000	.000	.000	.000	.000
	Sig. (2-tailed)	.000	.333	.000	.	1.000	1.000	1.000	1.000	1.000	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 4 Human Interaction	Pearson Correlation	-.172**	-.185**	.126**	.000	1.000	.000	.000	.000	.000	.000
	Sig. (2-tailed)	.000	.000	.005	1.000	.	1.000	1.000	1.000	1.000	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 5 Control	Pearson Correlation	.013	-.044	.041	.000	.000	1.000	.000	.000	.000	.000
	Sig. (2-tailed)	.777	.333	.368	1.000	1.000	.	1.000	1.000	1.000	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 6 Convenience	Pearson Correlation	.109**	.117**	-.024	.000	.000	.000	1.000	.000	.000	.000
	Sig. (2-tailed)	.016	.010	.602	1.000	1.000	1.000	.	1.000	1.000	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 7 Safe Design	Pearson Correlation	-.136**	-.093**	.255**	.000	.000	.000	.000	1.000	.000	.000
	Sig. (2-tailed)	.003	.041	.000	1.000	1.000	1.000	1.000	.	1.000	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 8 Novelty	Pearson Correlation	.252**	.189**	-.144**	.000	.000	.000	.000	.000	1.000	.000
	Sig. (2-tailed)	.000	.000	.001	1.000	1.000	1.000	1.000	1.000	.	1.000
	N	486	487	487	487	487	487	487	487	487	487
Component 9 Profitability	Pearson Correlation	.143**	.333**	-.462**	.000	.000	.000	.000	.000	.000	1.000
	Sig. (2-tailed)	.002	.000	.000	1.000	1.000	1.000	1.000	1.000	1.000	.
	N	486	487	487	487	487	487	487	487	487	487

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).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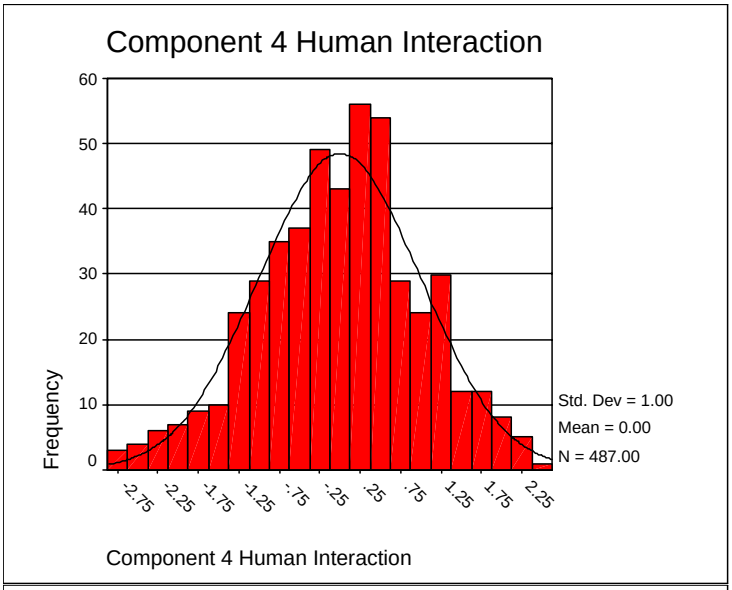
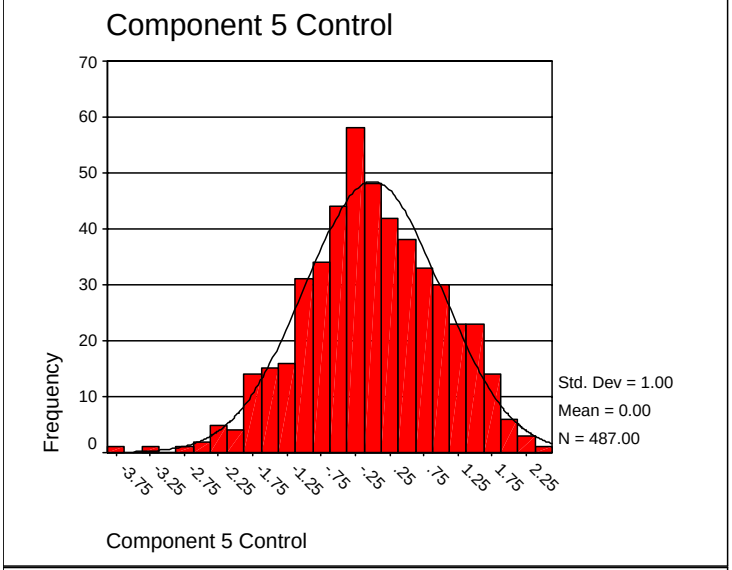
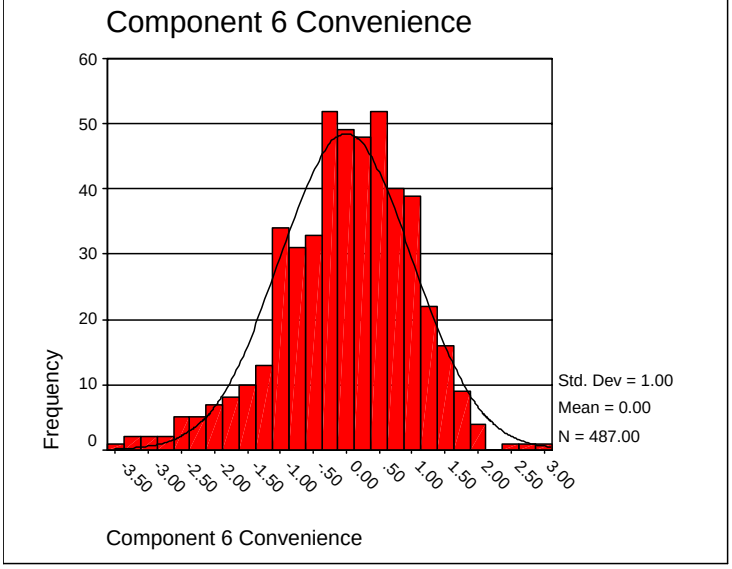
N = 502.00
Component 1 Ubiquity
Component 2 Failure Response
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 502.00
Component 2 Failure Response
Component 3 Technological Advantage
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 487.00
Component 3 Technological Advantage



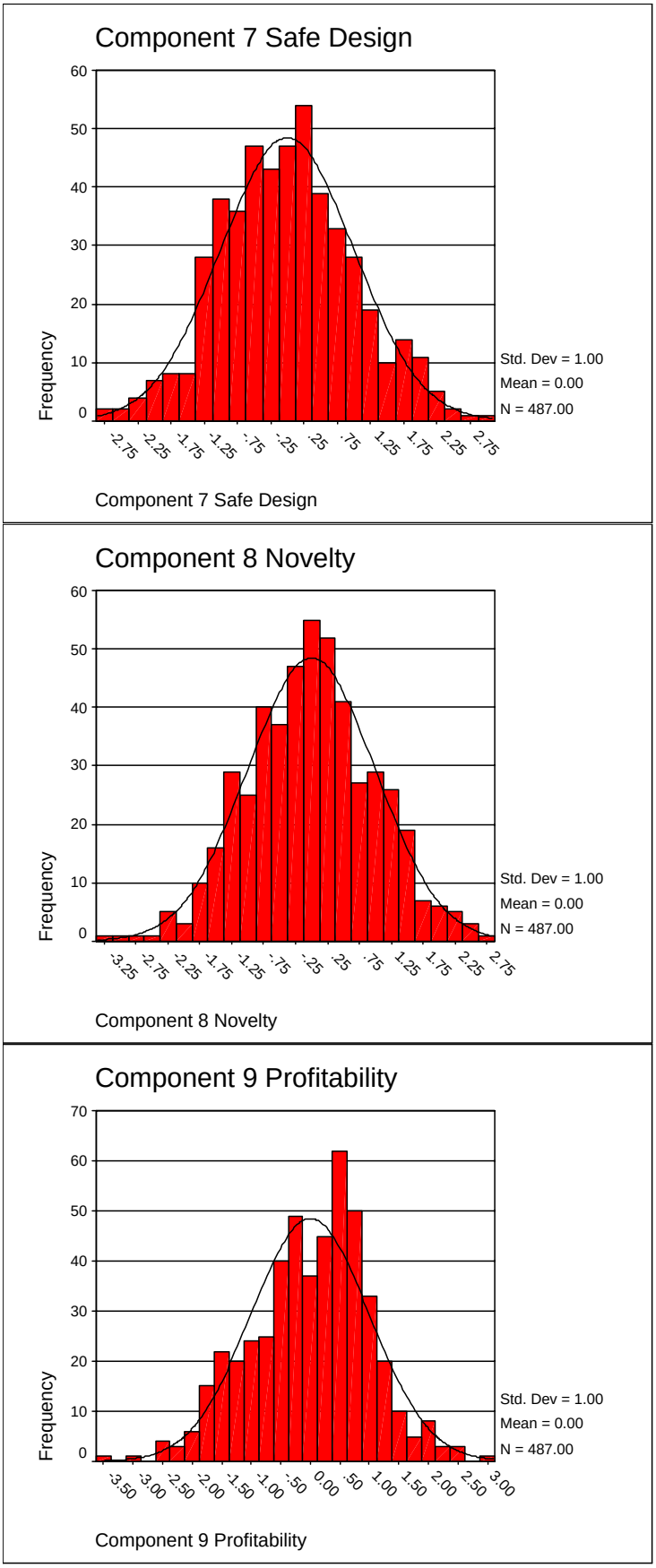
Component 4 Human Interaction



Component 5 Control



Component 6 Convenience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Component 7 Safe Design
Component 8 Novelty
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 487.00
Component 8 Novelty
Component 9 Profitability
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 487.00
Component 9 Profitability

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Component 1 Ubiquity	Between Groups	10.159	4	2.540	2.567	.037
	Within Groups	490.685	496	.989		
	Total	500.844	500			
Component 2 Failure Response	Between Groups	11.700	4	2.925	2.967	.019
	Within Groups	488.930	496	.986		
	Total	500.630	500			
Component 3 Technological Advantage	Between Groups	44.926	4	11.231	12.248	.000
	Within Groups	441.074	481	.917		
	Total	485.999	485			
Component 4 Human Interaction	Between Groups	20.664	4	5.166	5.381	.000
	Within Groups	461.763	481	.960		
	Total	482.427	485			
Component 5 Control	Between Groups	1.382	4	.346	.344	.848
	Within Groups	483.814	481	1.006		
	Total	485.196	485			
Component 6 Convenience	Between Groups	8.742	4	2.185	2.203	.068
	Within Groups	477.201	481	.992		
	Total	485.943	485			
Component 7 Safe Design	Between Groups	9.347	4	2.337	2.359	.053
	Within Groups	476.412	481	.990		
	Total	485.759	485			
Component 8 Novelty	Between Groups	33.065	4	8.266	8.808	.000
	Within Groups	451.413	481	.938		
	Total	484.478	485			
Component 9 Profitability	Between Groups	13.181	4	3.295	3.352	.010
	Within Groups	472.819	481	.983		
	Total	486.000	485			

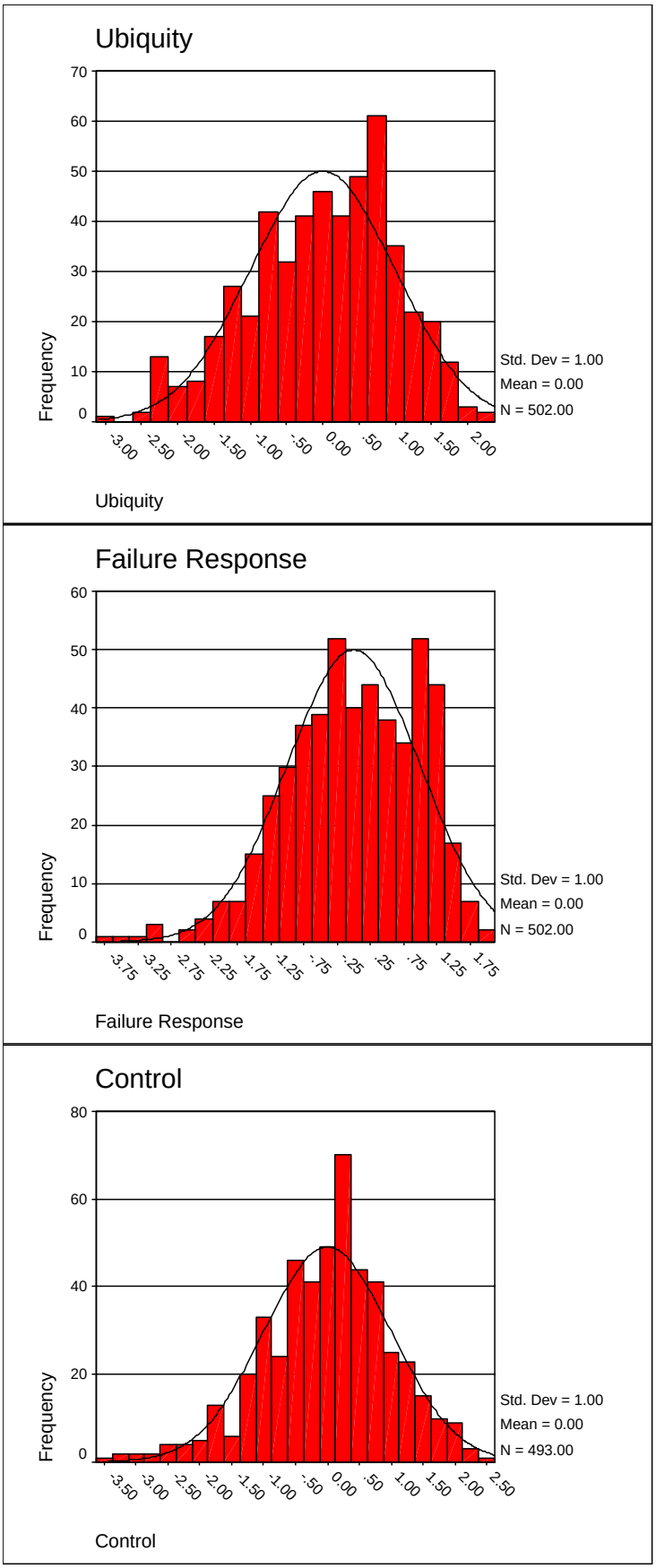
Second Regression Approach

Correlations

		Ubiquity	Failure Response	Control	Technological Dependency	Human Interaction	Convenience	Safe Design	Novelty	Overall, how favorable did you feel about using self service technologies instead of personal services?
Ubiquity	Pearson Correlation	1.000	.000	.292*	-.258*	-.054	.211*	.000	.116*	.130*
	Sig. (2-tailed)	.	1.000	.000	.000	.235	.000	.999	.011	.004
	N	502	502	487	487	487	487	487	487	501
Failure Response	Pearson Correlation	.000	1.000	-.022	-.010	-.045	.859*	.218*	-.043	-.126*
	Sig. (2-tailed)	1.000	.	.622	.828	.322	.000	.000	.342	.005
	N	502	502	487	487	487	487	487	487	501
Control	Pearson Correlation	.292*	-.022	1.000	.000	.000	.000	.000	.000	.241*
	Sig. (2-tailed)	.000	.622	.	1.000	1.000	1.000	1.000	1.000	.000
	N	487	487	493	493	493	493	493	493	492
Technological Dependency	Pearson Correlation	-.258*	-.010	.000	1.000	.000	.000	.000	.000	-.161*
	Sig. (2-tailed)	.000	.828	1.000	.	1.000	1.000	1.000	1.000	.000
	N	487	487	493	493	493	493	493	493	492
Human Interaction	Pearson Correlation	-.054	-.045	.000	.000	1.000	.000	.000	.000	.071
	Sig. (2-tailed)	.235	.322	1.000	1.000	.	1.000	1.000	1.000	.118
	N	487	487	493	493	493	493	493	493	492
Convenience	Pearson Correlation	.211*	.859*	.000	.000	.000	1.000	.000	.000	-.006
	Sig. (2-tailed)	.000	.000	1.000	1.000	1.000	.	1.000	1.000	.898
	N	487	487	493	493	493	493	493	493	492
Safe Design	Pearson Correlation	.000	.218*	.000	.000	.000	.000	1.000	.000	-.169*
	Sig. (2-tailed)	.999	.000	1.000	1.000	1.000	1.000	.	1.000	.000
	N	487	487	493	493	493	493	493	493	492
Novelty	Pearson Correlation	.116*	-.043	.000	.000	.000	.000	.000	1.000	.249*
	Sig. (2-tailed)	.011	.342	1.000	1.000	1.000	1.000	1.000	.	.000
	N	487	487	493	493	493	493	493	493	492
Overall, how favorable did you feel about using self service technologies instead	Pearson Correlation	.130*	-.126*	.241*	-.161*	.071	-.006	-.169*	.249*	1.000
	Sig. (2-tailed)	.004	.005	.000	.000	.118	.898	.000	.000	.
	N	501	501	492	492	492	492	492	492	510

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).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N = 502.00
Ubiquity
Failure Response
Frequency
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Failure Response
Control
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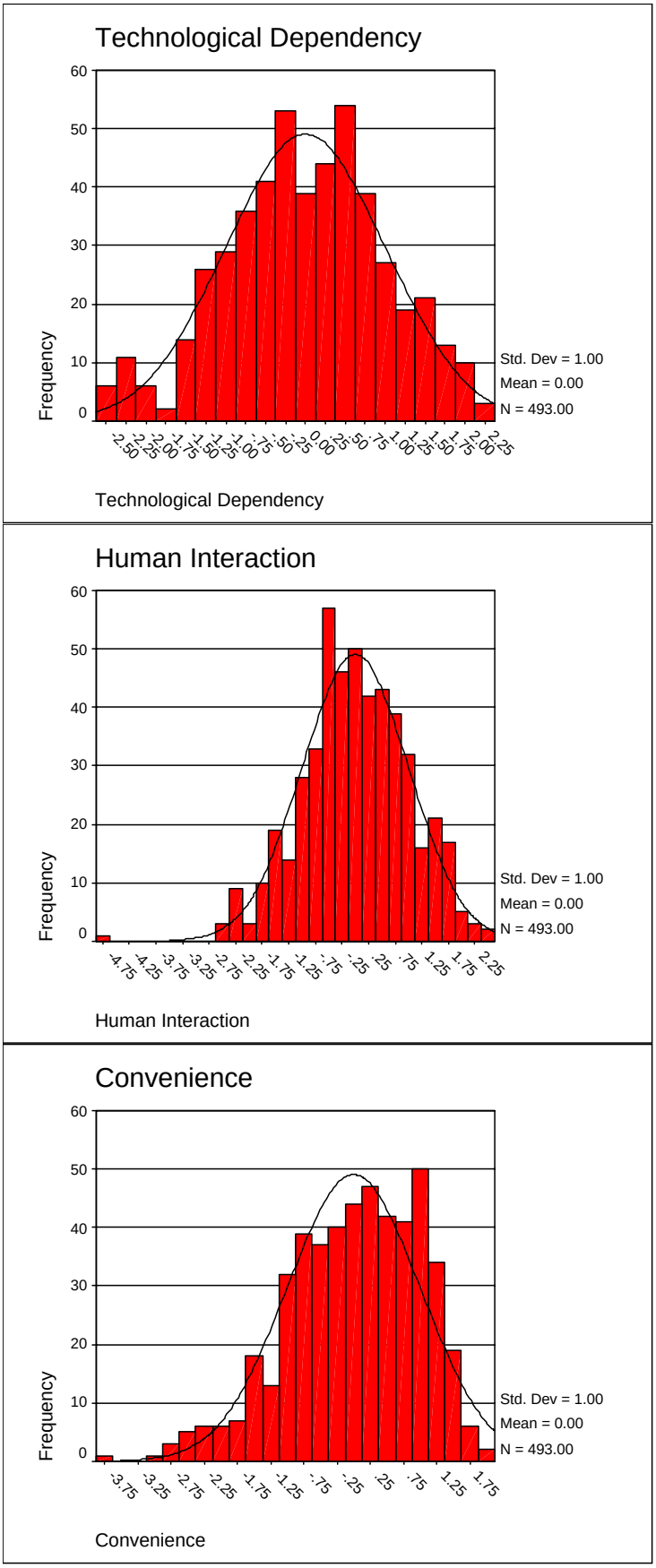
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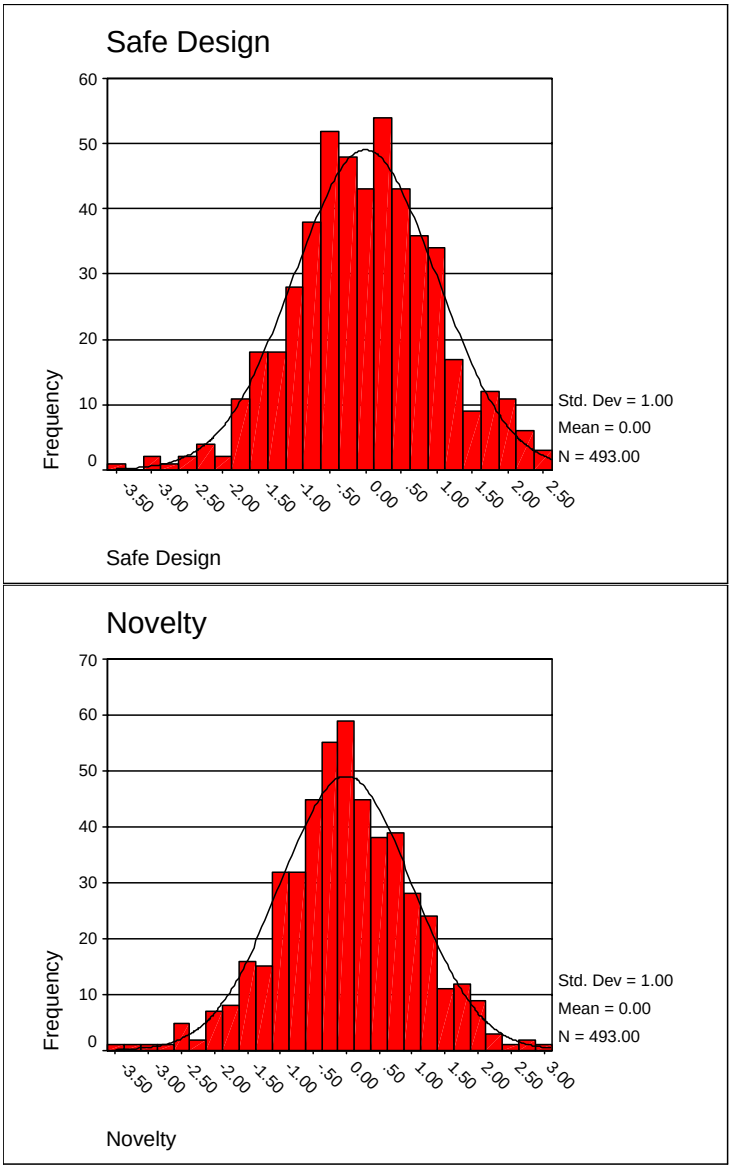
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Human Interaction
Convenience
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Convenience


Safe Design
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Safe Design
Novelty
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Novelty

ANOVA

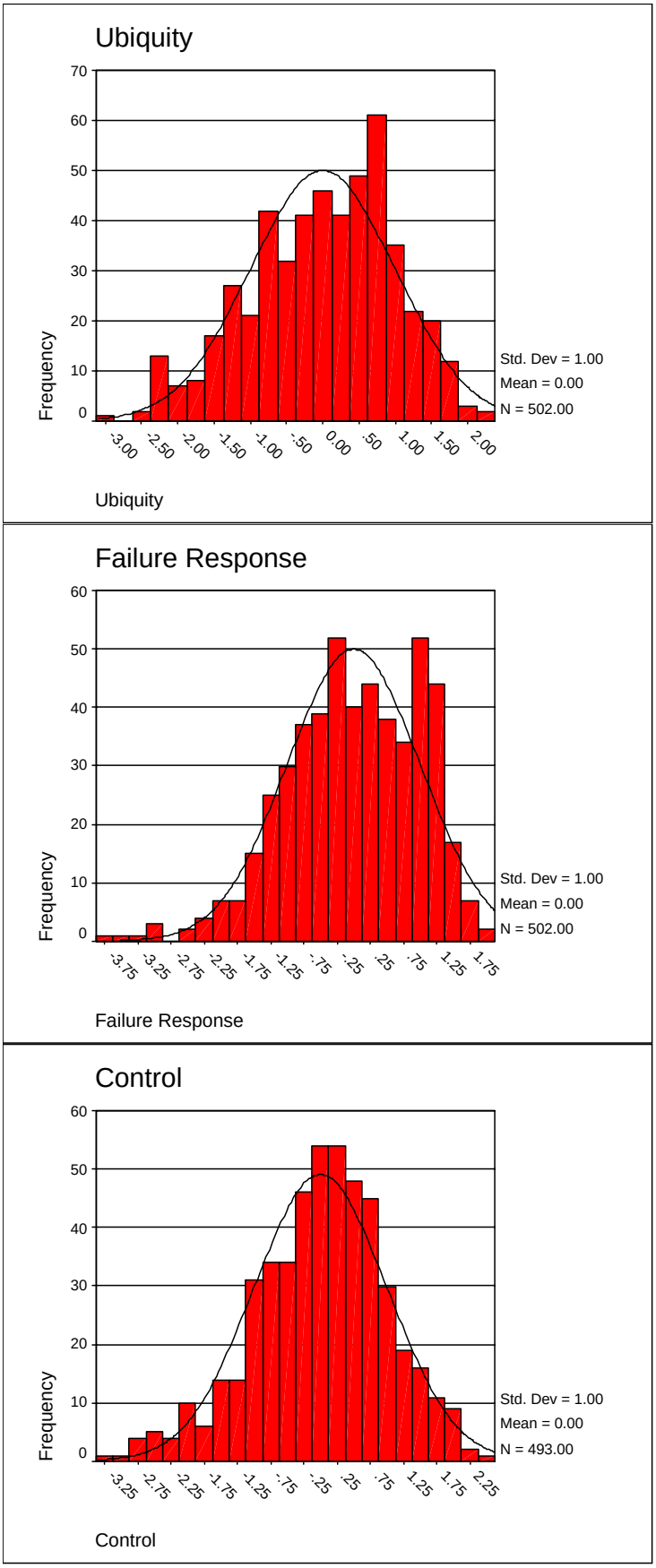
		Sum of Squares	df	Mean Square	F	Sig.
Ubiquity	Between Groups	10.159	4	2.540	2.567	.037
	Within Groups	490.685	496	.989		
	Total	500.844	500			
Failure Response	Between Groups	11.700	4	2.925	2.967	.019
	Within Groups	488.930	496	.986		
	Total	500.630	500			
Control	Between Groups	31.857	4	7.964	8.429	.000
	Within Groups	460.140	487	.945		
	Total	491.996	491			
Technological Dependency	Between Groups	18.743	4	4.686	4.844	.001
	Within Groups	471.046	487	.967		
	Total	489.788	491			
Human Interaction	Between Groups	4.976	4	1.244	1.245	.291
	Within Groups	486.451	487	.999		
	Total	491.427	491			
Convenience	Between Groups	7.730	4	1.933	1.947	.102
	Within Groups	483.426	487	.993		
	Total	491.156	491			
Safe Design	Between Groups	14.759	4	3.690	3.766	.005
	Within Groups	477.108	487	.980		
	Total	491.867	491			
Novelty	Between Groups	31.452	4	7.863	8.332	.000
	Within Groups	459.571	487	.944		
	Total	491.022	491			

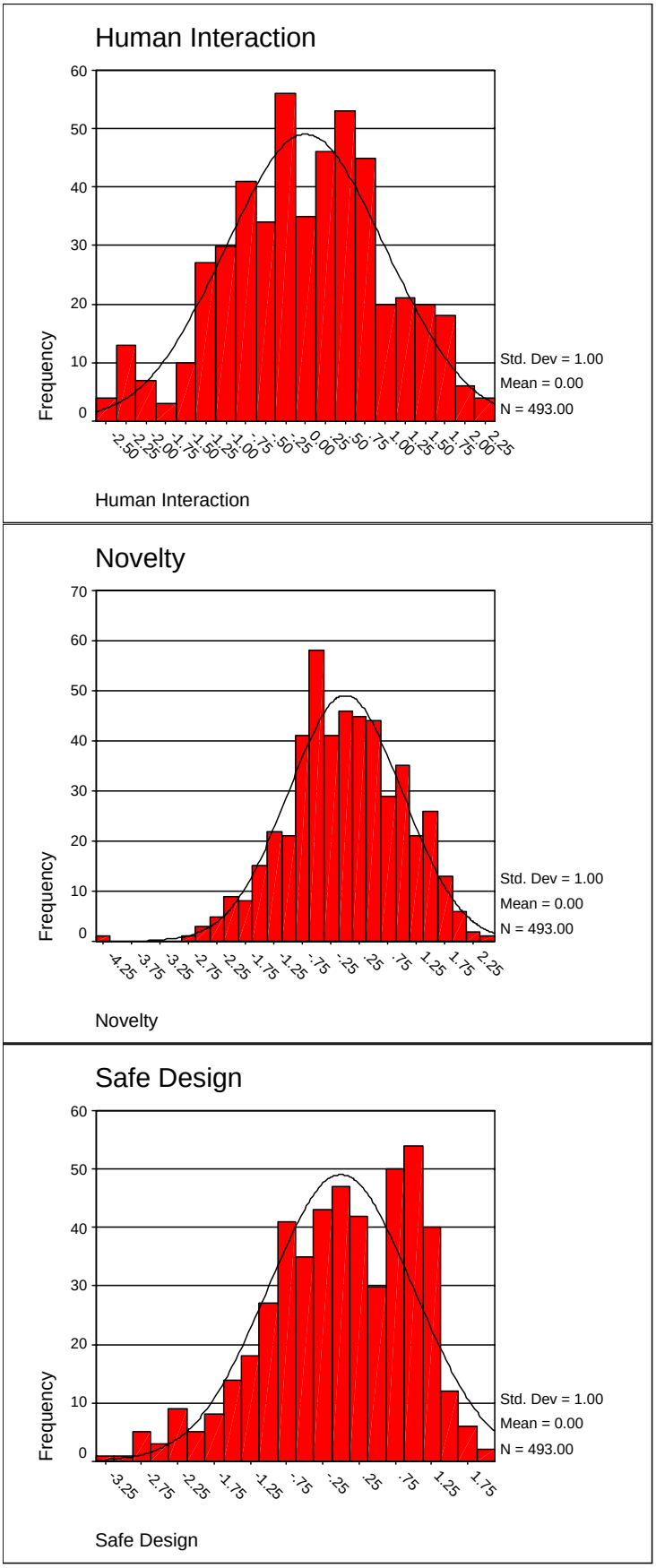
Third Regression Approach

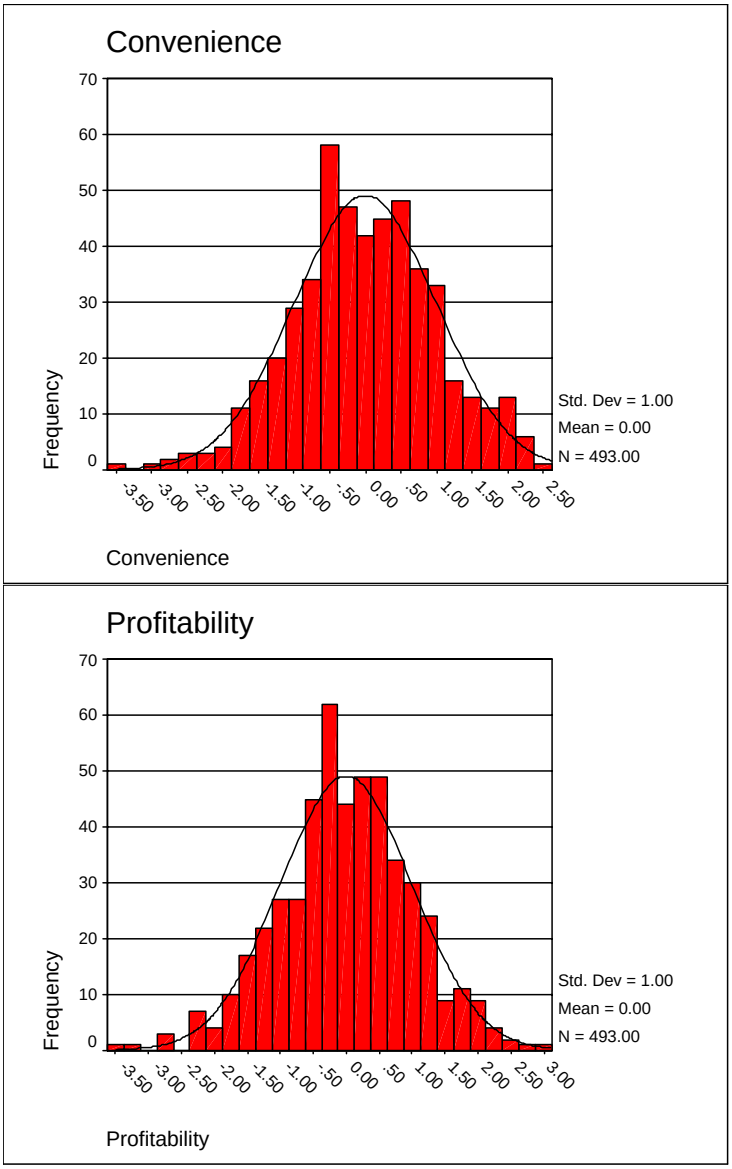
Correlations

		Ubiquity	Failure Response	Control	Human Interaction	Novelty	Safe Design	Convenience	Profitability	Overall, how favorable did you feel about using self service technologies instead of personal services?
Ubiquity	Pearson Correlation	1.000	.000	.267*	-.256*	-.059	.208*	.007	.133*	.130*
	Sig. (2-tailed)	.	1.000	.000	.000	.194	.000	.875	.003	.004
	N	502	502	487	487	487	487	487	487	501
Failure Response	Pearson Correlation	.000	1.000	-.039	.001	-.034	.886*	.189*	-.044	-.126*
	Sig. (2-tailed)	1.000	.	.388	.989	.460	.000	.000	.332	.005
	N	502	502	487	487	487	487	487	487	501
Control	Pearson Correlation	.267*	-.039	1.000	.000	.000	.000	.000	.000	.210*
	Sig. (2-tailed)	.000	.388	.	1.000	1.000	1.000	1.000	1.000	.000
	N	487	487	493	493	493	493	493	493	492
Human Interaction	Pearson Correlation	-.256*	.001	.000	1.000	.000	.000	.000	.000	-.164*
	Sig. (2-tailed)	.000	.989	1.000	.	1.000	1.000	1.000	1.000	.000
	N	487	487	493	493	493	493	493	493	492
Novelty	Pearson Correlation	-.059	-.034	.000	.000	1.000	.000	.000	.000	.054
	Sig. (2-tailed)	.194	.460	1.000	1.000	.	1.000	1.000	1.000	.228
	N	487	487	493	493	493	493	493	493	492
Safe Design	Pearson Correlation	.208*	.886*	.000	.000	.000	1.000	.000	.000	-.028
	Sig. (2-tailed)	.000	.000	1.000	1.000	1.000	.	1.000	1.000	.533
	N	487	487	493	493	493	493	493	493	492
Convenience	Pearson Correlation	.007	.189*	.000	.000	.000	.000	1.000	.000	-.149*
	Sig. (2-tailed)	.875	.000	1.000	1.000	1.000	1.000	.	1.000	.001
	N	487	487	493	493	493	493	493	493	492
Profitability	Pearson Correlation	.133*	-.044	.000	.000	.000	.000	.000	1.000	.270*
	Sig. (2-tailed)	.003	.332	1.000	1.000	1.000	1.000	1.000	.	.000
	N	487	487	493	493	493	493	493	493	492
Overall, how favorable did you feel about using self service technologies instead	Pearson Correlation	.130*	-.126*	.210*	-.164*	.054	-.028	-.149*	.270*	1.000
	Sig. (2-tailed)	.004	.005	.000	.000	.228	.533	.001	.000	.
	N	501	501	492	492	492	492	492	492	510

**. Correlation is significant at the 0.01 level (2-tailed).


Ubiquity
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 502.00
Ubiquity
Failure Response
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 502.00
Failure Response
Control
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Control


Human Interaction
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Human Interaction
Novelty
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Novelty
Safe Design
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Safe Design


Convenience
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Convenience
Profitability
Frequency
Std. Dev = 1.00
Mean = 0.00
N = 493.00
Profitability

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Ubiquity	Between Groups	10.159	4	2.540	2.567	.037
	Within Groups	490.685	496	.989		
	Total	500.844	500			
Failure Response	Between Groups	11.700	4	2.925	2.967	.019
	Within Groups	488.930	496	.986		
	Total	500.630	500			
Control	Between Groups	23.935	4	5.984	6.226	.000
	Within Groups	468.047	487	.961		
	Total	491.982	491			
Human Interaction	Between Groups	19.054	4	4.764	4.930	.001
	Within Groups	470.537	487	.966		
	Total	489.591	491			
Novelty	Between Groups	3.674	4	.918	.917	.454
	Within Groups	487.736	487	1.002		
	Total	491.410	491			
Safe Design	Between Groups	5.917	4	1.479	1.485	.205
	Within Groups	485.137	487	.996		
	Total	491.054	491			
Convenience	Between Groups	11.207	4	2.802	2.839	.024
	Within Groups	480.619	487	.987		
	Total	491.826	491			
Profitability	Between Groups	38.088	4	9.522	10.238	.000
	Within Groups	452.965	487	.930		
	Total	491.053	491			

Appendix 10

Demographics-Type of SST

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age? * Check the type of interaction you have had that best remember.	*510*	*99.8%*	*1*	*.2%*	*511*	*100.0%*
Gender? * Check the type of interaction you have had that best remember.	*509*	*99.6%*	*2*	*.4%*	*511*	*100.0%*
School level? * Check the type of interaction you have had that best remember.	*504*	*98.6%*	*7*	*1.4%*	*511*	*100.0%*
Average month family income * Check the type of interaction you have had that best remember.	*463*	*90.6%*	*48*	*9.4%*	*511*	*100.0%*

Age * Check the type of interaction you have had that best remember.

Crosstab

Count

		Check the type of interaction you have had that best remember.				Total
		telephone	atm	internet	all	
Age?	Under 25	22	69	162	15	268
	25 to 40	23	42	31	6	102
	41 to 55	25	61	24	14	124
	More than 55	1	14		1	16
Total		71	186	217	36	510

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.257[a]	9	.000
Continuity Correction			
Likelihood Ratio	97.860	9	.000
Linear-by-Linear Association	30.200	1	.000
N of Valid Cases	510		

a. 2 cells (12.5%) have expected count less than 5. The minimum expected count is 1.13.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.425			.000
	Cramer's V	.246			.000
	Contingency Coefficient	.391			.000
N of Valid Cases		510			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Gender * Check the type of interaction you have had that best remember.

Crosstab

Count

		Check the type of interaction you have had that best remember.				
		telephone	atm	internet	all	Total
Gender?	Female	40	117	125	18	300
	Male	31	69	91	18	209
Total		71	186	216	36	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.697[a]	3	.441
Continuity Correction			
Likelihood Ratio	2.690	3	.442
Linear-by-Linear Association	.580	1	.446
N of Valid Cases	509		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.78.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.073			.441
	Cramer's V	.073			.441
	Contingency Coefficient	.073			.441
N of Valid Cases		509			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

School level * Check the type of interaction you have had that best remember.

Crosstab

Count

		Check the type of interaction you have had that best remember.				
		telephone	atm	internet	all	Total
School level?	High school or less	7	13	13	2	35
	Some college	17	41	50	4	112
	College graduate	37	102	124	24	287
	Graduate school	10	30	25	5	70
Total		71	186	212	35	504

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.961[a]	9	.744
Continuity Correction			
Likelihood Ratio	6.229	9	.717
Linear-by-Linear Association	.600	1	.439
N of Valid Cases	504		

a. 3 cells (18.8%) have expected count less than 5. The minimum expected count is 2.43.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.109			.744
	Cramer's V	.063			.744
	Contingency Coefficient	.108			.744
N of Valid Cases		504			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Average month family income * Check the type of interaction you have had that best remember.

Crosstab

Count

		Check the type of interaction you have had that best remember.				
		telephone	atm	internet	all	Total
Average month family income	less than $5000	5	14	19	1	39
	$5000 to $10000	16	32	24	2	74
	$10000 to $20000	21	47	55	14	137
	$20000 to $30000	11	36	25	6	78
	More than $30000	12	48	66	9	135
Total		65	177	189	32	463

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.133[a]	12	.085
Continuity Correction			
Likelihood Ratio	19.695	12	.073
Linear-by-Linear Association	4.256	1	.039
N of Valid Cases	463		

a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 2.70.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.203			.085
	Cramer's V	.117			.085
	Contingency Coefficient	.199			.085
N of Valid Cases		463			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Demographics-General Experience with SST's

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age? * How did you evaluate your general experience with self service technologies?	*509*	*99.6%*	*2*	*.4%*	*511*	*100.0%*
Gender? * How did you evaluate your general experience with self service technologies?	*508*	*99.4%*	*3*	*.6%*	*511*	*100.0%*
School level? * How did you evaluate your general experience with self service technologies?	*503*	*98.4%*	*8*	*1.6%*	*511*	*100.0%*
Average month family income * How did you evaluate your general experience with self service technologies?	*462*	*90.4%*	*49*	*9.6%*	*511*	*100.0%*

Age * How did you evaluate your general experience with self service technologies?

Crosstab

Count

		How did you evaluate your general experience with self service technologies?			
		less satisfaction than I expected	the level of satisfaction than I expected	more satisfaction than I expected	Total
Age?	Under 25	20	206	41	267
	25 to 40	13	77	12	102
	41 to 55	15	89	20	124
	More than 55		14	2	16
Total		48	386	75	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.215[a]	6	.400
Continuity Correction			
Likelihood Ratio	7.643	6	.265
Linear-by-Linear Association	.362	1	.547
N of Valid Cases	509		

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 1.51.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.111			.400
	Cramer's V	.078			.400
	Contingency Coefficient	.110			.400
N of Valid Cases		509			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Gender * How did you evaluate your general experience with self service technologies?

Crosstab

Count

		How did you evaluate your general experience with self service technologies?			
		less satisfaction than I expected	the level of satisfaction than I expected	more satisfaction than I expected	Total
Gender?	Female	*32*	*229*	*39*	*300*
	Male	*16*	*156*	*36*	*208*
Total		*48*	*385*	*75*	*508*

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	*2.723*[a]	*2*	*.256*
Continuity Correction			
Likelihood Ratio	*2.729*	*2*	*.256*
Linear-by-Linear Association	*2.717*	*1*	*.099*
N of Valid Cases	*508*		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.65.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	*.073*			*.256*
	Cramer's V	*.073*			*.256*
	Contingency Coefficient	*.073*			*.256*
N of Valid Cases		*508*			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

School level * How did you evaluate your general experience with self service technologies?

Crosstab

Count

		How did you evaluate your general experience with self service technologies?			
		less satisfaction than I expected	the level of satisfaction than I expected	more satisfaction than I expected	Total
School level?	High school or less	6	24	5	35
	Some college	10	87	15	112
	College graduate	18	226	42	286
	Graduate school	13	44	13	70
Total		47	381	75	503

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.580[a]	6	.024
Continuity Correction			
Likelihood Ratio	13.118	6	.041
Linear-by-Linear Association	.147	1	.702
N of Valid Cases	503		

a. 1 cells (8.3%) have expected count less than 5. The minimum expected count is 3.27.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.170			.024
	Cramer's V	.120			.024
	Contingency Coefficient	.168			.024
N of Valid Cases		503			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Average month family income * How did you evaluate your general experience with self service technologies?

Crosstab

Count

		How did you evaluate your general experience with self service technologies?			
		less satisfaction than I expected	the level of satisfaction than I expected	more satisfaction than I expected	Total
Average month family income	less than $5000	4	28	7	39
	$5000 to $10000	7	54	13	74
	$10000 to $20000	13	109	14	136
	$20000 to $30000	7	58	13	78
	More than $30000	12	99	24	135
Total		43	348	71	462

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.979[a]	8	.859
Continuity Correction			
Likelihood Ratio	4.228	8	.836
Linear-by-Linear Association	.201	1	.654
N of Valid Cases	462		

a. 1 cells (6.7%) have expected count less than 5. The minimum expected count is 3.63.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.093			.859
	Cramer's V	.066			.859
	Contingency Coefficient	.092			.859
N of Valid Cases		462			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Demographics-Intention to use SST's

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age? * Overall, how favorable did you feel about using self service technologies instead of personal services?	*509*	*99.6%*	*2*	*.4%*	*511*	*100.0%*
Gender? * Overall, how favorable did you feel about using self service technologies instead of personal services?	*508*	*99.4%*	*3*	*.6%*	*511*	*100.0%*
School level? * Overall, how favorable did you feel about using self service technologies instead of personal services?	*503*	*98.4%*	*8*	*1.6%*	*511*	*100.0%*
Average month family income * Overall, how favorable did you feel about using self service technologies instead of personal services?	*462*	*90.4%*	*49*	*9.6%*	*511*	*100.0%*

Age * Overall, how favorable did you feel about using self service technologies instead of personal services?

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Age?	Under 25	2	9	65	168	23	267
	25 to 40	1	15	19	54	13	102
	41 to 55	5	11	28	68	12	124
	More than 55			4	8	4	16
Total		8	35	116	298	52	509

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.861[a]	12	.003
Continuity Correction			
Likelihood Ratio	27.920	12	.006
Linear-by-Linear Association	1.640	1	.200
N of Valid Cases	509		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is .25.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.242			.003
	Cramer's V	.140			.003
	Contingency Coefficient	.235			.003
N of Valid Cases		509			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Gender * Overall, how favorable did you feel about using self service technologies instead of personal services?

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Gender?	Female	5	29	66	174	25	299
	Male	3	6	50	123	27	209
Total		8	35	116	297	52	508

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.058[a]	4	.026
Continuity Correction			
Likelihood Ratio	12.018	4	.017
Linear-by-Linear Association	5.496	1	.019
N of Valid Cases	508		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 3.29.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.148			.026
	Cramer's V	.148			.026
	Contingency Coefficient	.146			.026
N of Valid Cases		508			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

School level * Overall, how favorable did you feel about using self service technologies instead of personal services?

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
School level?	High school or less		5	8	17	5	35
	Some college	1	9	24	71	6	111
	College graduate	5	12	68	170	32	287
	Graduate school	2	8	15	37	8	70
Total		8	34	115	295	51	503

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.181[a]	12	.232
Continuity Correction			
Likelihood Ratio	15.447	12	.218
Linear-by-Linear Association	.013	1	.910
N of Valid Cases	503		

a. 7 cells (35.0%) have expected count less than 5. The minimum expected count is .56.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.174			.232
	Cramer's V	.100			.232
	Contingency Coefficient	.171			.232
N of Valid Cases		503			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Average month family income * Overall, how favorable did you feel about using self service technologies instead of personal services?

Crosstab

Count

		Overall, how favorable did you feel about using self service technologies instead of personal services?					
		Definitely not going to use them	Maybe I'm Not going to use them	Neutral	Maybe I'm Going to use them	Definitely going to use them	Total
Average month family income	less than $5000	1	3	11	21	3	39
	$5000 to $10000		5	17	45	7	74
	$10000 to $20000	5	6	26	83	17	137
	$20000 to $30000		6	16	49	6	77
	More than $30000	1	11	37	70	16	135
Total		7	31	107	268	49	462

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.917[a]	16	.531
Continuity Correction			
Likelihood Ratio	16.298	16	.432
Linear-by-Linear Association	.000	1	.983
N of Valid Cases	462		

a. 8 cells (32.0%) have expected count less than 5. The minimum expected count is .59.

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Phi	.180			.531
	Cramer's V	.090			.531
	Contingency Coefficient	.177			.531
N of Valid Cases		462			

a. Not assuming the null hypothesis.

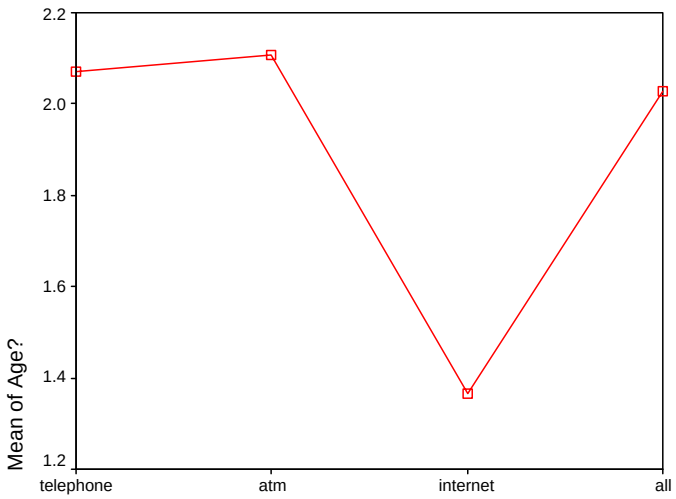
b. Using the asymptotic standard error assuming the null hypothesis.

Appendix 11

One-way ANOVA Type of Interaction-Demographics

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	65.695	3	21.898	30.299	.000
	Within Groups	365.709	506	.723		
	Total	431.404	509			
Gender?	Between Groups	.653	3	.218	.897	.443
	Within Groups	122.530	505	.243		
	Total	123.183	508			
School level?	Between Groups	1.209	3	.403	.681	.564
	Within Groups	295.903	500	.592		
	Total	297.111	503			
Average month family income	Between Groups	7.814	3	2.605	1.579	.194
	Within Groups	757.214	459	1.650		
	Total	765.028	462			



Check the type of interaction you have had that best remember.

One-way ANOVA SST's Evaluation-Demographics

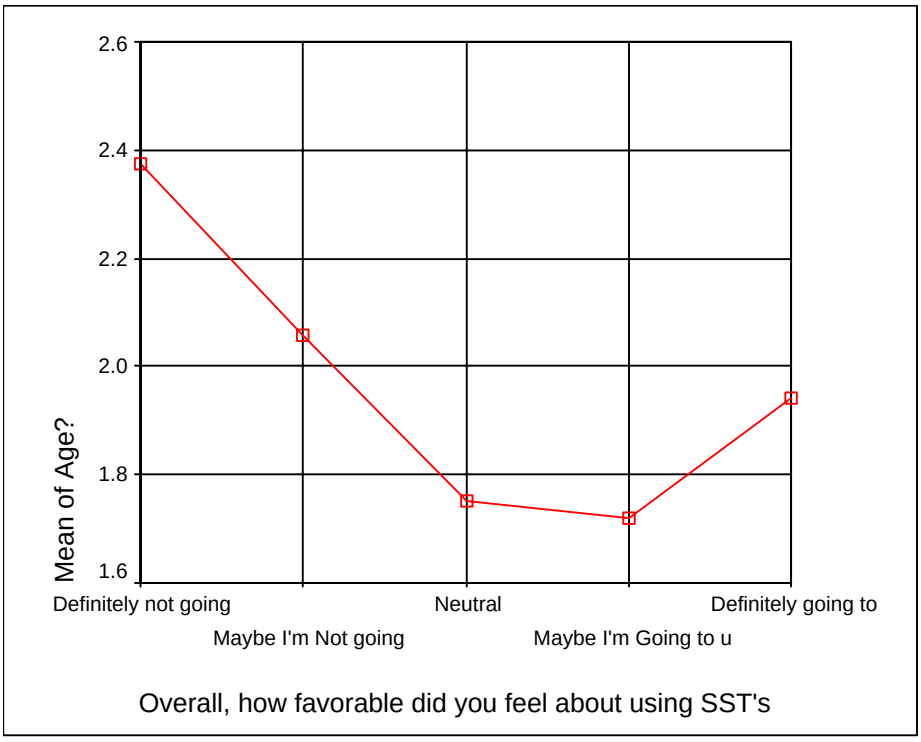
ANOVA

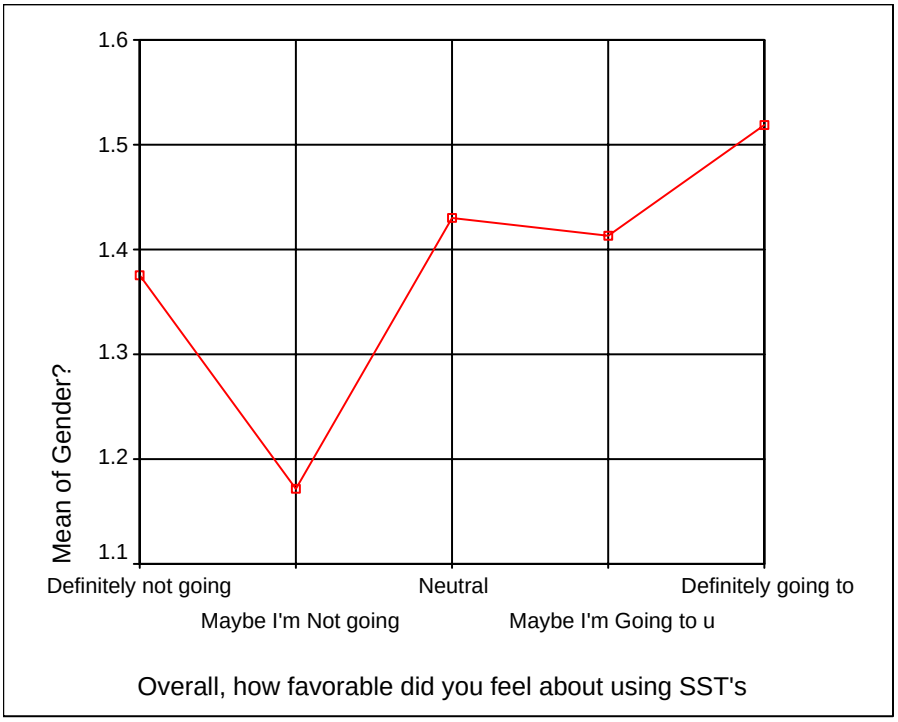
		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	.689	2	.344	.405	.667
	Within Groups	430.105	506	.850		
	Total	430.794	508			
Gender?	Between Groups	.658	2	.329	1.361	.257
	Within Groups	122.176	505	.242		
	Total	122.835	507			
School level?	Between Groups	.440	2	.220	.371	.690
	Within Groups	296.622	500	.593		
	Total	297.062	502			
Average month family income	Between Groups	.337	2	.168	.101	.904
	Within Groups	764.512	459	1.666		
	Total	764.848	461			

One-way ANOVA Intention to Use-Demographics

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Age?	Between Groups	8.134	4	2.033	2.425	.047
	Within Groups	422.660	504	.839		
	Total	430.794	508			
Gender?	Between Groups	2.678	4	.669	2.798	.026
	Within Groups	120.336	503	.239		
	Total	123.014	507			
School level?	Between Groups	1.553	4	.388	.656	.623
	Within Groups	294.952	498	.592		
	Total	296.505	502			
Average month family income	Between Groups	2.902	4	.725	.435	.783
	Within Groups	761.793	457	1.667		
	Total	764.695	461			




1.6
1.5
1.4
1.3
1.2
1.1
Mean of Gender?
Definitely not going
Maybe I'm Not going
Neutral
Maybe I'm Going to u
Definitely going to
Overall, how favorable did you feel about using SST's

One-way ANOVA Gender-Intention to use

Descriptives

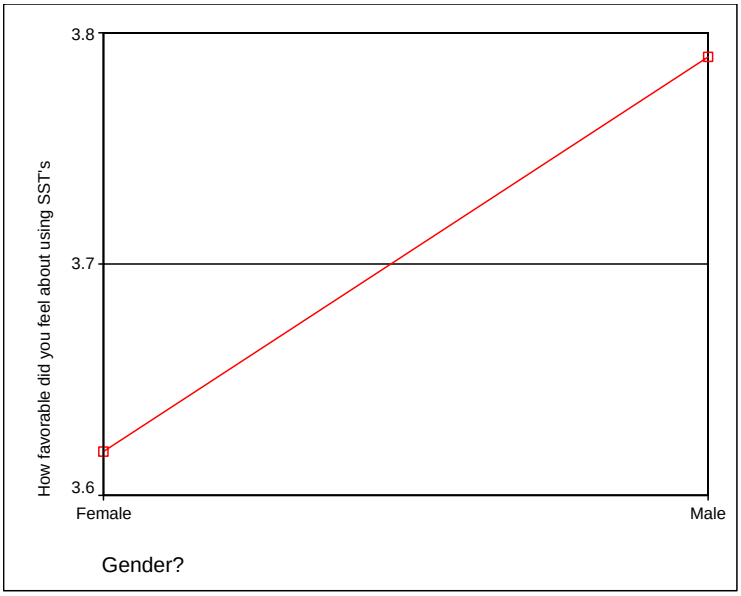
Overall, how favorable did you feel about using self service technologies instead of personal services?

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Female	*299*	*3.62*	*.84*	*4.84E-02*	*3.52*	*3.71*	*1*	*5*
Male	*209*	*3.79*	*.76*	*5.23E-02*	*3.69*	*3.89*	*1*	*5*
Total	*508*	*3.69*	*.81*	*3.58E-02*	*3.62*	*3.76*	*1*	*5*

ANOVA

Overall, how favorable did you feel about using self service technologies instead of personal services?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	*3.586*	*1*	*3.586*	*5.545*	*.019*
Within Groups	*327.272*	*506*	*.647*		
Total	*330.858*	*507*			



One-way ANOVA Age-Intention to use

Descriptives

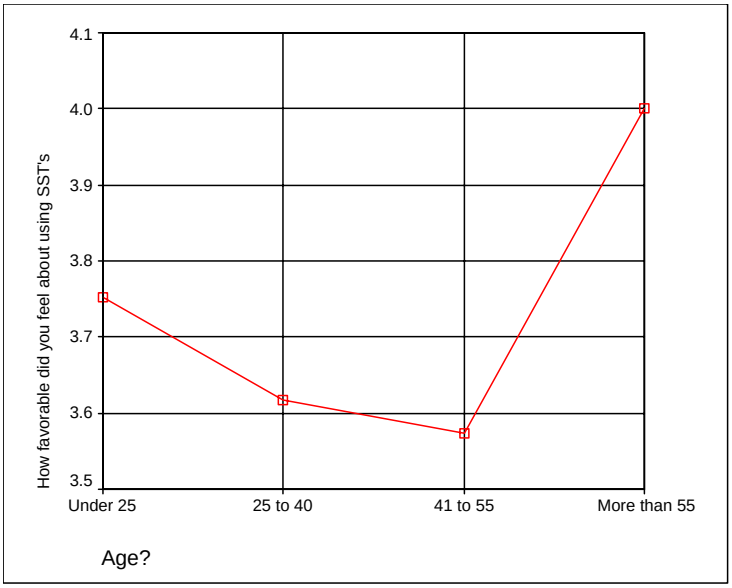
Overall, how favorable did you feel about using self service technologies instead of personal services?

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Under 25	267	3.75	.69	4.21E-02	3.67	3.84	1	5
25 to 40	102	3.62	.92	9.14E-02	3.44	3.80	1	5
41 to 55	124	3.57	.93	8.35E-02	3.41	3.74	1	5
More than 55	16	4.00	.73	.18	3.61	4.39	3	5
Total	509	3.69	.81	3.58E-02	3.62	3.76	1	5

ANOVA

Overall, how favorable did you feel about using self service technologies instead of personal services?

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.834	3	1.611	2.495	.059
Within Groups	326.120	505	.646		
Total	330.955	508			



Appendix 12 Qualitative Outcomes

Depth Interviews Outcomes

Personal Interaction	**Bad Mood** ✓ The advantage of the Internet is that one is not required to deal with an ill tempered/bad mood operator. **By efficiency** ✓ I prefer to replace the services of a person by those offered by a machine, as long as the machine is efficient. **By cost** ✓ I prefer to replace the services of a person by those offered by a machine, as long as the machine is less expensive. **By convenience** ✓ I consider it more convenient to do my banking operations with a machine than to do it with people. **By security** ✓ Personal interaction cannot be replaced by a machine; I do not feel safe, since there is no person who endorses the operation that I am making. **Socialization** ✓ Since people have free time they prefer to go personally to the bank. ✓ I prefer not to use the automated services because I like to interact with people. ✓ Personal Services has become a social experience, more than a convenience. **Specialized Consulting** ✓ Personal interaction is required when there is a business relationship and not just an operative one. ✓ I will ask you to conduct operations in the bank where I can generate a value to you as your financial advisor. You can come visit me when you have something to talk about, when you have a need, or when you require my assistance as a banker. **Basic operations** ✓ Don't come just to pay electricity, check your balance, pay the telephone bill, or withdraw cash.
Process Design	**Standardization** ✓ A good design in automated services helps to standardize solutions for the user. ✓ An Internet site must be standardized, so that all its sections are equal to all clients, and they can perform transactions more easily. **Ease of use** ✓ The automated service must be designed in such a form so it can be well understood by any person. ✓ In an online search, the search engines facilitate the process, since they define exactly what the client is looking for. **Familiarization** ✓ A good design allows for the fastest familiarization with the service. ✓ The options in a telephone system menu change constantly, and do not allow me to familiarize with these options enough to remember them. **Immediate access** ✓ People look for instant information; they become desperate if a web page takes a lot of time loading. **Alternatives of operation** ✓ Quality depends on teamwork and not only the web page. It depends on several things: whether there is electricity, a fast internet connection, a well placed display, etc. ✓ The opportunity to conduct diverse operations through the web page.

Costs	**Operation** ✓ Automation reduces the operation costs of service. ✓ Automation reduces the operation costs of service, which represents an advantage for the consumer. **Administration** ✓ The integration of various automated services in a single place (banking portal) reduces the number of suppliers of the service. ✓ An automated system is easily managed. **Investment** ✓ A high initial investment is required in order to have automated services which operate well. **For the user** ✓ Long distance calls are expensive and it is not economically viable to be speaking by telephone two or three times a day in long distance calls. ✓ In the case of text messages, young people adopted it as a first group because they need to communicate a lot. However, the cost of making calls is still high for them, and they obtain a service where you can send a message at one third or one fourth of the normal cost for a call. ✓ You spend less money and time (in gasoline and transportation in general), since you can reach these services from your work. **Comparative** ✓ The cost of automated services technology is the same as the cost of personal services , in any case it would be more expensive if we considered the additional shipping costs ✓ It is cheaper to buy through Internet. ✓ Having a person answering the phone is very expensive, but having an answering machine is cheaper.
Failure Response	**Human Support** ✓ If the automation does not work, there must always be a personalized service backup response. ✓ People must be available in case the technology fails, and also to provide feedback and improve the technology. ✓ It is easier to interact personally with somebody in case of failure or doubts. **Compensation** ✓ In automated services it is difficult to compensate the errors. **Assertiveness regarding errors** ✓ Some components of automated services (e-mail) deepen problems, because the interaction is not immediate. **Problem solutions** ✓ People understand that products can fail. Perhaps as a consumer you are more tolerant when technology fails, but people cannot tolerate a failure in customer service ✓ If they find technological problems, people will return to traditional services (banking Operations) ✓ An automated service can't offer solutions to specific problems from users. **Administration of errors** ✓ In Internet we are not leaving the costumer alone. Let's suppose the customer makes a transfer, a tax payment, or checks his/her balance. If the Internet does not work, the customer can send us an email. In the real world you are used to going to the attendant and complain if something does not work. In the virtual world, you send an email, complain about it and expect a solution. ✓ The bureaucratization doesn't refer directly to the automated services, but to the organization; it means that the organization does not have human support in all points. ✓ I consider inadequate the processes that consumers must face to reach an appropriate response to a failure on automated services **Responsibility** ✓ One thing which happens in Mexico, and not in USA: if there is some error, the

	assumption is that the client is responsible for it, until the opposite is proven. ✓ In the US, the client is right. In Mexico, there is no certainty that justice will be done for the client.
Change Resistance	**Age** ✓ Some people are not going to access because of their age and some others are not going to access because of their economic situation. ✓ The older people are more reluctant to the use automated services. ✓ The young people do not have distrust for technology, because they are almost born using it. **Customs** ✓ It has to do with culture and change resistance. Advances are going to be very slow. ✓ When there are changes in something which people are used to, there is resistance. ✓ It is a cultural problem, people are more conservative, less attracted to new stuff, more accustomed to the status quo. **Culture** ✓ The Internet in Mexico is something cultural, is something privileged, the people who know to use a computer must feel privileged. ✓ You have the early adopters, those who are enthusiastic about technology because they were already exposed to it by banks ✓ Some people are confused, knowing about the existence of the technology, but not seeing possibilities in the Internet. **Better alternatives** ✓ If an alternative exists and it's still functional or efficient, I'm going to keep using it. **Change by necessity** ✓ Whether you like or not, change is something that comes to you. People must evolve. ✓ A positive thing is that now people are more familiar with change, they realize the world is changing and the technological need is more and more recurrent. ✓ The person who loses the fear is the one who has a great need and doesn't have an alternative. **Fear** ✓ The acceptance of the technology also depends on the fear of people. **Normal behavior** ✓ The bank knows that there are clients who are never going to access by Internet **Level of involvement** ✓ The time spent using the Internet depends on the complexity and the degree of importance of the decision taken when making an operation.
Speed /Time	✓ To use the Internet is faster than dealing with somebody personally. ✓ The electronic cashier is much faster and I already know what I must do. ✓ With automated services you are going to spend less time. ✓ When people already know how to handle the technology, simplicity of design is best. They do not want images, they want speed.
Security	**Trustworthiness** ✓ Confidence and selection to make transactions on an internet portal depend on the company's prestige. ✓ I use automated services if they offer complete support and a full guarantee. ✓ "Word of mouth" creates confidence in the automated services. ✓ Our bank was very careful in developing world class technological applications, to be safe on the Internet. We have passwords, access codes, we encrypt the information and decode it: all these things make the bank as safe on the Internet as it is by traditional means. ✓ Security means no fraud. It includes a fear connotation that has to do with the tool being safe. ✓ Transactions (by Internet) can become safer and more reliable than other means (telephone or personal). **Control**

	✓ There is no control of the flow of information on the Internet. **Security in the process** ✓ The most common fear is when the Teller Machine swallows the card and because of it, money in the account could be discounted without being obtained. ✓ In the Internet, depending on security, you don't know if you have paid or not and don't know who you are paying to. ✓ The system support assures almost a 100% security of the transactions. ✓ Giving your credit card's number by Internet is a taboo; you think it is not safe. ✓ There are taboos about the security of cahiers, the Internet, etc. It relates to people's perception of insecurity, it's a perception issue. ✓ I don't go to the bank because of insecurity (robbery-assault). **Privacy** ✓ The Internet gives you privacy to do activities that cannot be done with much freedom by other means. ✓ The ATM booths don't give adequate privacy. ✓ Related to privacy, I feel in part there is no complete privacy. I don't believe it is what in the end makes you decide; except for some cases in which I perform transactions that I do not want anybody to know about. These type of transactions are few, though. ✓ Privacy or confidentiality gives people some kind of power, it enables them to lose fear and enter almost anywhere.
Knowledge	**Familiarization** ✓ The more familiarized the user is with automated services, the more frequent and easy their use. ✓ The adoption or penetration of the technology is relatively slow because of the ignorance that exists. ✓ If I know the way automated services work, I don't need personal services. ✓ There is a trend to use automated services only in business to business (e-business). ✓ Automated systems require an acculturation process. This means people need to realize how this process must be done. **Dominance** ✓ The lack of technology dominance generates frustration **Added Value** ✓ The apparent insecurity in the Internet causes the client to perceive transactions as low-value. ✓ People don't use the Internet because they don't perceive any added value. ✓ There will be several alternatives to generate confidence, one of them will be training, and another will be positive word of mouth.
Accessibility	**Ubiquity** ✓ As Bill Gates said: Any time, any place, any where, any device ✓ Ubiquity means you can use technology in the most possible sites, looking at the end that there are all the sites where you move. ✓ Ubiquity is doing what you need from where you are. ✓ All these devices or service points (IVR, ATM and Internet) require a fixed specific physical point; but a cell phone can make the same functions that you have in automated services and also you can do it in movement, everything depends on cell phone friendliness. ✓ Automated services can be accessed from any place; there is no need to move to another place to receive the service. ✓ You get what you want, from where you want, at the time you want and without any type of connection. ✓ I like to access a bank by telephone, because of the convenience of reaching a line that answers me and that tells me my balance. ✓ Convenience is accessibility. **Place** ✓ There are more ATM's, not only in banks, but closest to where you are. **Variety** ✓ The product availability online is higher

	✓ The Internet offers you a great variety of products and services, according to each customer need. ✓ Everything you need can be found in the same place. **Time** ✓ An automated service is available all the time. ✓ Doing operations by Internet gives you the opportunity to do them at the time you want. ✓ They have the great advantage to be accessible always, anywhere in the world. ✓ The ATM has the advantage of being available always.
Needs Satisfaction	✓ Once understood, if a need satisfied by a service is sufficiently strong, people do not leave the service. ✓ We need to offer you the added value of all the range of services and products that weren't there before, like a shelf of services sold to you. ✓ There are early adopters or heavy users that were waiting for the Internet, for high technology, for very complicated standards, world class standards.
Comfort	✓ Comfort (you can do it from home). ✓ Some banks already offer the chance to arrive to an electronic cashier in car, without having to get off. ✓ The great advantage in automated services is comfort, not cost.
Independence	✓ Automated services don't make me dependent, I do everything as I want. ✓ Internet gives you independence to make decisions; there is nobody that influences you. ✓ Service dependency already existed; you only replace one dependency by another; if you no longer depend on the bank's personal service now you depend on the automated cashier service. It is only a migration to a more isolated mean. ✓ Human beings tend to adapt to environmental challenges. ✓ There is a great movement that forces to move at technology's rhythm. A dependency is generated, it is a positive dependency, and you use this tool to make your life more comfortable.
Efficiency	✓ It does what I need.
Tangibility	✓ Buying through the Internet applies only to some products in which product tangibility is not that important (recommended books, electronic devices, CDs, etc.); this I not the case of other products that may require to be touched or smelled (foods, clothes, etc.) ✓ I must see it, smell it and feel it. ✓ When buying on the Internet, there is no possibility of knowing exactly if it is the desired product. "It was not what I wanted". ✓ Technology cannot cover 100% tangibility; nevertheless, it offers the possibility of seeing exactly what you want. ✓ Some dotcom bookstores offer in their web page the index, prologue, preface and even introduction of the books that it has, it facilitates the consumer's decision. This could apply to other products as well.
Immediate possession	✓ Requesting a product through the Internet implies a wait of approximately one to two weeks, this does not happen when it is bought personally.

Focus Groups Outcomes

Human Touch	**Complement** ✓ I can't imagine how a self service technology can work without a human complementing it. ✓ No matter how well it works, a SST should be supported by personal service. ✓ Internet doesn't offer personal attention; it is important for me that somebody takes care of what I need, when I can't resolve my requirements by myself. **Uncomfortable Communication** ✓ It turns uncomfortable and I don't like talking with a machine. ✓ I prefer a machine because a person is always angry or in a bad mood. ✓ Talking to a person, implies an incomplete and limited communication as a consequence of the fear to confront another person. ✓ Personal service is more agreeable. ✓ When I interact with a machine it is impossible to express my feelings; for me it is very important to express myself completely. ✓ I prefer SST's because I don't need to interact with a person. ✓ I prefer self service technologies because I don't depend of people's humor. ✓ I prefer to avoid human touch, funny faces and indifference. **Associated service cost** ✓ If an automated service costs less than a personal service, I prefer the device. **Agile and efficient response** ✓ It is very upsetting to be waiting for a recording machine to attend me; that's why I prefer an immediate personal response. ✓ While employees don't show any compromise with companies, they will never be interested in a customer; this doesn't happen with automatic services, with standardized responses. ✓ Compared with a device, a person gives better solutions to my complaints and comments. ✓ I prefer self service technologies because they fail less than people. ✓ Personal service is faster compared to self service technologies. ✓ Personal service is simpler than self service technologies. ✓ The problem with technology is that machines don't offer interaction when you feel something fails; machines can't respond and you can't complaint to them. ✓ A recurrent problem with the Internet buying process is that once the order was placed on a human hand, it is always him who makes a mistake. ✓ It is easier to buy on Internet, there are no personal or seller pressures if you don't complete the buying process. ✓ I prefer SST's; it is common that people who attend don't have an adequate knowledge about what are they selling and instead of helping you they only frustrate the sale. ✓ The problem with personal service is that, in general, employees are not trained to correctly attend their customer's needs. ✓ People show resistance to use new technology because they have good personal service precedents. ✓ An employee tries to find answers, a machine doesn't; a machine can't adapt to all that I need. **Socialization** ✓ For me, the socialization element is more important in a buying situation. ✓ The human communication magic had been lost; we can't sacrifice the joy of establishing a human relationship in order to obtain immediateness. ✓ I prefer personal service; going out shopping through stores means a trip. ✓ I don't like to use automatic services because they disconnect me from people's contact and they de-sensitize me. ✓ Automated services turn people into loners; people don't have to go out and interact with others.

	✓ Automatic services can serve like a distraction, recreation and an opportunity. ✓ In past times it was more exciting to receive a letter, now the frequency of messages makes them less interesting.
Rationalization	✓ The advantage of a computer when writing a message is that it lets you think and plan what you want to say. ✓ Online buys are specific, rational and not impulsive. ✓ In the Internet you can compare prices, and this let you adapt to your budget.
Change Resistance	**Age** ✓ For an older person it is more difficult to adapt to technology. **Ignorance** ✓ All new things, imply lack of knowledge and not knowing what we are doing generates fear. **Comfort** ✓ It's more comfortable to use what we already know. ✓ It's difficult to adapt to new technology, due to laziness or fear. **Motivation** ✓ There's no good reason that motivates me to use the Internet; moreover, there's no adequate or sufficient information for using it. ✓ I don't want to interact with a machine; I don't have any interest. ✓ It's hard to break the old paradigm about limitations of technology and how it doesn´t solve problems. ✓ People do not have any interest in handling new self service technologies **Personal insecurity** ✓ I resist using new technology due to what people can think of me; I am afraid to ask and look ridiculous.
Speed/Time	**Saving time** ✓ Compared with personal services, SST's save time to me. ✓ SST's are good because they save time, you can realize some transactions from your home without moving. **Losing time** ✓ The use of SST's can be delayed. ✓ It causes losing time while you are waiting on the phone, for this reason I prefer to go to the physical place to conduct my transactions. ✓ Internet speed is not so good yet; you wait too much while downloading a web site and it results in losing time. ✓ Personal attention implies losing time while you wait in lines, and for someone to understand you. This doesn't happen in the Internet. **Immediate service** ✓ ATM's offer cash availability immediately. ✓ You save time buying through the Internet. ✓ On Internet, delivery of what you bought takes more time.
Comfort	**Easy access** ✓ It's very comfortable to do what you need to do without changing your clothes to go out. ✓ It's more comfortable going to an ATM than waiting at bank. ✓ Buying through Internet or phone lets you avoid traffic, looking for parking and waiting on lines. **Functions duplicity** ✓ While using SST's I can do some other things while I wait to be attended. **Cash handling** ✓ It turns comfortable to conduct virtual operations without handling any money.
Technology dependence	**Rules definition** ✓ SST's dictate the rules of the game, you have to adapt to new things. **Alienation** ✓ Internet offers too much information, it overloads your brain. **Fear of failing** ✓ Nowadays, people depend so much on technology that they feel the world

	may fall on them if the technology fails. **Immediate connection** ✓ Today, we depend more on technology because it let us have immediate connection with more people.
Economy (cost)	**Saving money** ✓ Automatic services lets me save time, money and energy, because I don't need to go personally, and don't have to pay for parking or drive. ✓ The problem with automatic services is that commissions or memberships sometimes increase cost, and if they cost more, I prefer not to use them. ✓ If companies saved money substituting human resources with SST's, and these savings have an impact on my costs, obviously I prefer to use SST's. ✓ The cost of buying something through Internet is generally minor than buying it directly at a store, due to savings on infrastructure and personnel; for this reason, I definitely prefer automatic systems. ✓ If there are more offerings for the same product/service, the consumer saves money because there are better price options. **Cheaper long distance communication** ✓ Internet means cheaper long distance communication compared to traditional phone services. ✓ Buying from long distance by phone or Internet, you don't pay for trips, transportation or international calls.
Availability	**Time** ✓ Automated services are generally available, whereas people are often busy. ✓ People who don't have time buy online due to time availability. ✓ For me, the automated service advantage is that it is available anytime and any day, there are no time limits. **Product** ✓ The Internet offers a great variety of products and services, available to all kinds of people. This doesn't happen in normal stores. ✓ The Internet offers the newest products in the market. ✓ When buying, the most important thing is product availability and this is a real problem for brick and mortar stores. In the Internet, there are so many online stores that you will find the product for sure. **Place** ✓ The automated services advantage is that they are available anywhere, and you can't say the same for personal services. ✓ The big problem with automated services is that companies don't have the right infrastructure to satisfy user's expectative. ✓ Internet offers great variety of products and services not available in Mexico. ✓ The automated services advantage is that you can make any transaction at any moment, place and time required by your needs. ✓ For me, the Internet's advantage appears to be limited because companies only deliver within the USA.
Failure response	**Value added** ✓ We know technology can fail at any time, and that's why it is important to find human support at every moment to solve any doubt. ✓ SST's should offer alternative solutions when a failure exists; for example telling a customer the location of another available ATM. ✓ Failures don't deter my usage of SST's, the benefits that I have are greater than the errors. **Failure endorsement** ✓ When a SST's fails, there's nobody solving the problem. ✓ To increase SST's use, it is important that companies offer safety and endorsement when their technology fails. ✓ Company's endorsement must exist for delivery businesses that complement online buys. ✓ An error in SST's is worse than an error in personal service, because you don't have anybody to turn to in that situation. ✓ The problem with technology is that when something fails it's difficult to

	communicate with someone who can solve the problem. **Reply possibility** ✓ I prefer not to use automatic services because it does not offer me the possibility to reply if technology fails. **Failure responsibility** ✓ Generally, companies that offer SST's are inefficient taking responsibility for a failure. ✓ Companies don't endorse their technologies in case there is a failure; in general users pay for companies mistakes. ✓ If I make a mistake while using an automated service, there's no chance to blame someone else. Knowing that I'm guilty makes me feel quieter. ✓ If during a process a failure happens, the user is always responsible. **Response time** ✓ A company's response to an automated services failure can take too much time. ✓ I'm not worried about technology failures, what bothers me it's the huge number of people that I have to talk to until finally someone solves my problem; it's a long process. ✓ The process of clarifying SST's failure is a waste of time. **Favorable solutions** ✓ The limitation of SST's is that they don't offer any explanation to our doubts. ✓ When technology fails, it's important to offer adequate solutions to consumers needs, instead of waiting for company's policies. **Centralized process** ✓ It's very upsetting to face companies where employees don't offer any solution and send you to a central office for someone to solve your problem. ✓ When companies are centralized, they cut any possibility of face to face attention; this creates a geographic – or even cultural -barrier to attend any individual need. ✓ When technology fails, customer service centralization turns into a frustrating experience, you need to carry out a lot of requirements to solve your problem.
Safety	**Privacy/anonymity** ✓I prefer to use SST's because of the privacy that I get when acquiring "special" products or services. **Personal** ✓The fact that they put two ATM's in a single room does not offer any type of safety and I prefer to leave and not use them. ✓The fact that a person can stay behind me in an ATM gives me fear and distrust and I prefer not to use it ✓The ATM booths are normally unsafe ✓To avoid an assault, is safer to conduct operations by telephone than going out ✓It's easier to be assaulted in an ATM than in a bank ✓The only time when I may buy something through the Internet is because somebody already bought it and recommended the purchase to me. ✓I prefer to use SST's from my house, since they offer greater personal safety because I don't need to go out. ✓The problem with SST's is that there is no legal protection for users **Financial** ✓I prefer not to use this type of automated systems, because I don't feel safe giving out my account number. Somebody else may have access to it. ✓I don't want to give my account number because I don't know if they are going to charge you several times for the same product. ✓People prefer not to use automated services because safety of transactions is uncertain ✓Use of SST's is insecure because credit cards can be cloned easily **Transactional** ✓Use of SST's as Internet is insecure because you do not know in which moment the operation may fail and you might lose all your information ✓For me, it is very important that feedback exists on transactions, to be able to

	confirm them and to be sure that a successful operation was made. ✓To use them more frequently, ATM's would have to open and close doors as supposed to so nobody else can enter wile you are there. ✓You cannot be sure that what you see in a web page will be the same thing you will receive, the images could be misleading. ✓Due to failures generated by SST's, users don't dare to use them. ✓A form to encourage use of SST's is companies offering guarantees in case the user does not receive what he required. ✓It is important that companies offer some type of guarantee for the operation; this will ease users' fears and encourage them to continue using this type of services. **Risky process** ✓I don't feel safe buying through the Internet because delivery companies generally fail on their tasks and they don't respect what is mine. ✓ Transactions are not reliable because there is a high risk of third parties accessing my personal information. ✓I prefer not to use automated services because there is a risk of a transaction not completed appropriately and I can get stuck in the middle of the process. ✓The fact that there are delivery companies that don't handle consumers products adequately or assure delivery quality, makes me distrust the use of SST's ✓It is uncomfortable to use window services, but they are preferable due to the risk of using credit cards over the Internet.
Ignorance:	**Age** ✓Age has nothing to do with the use of automated services, it depends on people's knowledge of how they work. **Transactional** ✓Not knowing how automated services work generates in me a sense of frustration that increases my unwillingness to use them. ✓People don't feel familiar with this type of services. ✓Only people who know how technology works use it ✓There is a great ignorance of how automated services processes work, which makes them apparently more complicated and less useful. ✓People do not really know how to use the automated services in an optimal way, they are only limited to basic operations ✓The use of SST's depends on knowing how they operate. **Suitable information** ✓As time goes by, ATM's are more necessary, the problem is that people do not have instruction on how to use them ✓As long as there isn't enough suitable information regarding the advantages of using SST's, or about how to solve the problems, I prefer not to use them ✓If people knew SST's offers them a greater variety of products/services with better prices, the use of these automated systems would be higher. ✓For me, it is important that in the beginning, a person who knows the processes teaches me, so I can learn how to use it. ✓People prefer personal service because they don't know what the Internet can offer them. **Frequency of use** ✓It is necessary to know the form in which automated services work to be able to use them more frequently. ✓In general, the SST's are seldom used due to a lack of knowledge
Design	**Flexibility** ✓Getting information through SST's is more difficult than doing it personally. ✓The design of SST's is imperfect, with incomplete functions that limit customers in their search for answers ✓SST's must be flexible enough ✓What I need is automated services that are smart enough to recognize my problem and connect me with a person who can solve it. ✓To increase the use of automated services, it is important that they display a

	more complete mixture of services. ✓The problem with automated services is that they are not designed to solve exceptional situations; they only work with basic operations. ✓A greater way to increase use of SST's, is making them flexible enough to give answers to all type of needs. **Operation** ✓I prefer not to use SST's because they take me through a very long process before I can solve my problems. ✓For me it is important that SST's design doesn't make you bounce from one menu to another before you can find what you are looking for. ✓A reason why I don't use telephone automated systems is that I frequently get stuck hoping for somebody to take care of me ✓Automating repetitive and basic operations would result in a simple and easy process to handle. ✓The careless voice of an answering machine and the music that they use, are monotonous and tedious. ✓Menus offer too many options and users must wait a lot to arrive at the desired one. This makes the operation tiresome and tedious. ✓To me SST's are complex in design and operation, I prefer not to use them ✓SST's would have to be organized in such form that information loading, the language they use, and the simplicity of the operation adapts to all users **Accessibility** ✓Processes must be available for all socioeconomic levels ✓To have greater success, SST's need to be very easy to handle and must be accessible to all kinds of people **Alternatives of operation / adjustment** ✓It would be ideal to have diverse ATM's receiving different type of payments ✓People stop using ATM's because they often swallow cards; if people only had to slide it without having to loose contact with their cards, surely they would use them much more ✓For me it is important that companies follow my needs and that they are interested in me at all times ✓I understand that there must be a withdrawal limit for security reasons, but this limit should be determined by each person ✓Automation must go hand in hand with personalization and adjustment to users needs.
Independence	✓The advantage of SST's is that you don't need to wait until somebody takes care of you and you don't depend on anybody to do what you want to do. ✓I prefer to use SST's because I can be sure that things are done as I want, at the moment that I want and from the place that I want. ✓Automation of services represents a great advantage for people who know exactly what they want. ✓The use of SST's causes a sensation of control and independence to me.
Tangibility and immediate possession	✓I don't like to buy through SST's when it is a product that I need to see, to touch or taste. ✓The problem with SST's like the Internet is that they do not allow me to touch, nor physically observe the product. ✓It is not the same purchasing through Internet than going shopping to a store; because in the last one, products can be seen and touched. ✓The Internet gives me the sense that it is not so fast to buy, because I can not have the product at the moment of purchase ✓With in-store personal service, you receive the product immediately, hand to hand; this doesn't happen with SST's ✓To motivate people to use SST's the availability of what they bought should be immediate. ✓The experience of having contact with products is not available through the Internet.

Trustworthiness	✓It is important for me as a user, to have confidence in the bank; this happen through the availability they show, the safety they offer and the endorsement and operational guarantee they propose ✓Satisfaction through consumption of products is an accumulation of experiences; the more negative experiences we have, the less tolerant we become ✓The most important thing to increase the use and trust of SST's is brand reputation ✓The fact that institutions trust my credit performance makes me feel well about continue using their services and trusting them
Operational Infrastructure, Physical Environment	✓To motivate customers to use SST's companies should take care of the entire infrastructure that operates around them; for example, maintaining ATM's clean ✓The care and cleaning of ATM's are the most important factors to use them more frequently ✓The design of ATMs is so bad that sometimes banks do not realize that the sunshine is so hard that it is not possible to see the screen well; in addition, not considering design neither the location, makes people prefer not to use them ✓ Internal and external lighting of ATMs, as well as air conditioning, are not well adapted and don't motivate me to use them
Efficiency	✓The problem with SST's is that when they fail people feel hopeless and so desperate that they hit them and damage them ✓It is very irritating that an ATM does not have money if this is the only thing that it does, and what is even worse is that it didn't give me any option ✓If automated services worked at a 100% level they would be ideal ✓A reason why I don't use an ATM is because it's very uncomfortable to receive cash in very small bill denominations ✓Due to constant unavailability of cash in ATM's, I prefer not to use them ✓The most frustrating thing about a product selling machine is that it doesn't give the complete product ✓I don't understand why machines don't do what they are supposed to do, if it is the only reason why they are there ✓I don't care about the coldness of machines; what matters to me is the efficiency of the service they provide ✓A failure in an automated service generates in me such a feeling of frustration and rejection that I prefer no longer use it

A general summary for both techniques (Depth Interviews and Focus Groups) will be:

Depth Interviews General Results	Focus Group General Results
Personal Interaction: ➢ Bad Mood ➢ By efficiency ➢ By cost ➢ By convenience ➢ By security ➢ Socialization ➢ Specialized Consulting ➢ Basic operations Process Design ➢ Standardization ➢ Ease of use ➢ Familiarization ➢ Immediate access ➢ Alternatives of operation Costs ➢ Operation ➢ Administration ➢ Investment ➢ For the user ➢ Comparative Failure Response ➢ Human Support ➢ Compensation ➢ Assertiveness on errors ➢ Problem solutions ➢ Administration of errors ➢ Responsibility Change Resistance ➢ Age ➢ Custom ➢ Culture ➢ Better alternatives ➢ Change by necessity ➢ Fear ➢ Normal behavior ➢ Level of involvement Speed / Time Security ➢ Trustworthiness ➢ Control ➢ Security in the process ➢ Privacy Knowledge ➢ Familiarization ➢ Dominance	Human Touch ➢ Complement ➢ Uncomfortable Communication ➢ Associated service cost ➢ Agile and efficient response ➢ Socialization Rationalization Change Resistance ➢ Age ➢ Ignorance ➢ Comfort ➢ Motivation ➢ Personal insecurity Speed/Time ➢ Save time ➢ Losing time ➢ Immediate service Comfort ➢ Easy access ➢ Functions duplicity ➢ Cash handling Technology dependence ➢ Rules definition ➢ Alienation ➢ Fear of failing ➢ Immediate connection Economy (cost) ➢ Save money ➢ Cheaper long distance communication Availability ➢ Time ➢ Product ➢ Place Failure response ➢ Value added ➢ Failure endorsement ➢ Reply possibility ➢ Failure responsibility ➢ Response time ➢ Favorable solutions ➢ Centralized process Safety ➢ Privacy/anonymity ➢ Personal

➢ Added value Accessibility ➢ Ubiquity ➢ Place ➢ Variety ➢ Time Needs Satisfaction. Comfort Independence Efficiency Tangibility Immediate possession	➢ Financial ➢ Transactional ➢ Risky process Ignorance: ➢ Age ➢ Transactional ➢ Suitable information ➢ Frequency of use Design ➢ Flexibility ➢ Operation ➢ Accessibility ➢ Alternatives of operation / adjustment Independence Tangibility and immediate possession Trustworthiness Operational infrastructure /physical environment Efficiency

Word association outcomes

Variable:	Repeated Word (number of times)	
1. Fulfillment of needs	Quickness (11) Efficiency (5) Purchases (5) Comfort (4)	Internet (4) Automatic teller (3) Automated (2) Telephones (2)
2. Efficiency	Quickness (13) Design (2) Quality, in good condition (2) Operator (2)	Security (2) That it always works (2) Variety (2)
3. Performance	Express (3) Efficiency (2) Good operation (2)	Quality (2) Better (2) Performance (2)
4. Safety	Confidence (5) Privacy (4) Guarantee (2)	Reliable (2) Security (2) Honesty (2)
5. Convenience	Comfort (10)	Quickness (4)
6. Design	Quickness (4) Technology (3) Facility (3)	Easy to handle (2) Agile (2) Attractive (2)
7. Human service	Interaction (6) Quickness (4)	Treatment (2) Pleasant (2)
8. Failure responsibility	Solution (3) Efficient (3) Company (2) Attention (2) Information adapted as far as doubts (2)	System (2) Personnel (2) To have a fast answer (2) Positive answer (2)
9. Automated service	Quickness (10) Internet (7) Comfort (4) Clear (2)	Telephone (2) Banks (2) Automatic tellers (2)
10. Availability	Quickness (6) Time (4) Convenience (3) Comfort (3) 24 hours (2) Teller (2) Access (2)	Immediate (2) In any place (2) Time (2) Facility (2) Schedule (2) Place (2)
11. Novelty	Technology (6) Modernity (3)	Interest (2) It finds the latest in fashion (2)
12. Waiting Time	Quickness (6) Short (5) Desperation (3) Minimum time (2) Not comfortable (2) Minimum (2)	Patience (2) Lost of time (2) Little (2) Cost (2) Long rows (2)
13. Social Pressure	Fashion (3) Stress (2)	Calm (2) Status (2)
14. SSTs Satisfaction	Good (5) Tellers (2) Excellence (2)	Conformity (2) Security (2) It almost completes, 80% (2)

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