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# Prediction of Customers' Attitudes Toward Using Internet Banking in Iran

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## Abstract

Banking, one of the most information intensive sectors, is an ideal domain for the successful development of e-commerce. The present study focuses on e-commerce opportunities for improving customer services in the Iran banking sector. First part of this study reports on a survey of 31 top marketing and IT managers from three major Iranian governmental banks. The results indicate that the potential of e-commerce ranges from simple applications, such as giving information about services, to more sophisticated ones that involve customers in services design and customization. Suitable management actions are proposed to Iranian banks in order to fully benefit from the Internet. At present, one of the key challenges of the Internet as a service delivery channel is how banks manage service quality, which holds a significant importance to customer satisfaction. On the other hand, in this new era of cyberservice, marketing managers must reappraise their approach to marketing services in general and international services in particular. In the meantime, in the second part of this report, a large quantitative survey with customers has been conducted by testing and analysing the attributes which involve for customer attitudes toward using Internet banking. Based on a detailed literature review and frame of reference, a conceptual model of the adoption process for self-service technologies is developed and tested across Internet banking technology used in the banking industry. The Internet banking technology is relatively new to the Iran marketplace. Data were collected using a survey of 234 banking customers in a one-state area (Tehran) and analyzed using path analysis modeling. The results of the model tests on this technology provides evidence that different factors including: Ease of Use, Usefulness, Need for interaction, Risk and Cost with different degree of intensity influence attitudes toward using Internet banking and offers an explanation of the varying degrees of acceptance found among different type of customers. This research has demonstrated that multiple factors need to be considered when introducing new technology into the service encounter and that the salient factors may vary and their stages in the adoption process.

***Keywords: e-Commerce, Banking, Iranian banks, International services, Internet banking, Attitudes***

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# Chapter 1

# Introduction and Problem Discussion

## *1. Introduction*

*The first chapter in this thesis provides an introduction and a background of the selected area. First some information about service sector, marketing of services, Internet banking and Web sites of banks are provided and followed by the problem discussion. Subsequently, it narrows down to the research problem and specific research questions. In the end of this chapter, the outline of this thesis presents.*

## 1.1 Background

Over the past 15 years technology has increasingly been employed in the delivery of services. The adoption of technology into service industries is becoming a strong trend as service providers are now being urged by industry bodies to invest in technology (Australian Coalition of Services Industries Annual Review, 1997) as a way of securing their future in the electronic age. The role of technology in service organizations as discussed by Kelley (1998) has been predominantly employed to reduce costs and eliminate uncertainties. In the service sector, technology has been used to standardize services by reducing the employee/customer interface (Quinn, 1996). The majority of consumers now more than ever prefer to opt for a technology-based service delivery over that of the employee (The European Magazine for Applications of Computer Telephony, 1997). This emerging trend raises some important issues about the impact that technology will have on service quality and customer satisfaction levels. To what extent can the employee/customer interface be removed from the front line and still maintain or improve the levels of customer satisfaction? Dabholkar (1996) suggests that little is known about consumer preference for self-service options, particularly those that are technological based. Furthermore Cowels and Crosby (1990) have researched tolerance levels of consumers' preferences *for* using technology instead of the human touch.

The growth of technology in the delivery of services has had a dramatic effect on the nature of the core offering. Gilbert (1997) uses an analogy to make it simpler to understand the "revolution" that has taken place in technological development in the past two decades. The nature of service organizations has changed over the past two decades. This change has been influenced by the development of storage and speed of data transfer, particularly in electronic funds transfer known as EFTPOS. Whole new industries have emerged (Bradley, 1993), including news retrieval services and video conferencing.

The increasingly competitive environment in the financial services market has resulted in pressure to develop and utilize alternative delivery channels. The most recent delivery channel to be introduced is Internet banking. The term Internet banking is used to describe the provision of information or services by a bank to its

customers, via a page on the World Wide Web (WWW). A more developed service is one that provides the customer with the opportunity to gain access to their accounts and execute transactions or to buy products online.

The Internet is the driving engine of the new economy and it has given birth to Internet banking (Daniel, 1999). Internet banking is predicted to transform this traditional industry. The Internet offers banks the opportunity to better meet customer needs through enhanced interaction, data mining and customization (Mols, 1999). By use of the Internet it is possible for banks to offer a number of banking services, such as create an account, fund transfer, bill payment and money management services 24 hours a day. For example, customers can get up-to-date balance information on deposit and loan accounts, transfer funds between accounts, and communicate with the bank by e-mail.

The rapid development of information and communication technologies during the 1990s has enabled companies to introduce more and more high-tech services. We can think of Internet banking and other completely new services that add value to existing products by substituting or complementing personal interactions with service staff by means of technological solutions (Jun & Cai 2001). Taking in to account these developments, it is evident that service researchers need to pay more attention to consumer evaluations of technology-based services (Parasuraman and Grewal, 2000).

Internet-based services are believed to be superior to those delivered through the regular channels because of their convenience, interactivity, relatively low cost and high degree of Customization/personalization among other advantages. There is very little understanding, however, of the factors that affect customer satisfaction with Internet-based services. (Khalif a & Liu 2002).

## 1.2 Role of e-Commerce in Banking Industry

The Internet population has been exploding because of the significant power of World Wide Web and global e-commerce. The World Wide Web users have been multiplying rapidly and have widely spread into all walks of life. It has opened up tremendous business opportunities for its users (Ho & Wu 1999). The most common

and popularized use of e-commerce is to replace or enhance traditional market channels by opening web-based storefronts. In this type of ecommerce, also commonly referred to as "Business to consumer e-commerce", organizations offer their product and services on the web and generate revenue from the actual sale of those products and services to their customers (Molla & Licker 2001). Awad (2000) identified four ecommerce activities available to Internet users: (1) shopping, (2) banking, (3) investing, and (4) on line electronic payment for Internet services.

In the last few years we have witnessed a substantial growth of internet-based services, both from pure Internet businesses and from traditional companies that are developing online services (Khalifa and Liu 2003). According to an Angusreid group study (2004) of Internet users in 34 countries nearly 120 million of the estimated 300 million worldwide Internet users have already made a purchase or transaction online. Internet banking is one of the prominent examples in Applications of information technology in the service industry, and specifically in e-commerce. The incredible growth of the Internet is changing the way corporations conduct business with consumers (Slu & Mou 2003). The banking industry also provides transactional as well as other financial services to their customers over the Internet. In recent years, more and more number of traditional brick-and-mortar banks has been moving to the Internet, in order to sustain their competitiveness in the market place (Jun & Cai (2001). Gerlach (2000) reported that more than 500 conventional banks in US currently offer customers online access to their accounts. Major banks in US, such as Bank of America and Wells-Fargo, have offered a variety of services, such as CDs, Credit cards, Funds transfer and Loans.

## 1.3 Online Banking and Internet Banking Difference

Akhtar, R. and Dong, Y. in their study (2004) explained about the difference between the online banking and Internet banking.

Online banking was first introduced in the early 1980s (Kalakota, 1997). Online banking provided the customer with an application software program that operated on the customer's PC (Liao, 1999). The customer then dialed into the bank via a modem, downloads, and operated the programs that are resident on his or her PC. IT was primarily employed to automate the back-office of banks in the 1960s

(Liao, 1999). This situation had been changed by a move of IT into the front office and thus the beginning of management information systems. Technology was deployed to extend the back-office (core process and support process) to the front office and beyond the branch (Llwellyn, 1995). This extension made the banking industry enter a new era, where an explosion of IT applications has been seen throughout banking services, and the division between front and back-office has become less relevant as integrated systems increasingly blur the line (Liao & Shao, 1999).

Internet Banking is defined as the conducting of banking transactions through the Internet (Liao, 1999). The difference between Internet banking and online banking is that no proprietary software has to be installed for accessing the banking service over the Internet. Banking services can be acquired through the public network of the Internet. Hence, a customer can have accessed to his/her bank account through the Internet (Liao, 1999). Banking activities are easily digitized and automated and, thus, from an operational perspective, lend themselves to the Internet (Elliot & Loebbecke, 2000; Daniel, 1998; Cervantes, 1997; Morgan Stanley & Dean Witter, 2000).

## 1.4 Customer Service on the Internet

Akhtar, R. and Dong, Y. (2004) in their study have been mentioned that technological development in online banking make it much easier and cheaper for customers to compare and contrast products and to establish multiple banking connections (Buhl & Will, 1998). Fojt (1996) contends that better communications technology will alter dynamics of purchase decisions. Several authors (e.g. Birch & Young, 1997; Mathe & Dagi, 1996; Gandy & Brierley, 1997) have carried out research on customer requirements. Time, privacy, control and economy are among the important aspects that customers are concerned with. People are becoming busier and hence are seeking to carry out transactions at a time of their convenience. Therefore, people prefer Internet banking instead of traditional banking.

Jayawardhena & Foley (2000) argue that Internet banking allows banks to delegate tasks to the customer. Many of the traditional tasks performed by bank counter clerks can now be transferred to the customer. For instance, if a customer carries out a transfer of funds between their Internet bank accounts, or pays a bill,

they are carrying out a task that would have been undertaken by a bank employee on the customer's instructions in a terrestrial bank. This saves time and money and the likelihood of committing errors that are the fault of the bank are minimized. Customers benefit through peace of mind from knowing that transaction details are exactly what they wanted.

Collecting and monitoring customer feedback allows bankers to assess and upgrade their service and product capabilities as needed to maintain and improve competitiveness. Financial services are an important product, which all economically active individuals are obliged to use (Davies, 1996). Financial "know-how" is a critical factor in the purchase of financial products (Harrison, 1997), where customers do not have and do not wish to develop this "know-how", they seek advice.

Since the Internet is an open network, Internet banking customers appear to be much more concerned with the security of their banking transactions and the privacy of their personal information. Suganthi (2001) view risk in the context of security concerns and risk in the context of trust in Internet banking. Traditional risks have thus been reshaped. In the physical environment, frauds traditionally were paper-based or people - based but now it happens in scientific way. Liao (1999) argues that recent developments in Internet payment systems have caused an average customer to be less concerned about the security of electronic exchanges or privacy issues**.**

This Internet banking, compared to traditional banking, heavily involves non-human interactions between customers and online bank information systems (Jun & Cai 2001). Promoting quick-response, just-in-time deliveries of services in electronic marketplaces improve information sharing between the bank and its customers. Instead of banks controlling the relationship with the customer, today customers have more control of their banking needs via Interaction with website (Awad 2000).

For Internet users, banking online is both convenient and time-saving compared with traditional retail banking (Slu & Mou 2003). While Internet banks have focused their attention on improving their banking services quality, many of them still seem to be lagging behind their customer's ever increasing demands and expectations (Jun & Cai 2001). So, satisfaction becomes an important issue while corporations introduce service online. A business depends on their customer. In fact

customers are the very livelihood of business organizations. Customer satisfaction has always been assumed as a necessary condition for the success of organizations (Molla and Licker 2001).

## 1.5 Internationalization of Service Firms

The internationalization of service businesses has received an increasing amount of managerial attention in recent years. Several major trends have been identified that signify the growing interest in the area of international services, including (1) the exponential growth of world trade in services, which accounts for approximately 25% of the value of total global trade (Kotabe, Murray, and Javalgi 1998); (2) the increasing role services play in international trade negotiations (Patterson and Cicic 1995); (3) the importance of international services as a determinant of a nation's economic development and societal welfare (Clark, Rajaratnam, and Smith 1996); and (4) governmental deregulation worldwide, resulting in policies favorable to service businesses that create local jobs (Kotabe and Helsen 1998). Therefore, understanding the problems and issues involved in the marketing of services overseas is vital for both business practitioners and public policymakers interested in service firms' international market development and success.

## 1.6 Problem Discussion

Recently, many banks have used the Internet as a new market channel to offer their customers a variety of services 24 hours a day.

It is important that the banks provide customers with high quality services to survive in the highly competitive Internet banking industry (Mefford, 1993). For this, bankers first need to understand the attributes that customers use to judge service quality and monitor and enhance the service performance.

This study considers retail Internet Banking. The aim of this study is to define the current situation of Internet Banking services in Iran by three large retail banks in Iran. Additional insight into the banks' adoption of this new channel is gained by exploring two areas important in the analysis of new delivery channel offerings,

which is: managerial approach to innovation and their problems encounter to implement and develop Internet Banking. A review of the academic literatures relevant to this study is presented. From these the research questions is derived which is addressed by interview through detailed questionnaire. The findings are presented and discussed and managerial implications and further research topics are highlighted. Where technological change is rapid, customer acceptance is not yet proven and integration must be achieved with an increasing array of existing delivery channels, managers must make decisions in very uncertain conditions and such research will be particularly welcomed in helping to reduce this uncertainty.

## 1.7 Demarcations

Since the aspects of the chosen research are many, the researcher has tried to narrow down the focus. This study focuses on the bank managers' perspective in Internet banking along with customers' perspective. The aim of the research is to gain a deeper understanding of the problem which Iranian banks encounter in developing of Internet banking and customers' attitudes prediction toward this new service channel. However, since the studied banks are "non-Internet" banks, i.e. do not offer full transactional Internet banking even they have Web site, the impact of the Web as an international service marketing channel would be describe only through the literature review.

## 1.8 Disposition on the Thesis

This thesis consists of six chapters. In present chapter, an introduction to the research area is given. The next chapter presents the literature review followed by research problem, research questions and conceptual framework of reference in the third chapter. In the fourth chapter, methodologies which used for this study will be discussed. In chapter five, the empirical finding will be analyzed against frame of reference and based on the collected data from the interviews and questionnaires. Finally, in chapter seven findings and conclusions regarding of this study is presented. This chapter also discusses implications for management and future research.

# Chapter 2

# Literature Review

## *2. Literature Review*

*This chapter brings up relevant literature to research questions. First present vital literatures about International marketing, electronic channels along with key concepts of influence of Internet in banking industry, so that it becomes easier to understand the research area. In continue, the literature about Self-service adoption including Internet banking presents in respect of customer's attitude perspective. Finally, the literature about developing an Internet banking Web site has explained about main factors to build such a service delivery channel.*

## 2.1 International Service Marketing

The internationalization of service businesses has received an increasing amount of managerial attention in recent years. Several major trends have been identified that signify the growing interest in the area of international services, including (1) the exponential growth of world trade in services, which accounts for approximately 25% of the value of total global trade (Kotabe, Murray, and Javalgi 1998); (2) the increasing role services play in international trade negotiations (Patterson and Cicic 1995); (3) the importance of international services as a determinant of a nation's economic development and societal welfare (Clark, Rajaratnam, and Smith 1996); and (4) governmental deregulation worldwide, resulting in policies favorable to service businesses that create local jobs (Kotabe and Helsen 1998). Therefore, understanding the problems and issues involved in the marketing of services overseas is vital for both business practitioners and public policymakers interested in service firms' international market development and success. To date, less research attention has been devoted to the marketing of services internationally than to that of goods. Marketing services beyond the domestic market is, however, particularly difficult, complex, and onerous because of the particular problems service differences create. The 1990s have experienced the emergence of a phenomenon that we believe will dramatically change this received wisdom forever: the World Wide Web. Most problems inherent in the marketing of many types of services overseas do not matter on the Web. Cyberservice not only overcomes limitations of international services marketing, but also creates hitherto undreamed of foreign market opportunities for service firms. The Web is a hypermedia platform that rides on the Internet, the network that links computer-based resources around the globe. Browser software enables highlighted words or icons, called "hyperlinks," to display a multitude of media, including text, video, graphics, and sound, on a local computer screen, irrespective of the source material's location. The Web enables both organizations and individuals to have a 24-hour-a-day presence, which is relatively easy and initially inexpensive to establish. The medium affords marketers the ability to make available full-color virtual catalogs, provide on-screen order forms, offer online customer support, announce and even distribute certain services easily, and elicit customer feedback. Any firm that uses the Web has an international presence, by definition (Berthon, Pitt, and Watson 1996; Quelch and Klein 1996).

### 2.1.1 Key issues in international service marketing

What makes purchases of services different from those of goods? The answer lies in services' four distinct characteristics--intangibility, simultaneity, heterogeneity, and perishability--which provide the rationale for a separate treatment of services marketing (Lovelock 1981; Shostack 1977). An understanding of these characteristics is important if we wish to not only appreciate the problems facing services firms, but exploit unique international market opportunities that these attributes provide. Whereas people can see, touch, and hold a physical product, they cannot do so with a service. Services are intangible or impalpable. Intangibility creates problems for marketers, in that services cannot be stored, protected through patents, or readily displayed or communicated (Dahringer 1991). For customers, intangibility means that they can not see what it is they are buying and actually will have nothing much to show for it once they have used the service. Thus, customer experience and credence qualities are particularly important in buying services (Zeithaml 1981). In the case of physical products, production and consumption do not occur at the same time or place. This is not the case with services. For example, if a person wants legal advice, he or she must visit a lawyer, and while the lawyer is producing the service (legal advice or defense in court), the person is consuming it. The lawyer must be there, and so must the customer, for the service to be produced and consumed. The production of the service and the consumption thereof are simultaneous. Because services are intangible and produced and consumed simultaneously, production lines cannot be established to deliver an identical service each time, nor can the quality of a service be controlled. By the time the customer has received the poor service, it is already too late. Thus, services have the characteristic of heterogeneity (they vary in output), which creates various marketing challenges for the services marketer. Because goods are produced before they are consumed, they generally can be stored until needed. Services cannot, for they are produced and consumed simultaneously. This gives services the characteristic of perishability because they can not be inventoried (Bessom and Jackson 1975). For example, hotels and hospitals have unused rooms and beds that expire, car rental companies have unrented vehicles that perish, consulting firms have consultants' time that dies the moment it is not used, and empty seats on an aircraft for a particular flight are lost forever. International services, as distinct from the provision of services in the context of the domestic market, possess

each of the preceding characteristics. However, these characteristics are exacerbated by a set of additional elements unique to the international environment, that is, the technological, economic, physical, sociocultural, and political-legal distance between domestic and overseas markets (cf. Clark, Rajaratnam, and Smith 1996; Dahringer 1991; Patterson and Cicic 1995). For example, physical distance between international parties compounds problems of simultaneity (coordination difficulties between service providers and overseas customers) and perishability (difficulties in balancing the supply of services and foreign demand).

Sociocultural distance compounds problems of heterogeneity; significant differences in international exchange partners' expectations and interpretations add variance to service processes. Moreover, political-legal distance may have a negative effect on all characteristic service attributes. Complex legal foreign market requirements, for example, can add friction to service performance, thereby increasing heterogeneity because many elements on which the service depends are beyond the provider's control. Technological and economic distance between domestic and international markets again can affect each service characteristic. For example, technological distance can have a profound impact on problems of simultaneity. Communication technology can transcend distance, enabling virtual simultaneity during the production and consumption of a service, but only when compatible technology and protocols are used. Furthermore, economic distance, interacting with other distance types, has a distinct impact on intangibility in certain key international service industries. This is particularly true in the transnational banking sector, in which economic distance renders service intangibility problematic because of incompatibilities in national fiscal infrastructures, protocols, instruments, and policies.

## 2.2 Electronic Distribution

Like the technology that it addresses, academic literature on use of electronic distribution is at an early stage but growing rapidly. Both the academic and the popular literature forecast the rapid growth and significant impact of electronic distribution on all types of markets (e.g. Internet Computing Staff. 1998; Kalakota and Whinston, 1997; O'Connor and Galvin, 1997).

A starting point for understanding the electronic distribution of goods and

services is the work of Rayport and Sviokla (1994, 1995), in which they highlight the differences between the physical marketplace and the virtual "market space", which they describe as an information-defined arena. Some of the important differences they identify include:

pricing should be based on value and not cost since most services have little marginal cost; consumers are unlikely to return to the marketplace after experiencing the benefits of the market space; and that suppliers can easily offer additional products and services to customers in the market space.

Devlin (1995) classifies both products and distribution channels as either atoms (physical) or bits (digital or electronic) and encourages firms to move from distributing atoms via physical channels to moving atoms via digital networks.

Another key significance of electronic distribution was recognized by Malone (1989). They recognized that by facilitating customers' comparisons of purchase alternatives, electronic networks will encourage a move trom hierarchical, single-supplier relationships to market-based, multiple supplier scenarios. This shifting of power from the supplier to the buyer, in this case via the value of customer information, was also recognized by Hagel and Armstrong (1997). However significant electronic distribution is forecast to become, it is recognized by Patterns (1997) that this is just one distribution channel in a plurality of co-existing channels and that consumer markets are heterogeneous and complex. They predict that consumers will undertake different information search and purchase strategies based on the type of goods or services sought and that they will move between the co-existing channels to undertake these activities.

A number of recent academic studies are helpful in considering the issue of the provision of electronic transactional services by banks. The impact of major trends, such as technology and deregulation, has caused the retail banking sector to focus considerable attention on their distribution channel strategies (Devlin, 1995; Lockett and Littler. 1997). Trethowan and Silicone (1997) found that the percentage of customers that visit bank branches is expected to fall while the number of alternative delivery channels will increase. They forecast the growth in direct delivery of services and list the advantages of such services as; convenience, sales, orientation

and lower costs.

Electronic banking services were first launched in the UK in the early 1980s with the "Homelink" service provided by the Nottingham Building Society and the Bank of Scotland (Tait and Davis, 1989). However. in general, they failed to gain widespread acceptance and most were discontinued (Vinson, 1978). Since the rapid growth of other types of electronic services, most based on the Internet, there has been a renewed interest in electronic banking services and many banks have recently launched or are developing such services (Booz Allen and Hamilton, 1996; Daniel, 1998).

The advantages of electronic banking services, such as increased convenience and functionality, are discussed in detail by Johnson (1995). Baldock (1997) uses the term "virtualization", by which he means "the removal of the constraints of time, place and form, made possible by the convergence of computing, telecommunications and visual media", to describe the benefits offered to both the bank and the customer by electronic banking. McMahon (1996) considers three direct delivery means:

• Telephone;

• PC; and

• the WWW.

McMahon concludes that these should be employed in a complementary and integrated way with existing distribution channels if financial service providers are going to survive into the next decade. Finally, Dannenberg and Kellner (1998) propose the next step in electronic banking provision when they discuss the possibility of offering individual customer advice through Internet picture telephony or video conferencing.

New offering development There is a significant body of academic literature that describes the development of both new products and new services, termed here new offering development, which has been well summarized in the following reviews (Johne and Snelson, 1988; MontoyaWeiss and Cantantone, 1994; Johne and Storey, 1996). The activity of new offering development has been divided into three key stages:

• opportunity analysis;
• project development;
• implementation and evaluation (Johne and Storey, 1996).

The focus of this study is on opportunity analysis and the other stages will not be explored further. In analyzing a new development opportunity, an organization must look both externally and internally. Two important criteria for an organization in the analysis of new product or service opportunities are a market orientation and a complementary internal aptitude or competence for innovation (Ennew and Watkins, 1992; Thwaites, 1992).

The term market orientation describes how a company listens to its customers and develops products and services that meet their needs. It is often described as "market pull", as opposed to the concept of "technology or supplier-push", where organizations try to create a need for a product they have developed in isolation from the market. Market-led innovation requires knowledge of both current customer needs and behavior and the offerings of competitors (Cooper *et aI.,* 1994; Edgett, 1994). Another important feature is a view or vision of the future development of that market, so that the product or service will be well placed to serve developing needs (de Brentani, 1991; 1993).

While there are always market opportunities, firms may have difficulty in capitalizing on these due to internal barriers and limitations (Thwaites, 1992; Drew, 1995a). These may be simply a lack of human resources but are often more complex, for example, the culture of the organization plays an important role (Johne and Storey, 1996). Senior management and internal systems should communicate the importance of, and support, innovation. Processes and systems that allow new offering development to flourish should be developed and nurtured, for example, new product or process ideas should be encouraged from staff throughout the organization, and even from customers, and not seen as the preserve of the marketing or new products division. Fear of failure should be removed, as should excessive bureaucracy, since hindering communication stifles innovation. Cross functional teams with minimal hierarchies have also been recognized as being another important organizational factor in innovation (see for example, Hardy and Dougherty, 1997).

In summary, the literature on new offering development suggests that the two important criteria for the analysis of opportunities are:

1. an understanding of the relevant market; and
2. a corresponding internal new offering development capability.

In the case of electronic banking services, which are highly innovative, it might be expected that the organization's culture of innovation, their prediction of customer acceptance or uptake and their vision of the future of the retail banking market would be particularly important.

## 2.3 Self-Service Technology Adoption

Rapid advances in the capabilities of information technology coupled with the decreasing costs of implementation and use present the business community with the potential to alter the fundamental methods by which business is conducted. Digital Economy *2000* report issued by the US Department of Commerce on the emerging digital economy shows that investments in information technology more than doubled between 1995 and 1999 to $510 billion in the US alone (Bucklcy , *2001).* Although this data clearly demonstrates that technology has become an integral part of doing business for many enterprises, it appears that the benefits sought by the champions *of* technology are not always fully realized. "This is particularly true with technology that is intended for use by the customer.

Technology has been implemented successfully in the delivery *of* many services as an aid to the front-line employee who interacts with the customer (Fisher, 1998). However, encouraging customers to use new technologies in service encounters is generally more challenging than employee use of new technologies. One of the more complicated uses for technology has been as a replacement for firm's employees in the delivery *of* services. This use *of* technology has an extensive appeal to the service provider in that it can standardize service delivery, reduce labor costs and expand the options for delivery. However, it can be a significant drain on resources if not widely accepted by consumers. Thus, it is imperative that we understand how to best design, manage and promote new technologies in order to have the best chance of consumer acceptance. The focus of this research is on technologies that customers independently use without any interaction with, *or*

assistance from, employees. These technologies have been termed self-service technologies or SSTs (Meuter, *2000).* Examples of SSTs include ATM's, pay at the pump gas station terminals, automated hotel check out, online transactions such as investment trading, or fully automated phone systems. The purpose of this study is to assess some of the critical variables that contribute to consumer acceptance of SSTs.

Understanding the antecedents of technology acceptance is one promising approach to increasing the chance of success with technology based service introductions. Consequently, a process model, organizing variables contributing to customer reaction to the introduction of technology to the service encounter is proposed and hypotheses testing the relationships between and among these variables are developed. Tile contributions of this study are both theoretical and practical. First, a new model of formation of consumer attitudes toward adoption of technology in service delivery will be tested, extending existing theories of attitude-behavior relationships.

Second, the identification of salient beliefs in the formation of consumers' attitudes toward a new technology-based method of service delivery will contribute to marketing strategy. These salient beliefs may then be targeted in future research for various manipulations that may speed the adoption process. Third, the overall model is applied to the adoption and use of three different technologies used to provide banking services. Comparison of the results across the different SSTs reveals that salient antecedents change during the adoption process. This difference in influence is important to the development of appropriate marketing strategies aimed at achieving widespread usage of the specific technology-based interface.

The introduction of SSTs to the delivery of a service removes the provider's personnel from the transaction and places additional responsibilities on the customer to transact the service. Although changes in service delivery are supposedly made to benefit the customer, they often require increased work or involvement on the part of the customer. These and other factors may preclude the customer from trying or using the technology. Service providers must be aware that when changes in a service are instituted, a potentially significant portion of the customer base that the change is alleged to benefit, will opt not to participate in the new service format (Langeard , 1981).

Unlike the service provider, the service customer may have no real compelling reasons to change to a technology delivered service. In fact, the very existence of the technology based service delivery option may be a cause for anxiety and stress for some customers who are not comfortable with the technologies and their use (Mick and Fournier, 1998). Some consumers may see the introduction of a SST to the service encounter as something of a threat. They may also be unsure of how problems in dealing with the technology will be resolved (Meuter and Bitner, 1998). Furthermore, some consumers view the service encounter as a social experience and prefer to deal with people (Zeithaml and Gilly, 1987), while others do not see a significant benefit to the technology and will continue to do things as they have always done them. Certain customers will consider the costs of learning the new technology, and switching to using it, to be too great to be worthwhile (Gatignon and Robertson, 1991).

On the other hand, there are also several perceived benefits that may attract customers to a technology-based option of service delivery, Some customers may find the technology-based options attractive for various reasons, such as, they are easy to use or more convenient than the alternatives (lV1euter , 2000). Other factors include time and cost savings, greater control over the service delivery, reduced waiting rime, a higher perceived level of customization (Meuter and Bitner, 1998), convenience of location (Kauffinan and Lally, 1994) and fun or enjoyment from using the technology (Dabholkar, 1994, 1996).

One goal of many service providers implementing a technology.-based customer interface is to attract a large enough group of customers to justify the costs of implementation. In order to accomplish this, the service provider must have a full understanding of the important influences that may affect a customer's decision to use the available technology. The technologies used must benefit the customer and the strategies used to attract customers to using these technologies must address the proper concerns and perceived benefits in the customer's minds. A variety of researchers have explored these areas and this work is intended to extend and expand this research area. Hebert and Benbasat (1994) combined concepts from the theory of reasoned action (Fishbein and Ajzen, 1975) and diffusion of innovation (Rogers, 1995) to develop a model for the adoption of information technology and found

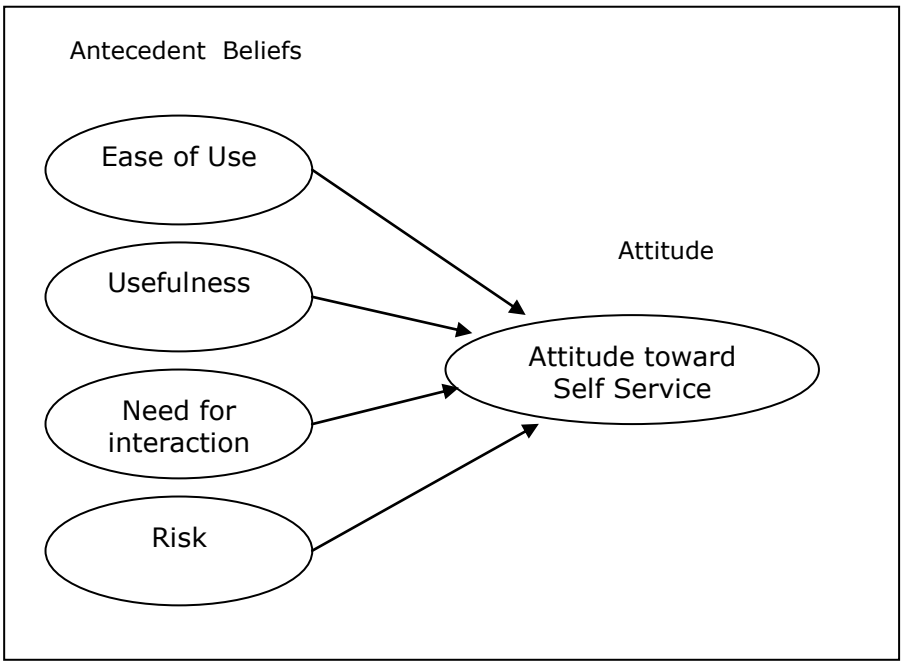
support for a relationship between attitude and behavioral intention. 'The technology acceptance model (TAM) (Adams, 1992; Davis, 1989) extends the attitude toward behavior behavioral intention relationship, established in the theory of reasoned action, to the adoption of computers in the workplace. These studies developed the idea that ease of use and perceived usefulness of the machinery were critical constructs influencing an individual's attitude toward using the machine. What was not considered in the TAM studies were the situational variables aside from the machinery, such as perceived risk or need for interaction, which could have also been found salient. This work was important as it revealed that attitudes toward a technology are important in influencing behavioral intentions.

Although research on implementation and adoption of SSTs is relatively new, some important work has been done on this topic. For example, a critical incident study described the key factors that lead to satisfaction or dissatisfaction related to customer use of SSTs and found that usefulness, ease of use, availability, and convenience play a significant role in customer satisfaction with SSTs (Meuter, 2000). In other research, Parasuraman (2000) explored contributors and inhibitors of "technology readiness," Dabholkar (1994, 1996) identified control, performance, ease of use, need for human interaction, reliability, and speed as critical variables in the usage of SSTs, and Meuter and Bitner (1998) found support, accuracy, performance, and recovery from error as important variables in the usage of technologies under certain circumstances. The complexity of these factors precluded the inclusion of all of them in this study, but their relevance to the topic of technology adoption is undeniable.

In order to gain a deeper understanding of the process by which consumers decide whether to use a service provider's SST, the model shown in Figure 2.3 was developed. We propose four antecedent beliefs as predictors of attitude toward an SST. Ease of use and usefulness has been explored in the TAM literature; however perceived risk and need for interaction have not been extensively explored. These two new antecedent beliefs are expected to extend the research based on the technology acceptance model. In addition, attitude toward an SST is proposed to impact the overall intention to use the SST. These relationships are shown in Figure 1. The model will be tested across three different technologies to increase the robustness of

the testing process and to determine if the relationships are consistent across SSTs.

**Figure 1: SST attitude to use model**




Source: Curran, J. M. & Meuter, M. L., 2005

An attitude has been defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly and Chaiken, 1993). Although the concept of technology in general is not very stable, attitudes toward specific technologies can be adequately measured and people do form attitudes toward specific technologies (Daamen , 1990). Other research has also demonstrated that consumers can have distinguishable attitudes toward SSTs (Curran, 2003). Because technologies, which may be used by customers, may vary from service to service, and at times within a single provider's operation, it is important to examine how people feel about different technologies.

## 2.4 Evaluation factors to establish Internet banking Web site

This session has been presented a discussion on Web site's evaluation factors, aiming the development of a framework for evaluate the quality of an Internet Banking services.

Website quality has been evaluated from many different approaches. A number of models derived from the Technology Acceptance Model – TAM (Davis,

1989) are used to create a Web evaluation framework (Heidjen and Horton, 2001; Lederer and Maupin, 2000; Moon and Kim, 2001). These models highlight website usability and utility. The WebQual (Barnes and Vidgen, 2000; Loiacono, 2000) and the e-ServQual (Zeithalm, 2002) models add additional analysis dimensions, such as reliability, security and privacy (among others).

In addition to these customer-focused models, the quality of the Web sites can be evaluated from the software development side. Pressman (1997) advances the FURPS – functionality, usability, reliability, performance and supportability – quality factors for software development, and Mendoza (2002) create an ISO/IEC 9126-based portal environments evaluation model.

Certain studies on Internet Banking Web site implementation have concentrated on set of on-line services offered (Soares and Hoppen, 1998; Diniz, 1999; Angulo and Albertin, 2000; Nogueira, 2000; Steil, 2001; Cunha and Reinhard, 2001; Mariano, 2002). Others studies address browsing- and design-related aspects (Ramos and Costa, 1999; Nogueira, 2000; Steil, 2001; Cunha and Reinhard, 2001; Sartori, 2002; Oliveira, 2002; Ferreira and Leite, 2002). A few also investigate transaction security and reliability aspects (Soares and Hoppen, 1998; Sartori, 2002). A significant share of these works also tries to establish criteria and attributes that may be used to build, evaluate and compare Web sites (Cano et Becker, 1999; Freitas, 2001). Considering all these models and studies, three concepts appear common:

1. ***Functionality***: defines the set of services offered, focusing on business opportunity and strategy;

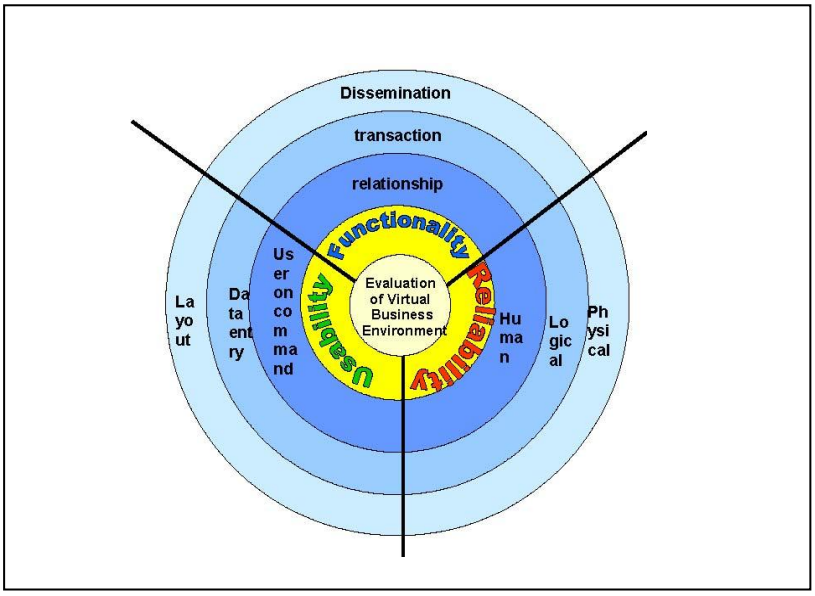
2. ***Data Security and Reliability***: defines the level of transaction security, focusing on the elements that may contribute to user trust;

3. ***Usability***: defines user interaction with the website, focusing on the ease of browsing and performance of tasks leading to completion of the transaction.

This study has been proposed a model based on these three dimensions and capable of making a contribution to the development of methodologies to build an Internet Banking Web site from the perspective of website users (customers).

In the proposed model, each of these three dimensions is further subdivided into three other levels (Figure 2), according to the level of difficulty involved in implementing the relevant resources at the corresponding dimensions. The outermost layer contains factors more easily implemented on an Internet Banking Web site, the intermediate layer contains medium-difficulty factors, and the innermost layer contains factors most difficult to implement. Below, the explanations of each of these factors in greater depth and consider each dimension's characteristics has been presented.

**Figure 2: Proposed model for building an Internet Banking Web site**




Source: Diniz, 2005

## 2.4.1 The functionality dimension

Functionality, meaning the online services offered, is the first dimension to consider when studying Web site. Prior to anything else, when a company decides to offer its services on the Web, it must consider which services may best result benefits for the company and its customers and partners. This dimension varies according to the industry and company strategy, as well as the profile of the customers for whom a particular set of services is intended. Some of the studies which have mentioned above categorize Web services based on direction of the information flow between users and the corporation over the Web. Others identify certain technical and organizational requirements for on-line services implementation. One major element

of this categorization is its focus on the services offered, which divide into the three categories below:

- *Dissemination:* as a vehicle to publish information
- *Transaction:* as a channel to perform transactions
- *Relationship:* as a tool to improve relationship with users

Within the categorization above, a second dimension of the services is also taken into account to determine the degree of adherence of the services in each category to interaction models commonly used in the Web. This second dimension subdivides into: (i) Basic services (least changed as compared to channels other than the Web); (ii) Intermediate services (adopting some Web elements but not entirely innovative); and (iii) Advanced services (specifically developed for the Web environment). Table 7 summarizes the division of the categories above according to the different interaction levels for each service class.

### 2.4.2 Data Security and Reliability Dimension

More than a purely technical matter, many experts regard security as a matter of customer perception (Albertin, 1999). As in conventional transaction environments, the digital world too security is never an absolute (Camp, 2000). Transaction errors may occur, be it out of bad faith, user naiveté or lack of expertise, misconduct, fraud, theft, aggression or trespass by third parties. In addition to straightforward human acts, security problems can arise from systems failures or even from the organizational process itself.

Schneier (2000) states that Internet is probably the most complex system ever developed, since it is a public network with millions of computers connected to a highly complex physical network. Each of these interconnected computers has hundreds of software running, and some of these interact with other programs, either in the same computer or in another one connected to the network. As a result of its complexity, Internet security relates with the prevention and detection of, and reaction to, trespass, fraud and loss to prevent financial and moral damages. The best information security management practices code was developed by BS ISO/IEC 17799 (2000), and is characterized by the preservation of:

Integrity: data cannot be corrupted during handling or transmission.
Confidentiality: data cannot be handled or read by unauthorized people.
Availability: communication between computers must take place whenever requested.

For the purposes of the Internet, other information security checks have been added (Camp, 2000):

Privacy: concerning disclosure of or access to information through electronic means.
Non-repudiation: ensuring that a completed transaction cannot be denied.
Authenticity: ensuring that the signatory of a document is really who they purport to be.

Considering the use of computer science itself (Meirelles 1994) and the increasingly disseminated use of technology (Schneier 2000), the security process may also be divided into: physical, logical and human layers.

The physical layer is characterized by the location of the hardware. It is the physical space where users interact with the Internet, where the means of communication (cable and waves) are, and where the data is physically stored.

The logical layer is characterized by software-based protection. This layer is defined by encryption and decryption solutions, presence or lack of digital certification of computers and users, application development language, databases, communication middleware with both legacy systems and new ones.

The human layer is characterized by human behavior in the use or maintenance of information systems. According to Schneier (2000), this is the weakest link in the security chain, and chronically responsible for most security system failures. The most important aspect of this layer is people's perception of risk: how they deal with events that rarely occur; whether they are skilled users or not; the hazard of malicious or unwitting trespassers; and the social engineering by means of which hackers can legally obtain information (Schneier, 2000). Table 8 summarizes the six security items as they manifest in the three layers described earlier. Items that can be identified by simple browsing are highlighted in bold typeface. This table will be the basis to understanding the items that have to be considered for the purposes of evaluating the reliability of a business transaction environment on the Internet.

### 2.4.3 The Usability Dimension

Usability has become even more important in the Internet age (Nielsen 2000) since it takes place before customers spend any money on potential purchases: on the Web, users experience usability first and pay later.

Non-functional usability requirements include interface quality, user-friendliness and human factors often overlooked by software engineers (Ferreira and Leite, 2002). The usability evaluation model used here was developed based on three categories (Pressman, 1997):

Layout: concerns display of information on the Web page
Data entry: concerns fields for user information collection
User on command: concerns how much control users are given over the page

For each of these categories, a group of items was defined to enable ascertaining the Website's usability level. As for 'Layout', three items were selected as being helpful towards Internet banking sites evaluations: consistency, visibility and clarity. Three items were also selected for the 'Data entry' category: forgiveness, feedback and error treatment. And a further three items were selected for the 'User on command' category: search tools and links, constant text size, and site map. Table 9 summarizes these three categories and their items.

# Chapter 3

# Frame of Reference

## 3. Frame of Reference

*In this chapter, the research problem, the research questions and the conceptual framework for this study have been formulated, based on the problem discussion and literature review in the preceding chapter. This conceptual framework will help to answer the study research questions and also guide the data collection of this study.*

## 3.1 Research Problem

Main purpose of this study is to gain a better understanding of the current level of the Internet banking development in 3 banks in Iran, the contribution of these banks in international marketplace and finally prediction of the customers' attitudes toward this new channel.

## 3.2 Research Questions

Based on above stated research problem, the following research questions have been developed:

The ***first set*** of research questions have been designed to evaluate the position of Iranian banks in the Web-based banking services marketplace.

**Q1.** What is the current level of Internet Banking development in Iranian banks?

**Q2.** Are the banks in the desired level to develop the Internet Banking and its integration with their business in order to presence in international market?

**Q3.** What are the main problems that banks encounter in applying Internet banking?

The ***second set*** of research questions have been designed to predict the main attributes influence on customers' attitudes toward using the Internet banking channel in future. In the study these influenced attributes hypothesized as below:

**H1.** Perceived Ease of use of Internet technology, will be positively related attitude toward the Internet banking technology.

**H2.** Perceived Usefulness of Internet technology will be positively related attitude toward the Internet banking technology.

**H3.** The need for interaction with banks' employees will be negatively related attitude toward the Internet banking technology.

**H4.** Perceived Risk of Internet technology will be negatively related attitude toward the Internet banking technology.

**H5.** Perceived Cost of technology will be negatively related attitude toward the Internet banking technology.

## 3.3 Theoretical Development

Based on the literature review outlined in the previous section, the development of an innovative distribution system, such as electronic banking, seems likely to depend on both organizational and market factors. At present, however for the studied banks, the knowledge of the extent to Internet banking services are being developed is limited.

In particular, this study considers an analytical model framework in order to build an Internet Banking Web site based on: the set of services offered, investigation of security requirements and Web site usability.

Finally, the study draws on the "Self-service technology adoption issues" framework proposed by (Curran, J. M. & Meuter, M. L., 2005), and integrates it with customer attitudes.

Based on the literature, the model includes four attributes predictors of attitude toward an SST. These four predictors are ease of use, usefulness, need for interaction and risk. Each of these four factors is described below. Since this study has done for Iranian banks and the attribute cost is important factor for banking transactions, the researcher has been added this factor to the model.

***Ease of use*** has been defined as the degree to which a user would find the use of a particular technology to be free from effort on their part. This construct is central to the technology acceptance model and has been used in many studies since.

***Usefulness*** is the subjective probability that using the technology would improve the way a user could complete a given task. Usefulness is the second central construct for the technology acceptance model and has also received a great deal of attention in adoption literature.

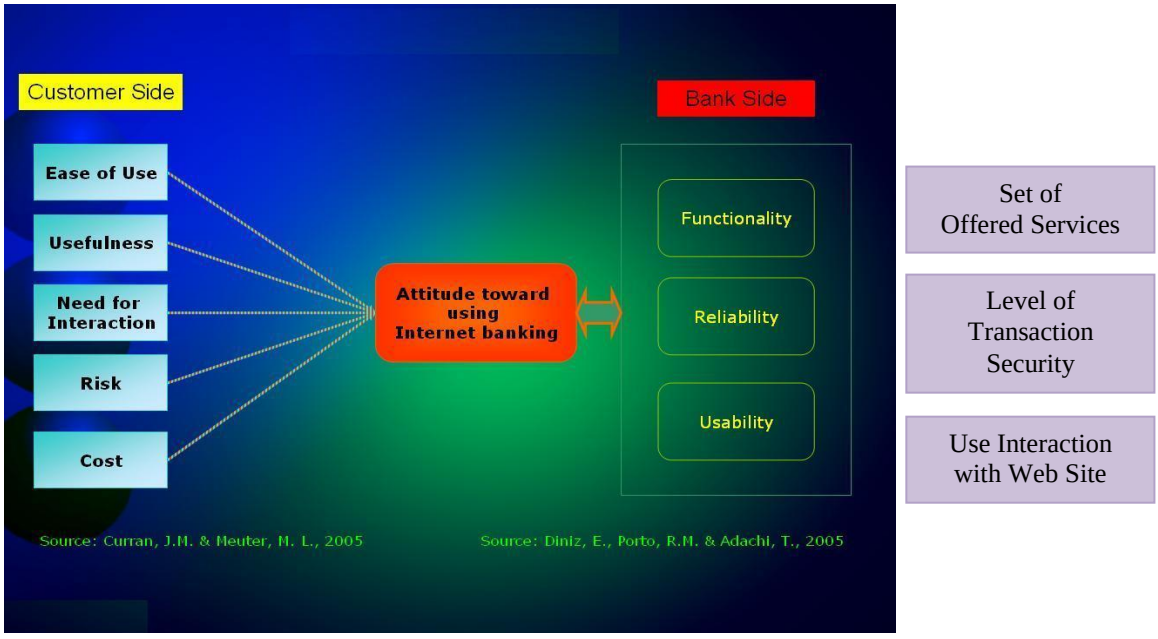
A ***Need for Interaction*** is defined as a desire to retain personal contact with others during a service encounter. Historically, service encounters have involved interpersonal interactions between customers and service providers. These interactions allow for the development of interpersonal relationships between a customer and service provider. However, using SSTs, by definition, eliminates this

interpersonal interaction. For many consumers, these relationships and interpersonal interactions are a valued aspect of the service consumption experience. Therefore, the use of SSTs can be less appealing for some consumers. However, recent research has shown that some consumers choose to use technology in order to avoid the provider's employees or other customers.

In this model discussed ***Risk*** in terms of the probability of certain outcomes given a behavior, and the danger and severity of negative consequences from engaging in those behaviors. It points that consumers will attempt to minimize any expected loss as part of their purchase decisions and will identify some potential losses as financial, social, psychological, and time. It found that, in a service context, consumers will seek out sufficient information to reduce negative consequences of purchase and rely primarily on their own experiences if those experiences are relevant. Although not presented directly as risk, these concepts have been discussed in the technology framework under the terms of reliability, accuracy and recovery.

Since Dabholkar (1996), alters the diffusion of innovation constructs to include risk and uncertainty along with learning cost, the ***Cost*** attribute also has been added to form a model in order to predict customer acceptance vision.

**Figure 3: Main attributes involve in developing and using Internet banking**



# Chapter 4

# Research Methodology

## 4. Research Methodology

*In this chapter, a brief discussion regarding methodology will be presented. It is including research philosophy, research purpose, research approach and research strategy which is used in this research and it is also explained about designing of questionnaires. The sample selection, data collection method and validity and reliability of collected data and data analysis method are also described.*

## 4.1 Research Philosophy

The research philosophy depends on the way that researcher think about the development of knowledge. This seems rather profound and not something to which researcher normally give much thought. Yet the way the researcher think about the development of knowledge affects the way researcher goes doing research. Three views about the research process dominate the literature: *Positivism*, *Interpretivism* and *Realism*. All three have an important part to play in business and management research.

## 4.2 Research Purpose

The purpose of academic research can be exploratory, descriptive, or explanatory. Exploratory studies as a valuable means of finding out "what is happening; to seek new insights; to ask questions and to assess phenomena in a new light descriptive studies with an object "to portray an accurate profile of persons, events or situations" and may be an extension of, or a forerunner to, a piece of exploratory research; and explanatory studies to establish causal relationship between variables. The emphasis here is on studying a situation or a problem in order to explain the relationship between variables. The classification most often used is the threefold one of exploratory, descriptive and explanatory, but in some way researcher can have more than one purpose and the purpose may change over time (Bell, 1999).

Exploratory studies aim for basic knowledge within the research purpose. The purpose with this type of study is, according to Bell (1999), to decide and demonstrate the character of a problem by collecting information through exploration. Furthermore, exploratory studies are conducted in order to create a basic understanding of conditions, events, courses of events and actions. An explorative investigation is appropriate when a research problem is unstructured and difficult to delimit (Robson, 2002).

Explanatory research is useful when studies involve relations between causes and symptoms (Robson, 2002). The researcher investigate however, a certain stimuli or factor affects one another. It is this identification of factors, which together cause a certain phenomena. According to Yin (1994) an explanatory research approach could

also be used when the study aim to explain certain phenomena from different perspectives or situations with given set of events.

## 4.3 Research Approach

The research project will involve the use of theory. That theory may or may not be made explicit in the design of the research, although it will usually be made explicit in the presentation of the findings and conclusions. The extent to which researcher is clear about the theory at the beginning of the research raises an important question concerning the design of the research project. This is whether the research should use the *deductive* approach, in which researcher develop a theory and hypothesis (or hypotheses) and design a research strategy to test the hypothesis, or the *inductive* approach, in which researcher would collect data and develop theory as a result of data analysis. Insofar as it is useful to attach these approaches to the different research philosophies, the deductive approach owes more to positivism and the inductive approach to interpretive. Major differences between deductive and inductive approaches to research are:

***Deduction*** emphasizes scientific principles, moving from theory to data, the need to explain causal relationships between variables, the collection of quantitative data, the application of controls to ensure validity of data, the operationalization of concepts to ensure clarity of definition, researcher independence of what is being researched and the necessity to select samples of sufficient size in order to generalize conclusions.

***Induction*** emphasizes a close understanding of the research context, the collection of qualitative data, a more flexible structure to permit changes of research emphasis as the research progresses, a realization that the researcher is part of the research process and less concern with the need to generalize.

When conducting a research there are different ways to address the matter. There are two main research approaches to choose from when conducting research in social science: *qualitative* or *quantitative* method (Yin, 1993; Holme & Solvang, 1991). There is one significant difference between these two approaches. In the quantitative approach, results are based on numbers and statistics that are presented in

figures. 'Whereas in the qualitative approach where focus lies on describing an event with the use of words. Which approach to choose depends on the problem definition together with what kind of information that is needed? The two approaches can in cases where it is suitable also be combined. (Holme & Solvang, 1991)

*Quantitative* research approach transform the information to numbers and amounts that later gets analyzed statistically. Quantitative studies tend to be more structured and formalized (Holme and Solvang, 1997).The quantitative approach is also characterized by being study few variables on a large number of entities. To find answers to its research problem this is normally done in a broad sense by using surveys with already set answering alternatives. Furthermore, this approach is considered especially useful when conducj:1g a wide investigation that contains many units (Holme and Solvang, 1991).

*Qualitative* research approach aims at reaching a better understanding of the phenomenon being studied, they also tend to be relative flexible. Using this approach the researcher tries to separate the specific or odd and strives to create a complete understanding of the situation. Characteristics of qualitative studies are that they are based largely on the researcher's own description, emotions and reactions (Yin, 1994). The qualitative approach also includes a great closeness to the respondents or to the source that the data is being collected from. The qualitative approach is characterized by gather abundant information and to investigate several variables from a few numbers of entities. To take use of the possibility to gather high quality data the most common way to do this is with the use of case studies and interviews where no set answering alternatives are being offered (Holme and Solvang, 1991).

The qualitative approach was found to be most suitable for the purpose of this thesis, as the purpose is to gain a deeper understanding of the role of website in the Internet banking. Hence, the aim is not to make any generalizations, but instead establish a closer contact with the studied objects, which intend to provide us, the researchers with a deeper understanding of the participants' attitudes, and perceptions. Finally, as the intention with this thesis is to describe and explore, and find as complete and detailed information as possible, the qualitative approach is the most suitable method. Now we have described that the research is focused on a qualitative research approach, and then the research strategy will be presented in the next section.

## 4.4 Research Strategy

The research strategy is a general plan of how researcher will go about answering the research question(s) which has set. It will contain clear objectives, derived from research question(s), specify the sources from which researcher intend to collect data, and consider the constraints that researcher will inevitably has (for example access to data, time, location and money, ethical issues, etc.). Crucially, it should reflect the fact that researcher has thought carefully about why is employing the particular strategy. At this point researcher should make a clear distinction between strategy and *tactics.* The former is concerned with the overall approach researcher adopts; the latter is about the finer detail of data collection and analysis methods. Decisions about tactics will involve researcher being clear about the different data collection methods.

### 4.4.1. The Different Research Strategies

There are number of strategies for a researcher to make when conducting an empirical data collection. The main research strategies are *Experiment*, *Survey*, *Case study*, *History* and *Archival Analysis*. Research projects may be *Cross-sectional* or *Longitudinal*. Some of these clearly belong to the deductive tradition and others to inductive approach. Depending on the research question(s), researcher can choose appropriate research strategy among the choices which have shown in Table 1.

**Table 1: Relevant Situation for Different Research Strategies**

| Strategy | Form of research question | Requires control over behavioral events | Focuses on contemporary events |
|---|---|---|---|
| **Experiment** | How, Why | Yes | Yes |
| **Survey** | Who, What, Where, How, How many, How much | No | Yes |
| **Case study** | How, Why | No | Yes |
| **History** | How, Why | No | No |
| **Archival Analysis** | Who, What, Where, How, How many, How much | No | Yes/ No |

Source: Yin, 1994

According to Yin (1994) the researcher can choose a research strategy among an experiment, a survey, history, an analysis of archival records and case study,

depending on the character of research questions. Yin (1994) suggested that case studies can be used for exploratory (what), descriptive (how) or explanatory (why) purposes.

### 4.4.2 Case Study

Robson (2002) defines *case study* as "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence". This strategy will be of particular interest to researcher if researcher wishes to gain a rich understanding of the context of the research and the processes being enacted (Morris and Wood, 1991). The case study strategy also has considerable ability to generate answers to the question "why?" as well as the "what?" and "how?" questions (Yin, 1994). The data collection methods employed may be various. They may include questionnaires, interviews, observation and documentary analysis. Researcher may be suspicious of conducting case study research because of the unscientific feel it has. Case study can be a very worthwhile way of exploring existing theory. In addition, a simple, well-constructed case study can enable researcher to challenge an existing theory and also provide a source of new hypotheses.

## 4.5 Data Collection Method

Data collection for case studies and survey can rely on many sources of evidence. Six important ones are discussed by Yin (1994) as shown by Table 2.

**Table 2: Six Sources of Evidence**

| Six Sources of Evidence |
|---|
| Documentation |
| Archival records |
| Interviews |
| Direct observations |
| Participant |
| Observations |
| Physical artifacts |

Source: Yin, 1994

### 4.5.1 Collecting Primary Data Using Interviews

Data collection through interviews is most commonly used with a descriptive purpose. Yin (1994) stated that one of the most significant sources of case study information is the interview. He further clarified that positive aspects with the interview are that it is targeted because it concentrates directly on the case study topic. It is also insightful because it gives perceived causal conclusions.

Interviews can be defined as the collection of information from respondents. An interview is a purposeful discussion between two or more people (Kahn and Cannell, 1957). The use of interviews can help researcher to gather valid and reliable data that are relevant to research question(s) and objectives. This fact is significant since nature of any interview should be consistent with research question(s), the purpose of research and research strategy that researcher has adopted.

### 4.5.2 Types of Interviews and their link to the research and research strategy

Interview maybe highly formalized and structured, using standardized questions for each respondent, or it may be informal and unstructured conversations. One typology that is commonly used is related to the level of formality and structure (Robson, 2002), whereby interview may be categorized as one of:

- Structured interview;
- Semi-structured interview;
- Unstructured interview.

Another typology (Healey, 1991; Healey and Rawlinson, 1994) differentiates between:

- Standardized interview (questionnaire-based interview);
- Non-standardized interview (open-question interview).

### 4.5.3 Collecting Primary Data Using Questionnaires

The greatest use of questionnaires is made by the survey strategy. However, both experiment and case study research strategies can make use of these techniques. Some authors (for example Kervin, 1999) reserve questionnaire exclusively for surveys where the person answering the questions actually records their own answers.

Others use it as a more general term to include all techniques of data collection in which each person is asked to respond to the same set of questions in the predetermined order (for example deVaus, 2002) or to include interviews that are administrated either face to face or by telephone (Bell, 1999).

The design of the questionnaire will affect the response rate and the reliability and validity of the data which collect. The researcher needs to ensure that it will be collect the precise data that requires answering research question and achieving the objectives. This is of paramount importance, as researcher is unlikely to be able to go back to people and collect additional data using another questionnaire.

### 4.5.4 Type of Questionnaire

- Self-administrated
  - On-line questionnaire;
  - Postal questionnaire;
  - Delivery and collection questionnaire;
- Interviewer administrated
  - Telephone questionnaire;
  - Structured interview.

Responses to *interviewer administrated questionnaires* are recorded by the interviewer on the basis of each respondent's answers. A considerable number of surveys and case studies, particularly in the area of market research, contact respondents and administer questionnaires using the interview where interviewers physically meet respondents and ask questions face to face. These make a schedule of questions which interviewers can not deviate.

Dillman (2000) distinguishes between three types of data variable that can be collected through questionnaires: *Opinion*; *Behavior* and *Attribute*. Initially the researcher needs to consider the type of questions including *open-ended questions* which allow respondents to give answers in their own way (Fink, 1995) or closed-ended or *forced-choice questions* which provide a number of alternative answers from which the respondent is introduced to choose. Youngman (1986) identifies six types of forced-choice question: *list, category, ranking, scale or rating, quantity* and *grid*.

### 4.5.5 Rating or Scale Questions

These kinds of questions are often used to collect opinion data. The most common approach is the *Likert-style rating scale*, usually on a four, five, six or seven point rating scale. Scaling questions design to collect data on respondents' opinions of the subject of research and use to measure a wide variety of concepts such as customer loyalty and service quality.

### 4.5.6 Collecting Secondary Data Using Documentation

Documentary secondary data are often used in research projects that also use primary data collection methods. It is includes written documents such as notices, brochures, minutes of meeting, reports to shareholders and administrative and public records (Bell, 1999). Documentary secondary data also include non-written documents such as tape/video recording (Robson, 2002). These data can be analyzed both quantitatively and qualitatively. I addition, they can be used to help to triangulate findings based on other data such as primary data collected through interviews or questionnaires.

## 4.6 Research Methodology in This Study

This study adopted an ***Inductive approach*** and for this reason has used ***Structured Standardized Interview*** typology, i.e. it has used questionnaire based on predetermined and standardized or identical set of questions. This kind of interview uses in case study research to gather data, which will be then, be the subject of quantitative analysis. The data for this study was collected in two stages.

For the first part of the study, a questionnaire was developed and sent to 38 marketing and information technology managers from 3 major banks in Iran. This study addressed both IT and marketing management, since eCommerce transcends both marketing and IT, and collaboration between the IT and the marketing people is essential. The managers were previously informed about the scope and the objectives of the study and they agreed to participate. There were 7 usable responses returned from managers for a response rate of almost 82 percent.

The questionnaire was divided into three sections. The first section dealt with company profile and IT and eCommerce management practices.

The second section dealt with the current level of development of customer-oriented Internet Banking Web sites and its perceived future contribution to improving customer services. The questions were chosen so as to represent a wide range of customer support activities.

The third section was concerned with social and technological problems, which Iranian banks encounter in developing their customer-oriented Internet Banking portfolio.

Within the scope of the research, documentary information has been considered and searched by researcher. However, little direct information was found to relate to research problems. Only such data which are available mainly in form of the bank information material (Annual Reports, Brochures, Online information presentation, etc.) has been given the researcher an overall view of the present situation of the studied banks.

### 4.6.1 Pilot Testing and Assessing Validity of the Questionnaire

Prior to using the questionnaire to collect data it should be pilot tested. The purpose of the pilot test was to refine the questionnaire so that respondents do not have problems in answering the questions and they were recording answers correctly and when if needed visual aids should have been provided. In addition, it enabled to obtain some assessment of the questions' validity and the likely reliability of the data to be collected. Preliminary analysis using the pilot test data to ensure that the data collected was enabling the investigative questions to be answered. Furthermore, the pilot test on the structure of the questionnaire, helped establish *content validity* (Mitchell, 1996).

In this research, in the pilot study open-question interviews were conducted to explore any possible important factors related to different attitudes. Also preliminary questionnaire-based interviews were conducted as pre-test for improving the questionnaire and in order to enhance the research quality in term of validity. After

the questionnaire was well developed to include important factors that affect customers' attitudes and easy to understand, large quantities of questionnaire-based interviews were conducted during later empirical study.

The number of pilot tests this study conducted was 8 which dependent on the size of research project, research questions, the time had been available, the number of final interviewees and the design of the questionnaire.

### 4.6.2 Testing the Reliability of the Questionnaire

The reliability of the questionnaire concerned with the consistency of responses to the questions. Based on the three common approaches: *test re-test*, *internal consistency* and *alternative form* (Mitchell 1996) in order to assessing reliability, this study used internal consistency which involves correlating the responses to each question in the questionnaire with those to other questions in the questionnaire. It is clear that the analysis for this method was undertaken after data collection.

## 4.7 Sample Selection

According to Miles & Huberman (1994), looking at contrasting cases can help understanding a single-case finding, by specifying "how" and "where" carries on as it does. The authors continues by stating that if a finding holds in one setting and given its profile, also holds in a comparable setting the finding is more robust. Miles & Huberman (1994) further say that although contrasting cases are used, a sampling frame is needed, guided by the research questions and the conceptual framework.

There are two group of respondents included in the sample of this study. The first case study is conducted through personal interviews of 31 IT and marketing managers in studied banks with at least 15 years experience in banking industry. The interviewees were informed about the purpose of the study before start the interview and how the interview would be conducted.

The second survey is conducted through 215 customers of these banks. This group of respondents had some knowledge about Internet and few knew about Internet banking in order to understand and answer the questionnaire, but it was not

necessity to be the users of the Internet. However, some of the interviewees were familiar with many of the concepts regarding to Internet and were using Internet banking in other countries quite often.

As Yin (1994) has been concluded, multiple-cases sampling adds to the validity, precision and stability of the finding. In order to address the research questions of this study, one case study and one survey will be conducted. By conducting case studies the results can be compared and the study seen as more compelling. Using a multiple-case study it can also make the findings more robust.

## 4.8 Questionnaire Design

The main measure instrument used in this research is the questionnaire. How the questionnaire developed is clearly described in this section. The questionnaire was originally based on research questions and emerged framework of reference (see Table 3). The logical structure of the questionnaire followed the order of the four research questions. Besides, researcher adjusted the subsequence based on the kind of questions. There are two kinds of questions included in the questionnaire. One kind of question is phrased in descriptive statements. As recommended by Parasuraman (1991), a 5-point Likert-scale (1=strongly disagree, 5=strongly agree) was used. Another is multiple choices question and consumer can choose one or more that are applicable for them. Questions belong to demographic and multiple choices questions and questions 6-20 and 21-23 belong to 5-point scale questions.

The researcher put adoption behavior related questions at the end for respondents to gain a better understand of overall attitude. After demographic questions, the questionnaires comes up with perceived attributes related questions, which are all 5-point scale questions and customer don't need to switch the head to understand the requirement to answer this type of questions. For the ending part of questions, they are customer vision related again, but all of them belong to fact-based questions. The researcher considered respondents might lose patience finally, yet they were most likely to give the right answers for those easy and fact-based questions.

**Table 3: Research questions, relevant literature and interview questions**

| Research Questions | Relevant Literature | Interview Questions |
|---|---|---|
| **Q1.** What is the current level of Internet Banking development in Iranian banks? | Electronic distribution<br>International Service Marketing | Appendix A<br>Q1, Q2 |
| **Q2.** Are the banks in the desired level to develop the Internet Banking and its integration with their business in order to presence in international market? | International Service Marketing<br>Evaluation factors to establish an Internet banking Web site | Appendix A<br>Q3, Q4, Q5 |
| **Q3.** What are the problems that banks encounter in applying Internet banking? | Evaluation factors to establish an Internet banking Web site | Appendix A<br>Q6 |
| **Customer Demographic** | Self-service Technology Adoption | Appendix B<br>Q1 - Q5 |
| **H1.** Perceived Ease of use<br>**H2.** Perceived Usefulness<br>**H3.** The need for interaction<br>**H4.** Perceived Risk<br>**H5.** Perceived Cost | Self-service Technology Adoption | Appendix B<br>Q6 - Q20 |
| **Customer Total Attitude** | Self-service Technology Adoption | Appendix B<br>Q21 - Q23 |

Once came up with the first draft of questionnaire, the researcher did a pre-test for questionnaire in the pilot study in order to have confidence that all the questions made sense and easy to understand. We refined some of the questions the way to ask and dropped one innovation attributes as "compatibility", which was claimed to make no sense for respondents. The pre-test also helped the researcher to know the time needed for the interview. The well-developed questionnaire we considered as a

prerequisite for achieved research quality.

## 4.9 Data Presentation and Data Analysis

When data has been collected, it must be present and analyzed in the meaningful way. There are also a number of options for analyzing the data. Since the questionnaire based interviews is used for both parts of the research, the collected data will be used for descriptive and explanatory purposes (Quantitative Study).

One important issue about the collected data through the questionnaire based interviews which has been conducted by the researcher is that the unfinished questionnaires or questionnaires with the same answer without careful consideration have been rejected.

The finding for second part of in this research is based on the quantitative methods of analysis on the large sample of respondents, in order to describe and explain about the managerial approaches and customer attitudes.

Statistical tools of Microsoft Excel and LISREL are used fro data inputs and analysis. Then the statistics results have been presents and analyzed. Finally a comparison has been conducted with the previous literature for drawing conclusions.

## 4.10 Validity and Reliability

Validity and reliability are two useful measures when defining the quality of a research. Validity is defined as the instrument's ability to measure exactly what concepts it is supposed to measure (Robson, 2002). According to Yin (1994) there are three forms of validity: construct validity, internal validity, and external validity. For construct validity it is important to establish correct operational measures for the concepts that are being studied and that objective judgment is used to collect the data. Internal validity means to establish a casual relationship, which is showing that specific conditions lead to other conditions. The internal validity should though, according to Yin (1994), not be used in a descriptive or exploratory study and therefore it will not be used in this study. External validity refers to establishing the field to which the findings can be generalized. The findings of a case study should be

generalized analytically and not statistically.

The researcher should take care to ensure that the results are valid and reliable. This is aptly summarized by Rogers (1961, cited by Raimond 1993): "scientific methodology needs to be seen for what it truly is, a way of preventing me from deceiving myself in regard to my creatively formed subjective hunches which have developed out of the relationship between me and my material". The reducing possibility of getting the answer wrong means that attention has to be paid to two particular emphases on research design: ***Reliability*** and ***Validity***.

### 4.10.1 Reliability

Reliability can be assessed by posing the following three questions (Easterby-Smith, 2002):

**1.** Will the measures yield the same results on other occasions?
**2.** Will similar observations be reached by other observers?
**3.** Is there transparency in how sense was made from the raw data?

### 4.10.2 Validity

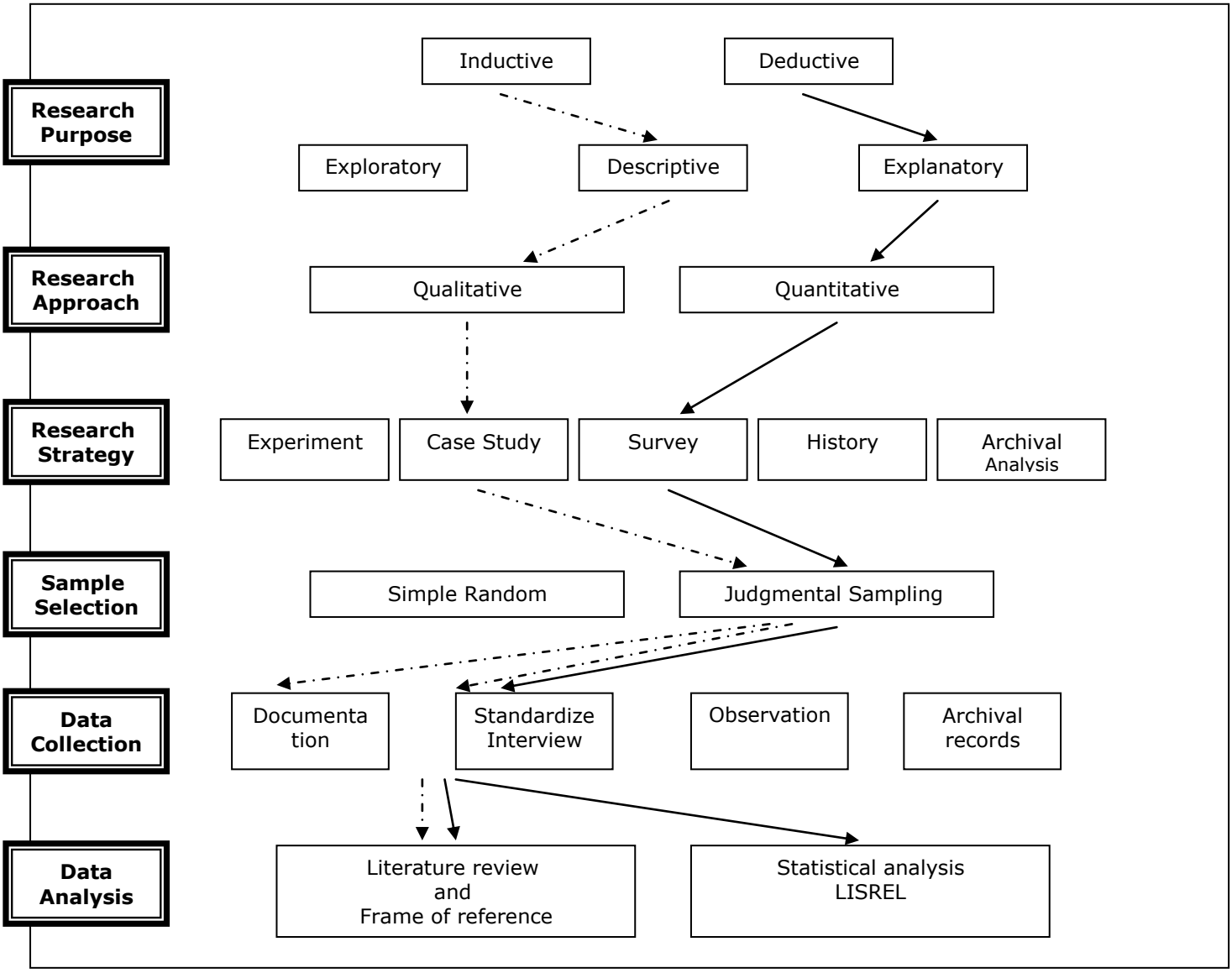
Validity is concerned with whether the findings are really about what they appear to be about. Is the relationship between two variables a causal relationship? The potential lack of validity in the conclusions will be minimized by a research design that built in the opportunity for focus groups after the questionnaire results have been analyzed.

To gain reliability of the study, the interviewees should be already familiar with both Internet and banking and at least have knowledge of banking online, and the author spent enough time to conduct interviews. The author attempted to avoid leading and subjective questions, which would be facilitated by the use of the more structured interview guide. In addition, three first interview guides was tested, thereafter; the final interview guide was made for all interview sessions. In order to develop a case study database, the audiotape, chatting data and notes from the sessions will be saved. However, it is difficult to establish reliability to any larger extent, as the case studies deal with the perceptions of people on an intangible and

varying subject. The reliability may be further influenced by the fact that peoples' perceptions vary over time, which makes it difficult for another researcher to achieve the same results *even* if the same sample were to be used. To increase the validity in this study the researcher selected multiple sources of evidence namely documentation and personal interviews. In order to further increase the validity of this study the researcher established literature to construct the frame of reference. The choice to conduct multiple case studies also increased the validity of this study, since it provided the researcher with more information about information about the research problem.

Finally, according to Bell (l999) the more advanced knowledge that one has of the area under study, the greater the potential value of a study visit or an interview". Fortunately, the researcher of this study has 12 years of working experience in the IT department of one of the large state banks (studied banks).

**Figure 4: Research Methodology Blueprint**




**Banks' Vision Methodology** ----------→

**Customers' Vision Methodology** ——————→

# Chapter 5

# Data Analysis

## *5. Data Analysis*

*In this chapter, the findings and discussion will present and analyzed based on the empirical data that has been collected through in-depth interviews with 31 banks' managers. The chapter will also presents results from a large quantitative survey comprising of 215 banks' customers. At the first the qualitative data will be present according to the research questions and after that quantitative data which gathered through the survey will be present regarding with research questions and the variables identified in the frame of reference.*

## 5.1 PART I- Qualitative Data Presentation and Analysis

This part of the research has used Structured Standardized Interview typology, i.e. it has used questionnaire based on predetermined and standardized or identical set of questions. The questionnaire was developed and sent to 38 marketing and information technology managers from 3 major banks in Iran. This study addressed both IT and marketing management, since eCommerce transcends both marketing and IT, and collaboration between the IT and the marketing people is essential. The managers were previously informed about the scope and the objectives of the study and they agreed to participate. There were 7 usable responses returned from managers for a response rate of almost 82 percent.

The questionnaire was divided into three sections. The first section dealt with company profile and IT and eCommerce management practices.

The second section dealt with the current level of development of customer-oriented Internet Banking Web sites and its perceived future contribution to improving customer services. The questions were chosen so as to represent a wide range of customer support activities.

The third section was concerned with social and technological problems, which Iranian banks encounter in developing their customer-oriented Internet Banking portfolio.

### 5.1.1 Profile of the Banks and Management Approaches

Two of the banks, which participated in this study, did not reveal any data regarding their reserves, or expenditure on IT. Only one of them reported annual reserves to be around $350 million. The IT expenditure for the same bank was around $200 million. The total number of employees, ranged from 2500 to 21,000. The number of employees in the IT departments, ranged from 60 to 400. Before embarking on the analysis of the current development of Internet banking in 3 Iranian banks it is important to evaluate their IT management approaches. Table 4 summarizes the results.

**Table 4: IT management approaches in 3 large Iranian banks**

| Problem | Managers' Responses (%) |
|---|---|
| **IT planning** | |
| The IT department proposes applications without consulting of the business plan | 13 |
| The IT department takes into account the business plan, but without discussing it with business people | 39 |
| Users, business and IT management actively participate | 48 |
| **IT people skills** | |
| Technically sound | 48 |
| Capable of using system methodologies | 23 |
| Knowledgeable about how business operates | 19 |
| IT manager part of the executive team | 10 |
| **Business people skills** | |
| Knowledgeable of IT/IT | 6 |
| Understand the potential of IT | 68 |
| Participate in IT planning | 26 |
| **IT structure** | |
| IT subordinate to accounting or finance | 5 |
| IT centralized, users are without any structure | 56 |
| IT decentralized, but with corporate views and integration of systems | 39 |
| **IT evaluation and approval based on** | |
| The cost of the development only | 8 |
| The return of investment (ROI) expressed in financial terms | 2 |
| The ROI expressed in financial, customer and organizational effectiveness factors | 10 |
| The support for business activities | 26 |
| The potential opportunities for competitive advantage | 54 |

As shown in the table, 48 percent of users jointly participate in IT planning. In the IT strategic management literature, the integration of business and IT strategic people is considered vital if the companies are to benefit most from the IT potential (Earl, 1989; Ward and Griffiths, 1996). From our sample it is clear that to a great extent of these banks do not integrate their business and IT strategic plans.

The findings of the survey also show that although 26 percent of business managers participate in IT planning, surprisingly only 6 percent are knowledgeable about IT, and no more than 68 percent understand the potential of IT. This raises questions with respect to the quality of their recommendations and plans for IT development.

Results also show that, a mere 10 percent of IT managers are members of an executive team, which in turn suggests that these managers can hardly have the opportunity to propose IT solutions that could make an impact on the strategic direction of the business. It could be pointed out therefore that 3 Iranian banks have not developed their IT management adequately.

The weak co-ordination and low level of mutual understanding between the business and IT hinders the development of novel eCommerce ideas, and suggests that management structures in Iranian banks need to change if they are to ensure the creation of new eCommerce led marketing opportunities. Furthermore, it appears that these 3 banks have developed a rather centralized architecture for their IT.

However, more decentralized structures and end-user computing approaches would enable banks to rapidly capitalize on growing Internet banking opportunities. Results also show these banks approve their IT proposals on the basis of potential opportunities for competitive advantages and support for business activities rather than customer effectiveness factors and ROI.

### 5.1.2 The Current Level of Internet Banking Web Sites Development

A study of the new marketing opportunities and strategies, which stem from the Internet and the eCommerce technologies, should include an understanding of the current situation of the Internet banking development. Table 5 presents the status of Internet banking applications in 3 Iranian banks.

An indication that Internet banking is still in its early stages of development in Iranian banks is shown by the fact that the application most mentioned by the respondents is providing information about products and services.

A web site usually publishes product information, but depending on its sophistication, it allows customers to form more complex queries or to customize the Internet site interface. Such an application clearly belongs to the initial stage of eCommerce evolution as argued by (Frost, 1999). Support for automatic payments is relatively undeveloped, which may be attributed to customers' lack of confidence regarding new technologies and communication infrastructure problems.

**Table 5: The level of Web Sites development and use of Internet Banking applications in 3 Iranian banks**

| Application Features | Not at all + little (%) | Moderate + strongly (%) |
|---|---|---|
| Give information about products etc. | 0 | 100 |
| Support accessibility of, and automatic orders for services etc. | 84 | 16 |
| Guarantee the availability of service or product design even before request | 84 | 16 |
| Applicability of mass customization | 97 | 3 |
| Offer customized and individualized attention | 100 | 0 |
| Support customers to choose the products for themselves | 84 | 16 |
| Support automatic payments including different types of Fund Transfer, Bill payment and etc. | 84 | 16 |
| On-time products delivery | 84 | 16 |
| Build IT in the products and services | 84 | 16 |
| Control of service and product quality | 84 | 16 |
| Identify market segments | 84 | 16 |
| Support after sales service | 84 | 16 |
| Offer customers administrative support, e.g. to manage finance | 97 | 3 |
| Handling customers' complaints | 100 | 0 |
| Offer customers training to use IT systems or products | 90 | 10 |
| Involve customers in the product design and customization | 87 | 13 |

**Note:** The 5-point Likert Scale is used: Not at all, Little, Moderate, Strongly, Do not know

As expected, more sophisticated applications are pretty much underdeveloped. Applications pertaining to handling customer complaints are also underused, and customer training programs hardly exist. Internet-based applications can make it more convenient for customers to express their satisfaction or dissatisfaction with respect to certain product features and service quality. This is an important communication channel that gives feedback to management and reveals opportunities for quality improvements.

The results therefore suggest that Iranian banks need to take definitive and decisive actions towards developing an effective customer-oriented attitude and build the necessary culture to carry it out.

### 5.1.3 The Evaluation of Existing Internet Banking Web Sites

Tables 6 and 7 represent the managerial evaluation of existing Internet Banking Web sites which use currently by nominated banks, with consideration in both domestic and international marketplaces.

The main point made here is that the way in which firms manage their Web sites is one of the most powerful sources of leverage they can develop to market for both domestic and international services effectively. The elements (items) shown in Tables 3 and 4, outlines that effective Web sites can embody to minimize the problems and capitalize on the opportunities incumbent in both domestic and international services.

The items in these tables asks business practitioners in banking sector as an international service firms to consider 16 statements about Web site services. Degree of agreement or disagreement with each statement, using a 5-point Likert scale that runs from "strongly disagree" (1) to "strongly agree" (5), is used to capture responses to individual statements. When all statements have been scored, an overall picture of the firm's Web site attributes provides. Interpretation of the created picture should lead to specific conclusions and implications and the identification of actions needed, i.e. firm's Web site service profile can be developed based on the evaluated scores. As a matter of fact, such an assessment can help banks identify the extent to which their Web site is effectual in marketing their service offerings domestically or internationally, isolate possible weak areas in their international Web site strategy and ultimately, prioritize potential Web site improvements.

Based on the answers represented in tables, for all items (especially in international side), the existing functionalities do not meet even domestic requirements. Only 16 percent of services deliver through Web sites in domestic market and this rate is 0 percent for international market. There are no facilities for interactive service delivering in both market and only one of the banks in this study provides its services in the basis of customer type (individual/ corporate) which is an initial stages of mass customization. Furthermore, there are no management and control mechanisms for service quality, demanding and supplying, supporting and market research in Web sites architecture.

**Table 6: The managerial evaluation of existing Internet Banking Web sites in Domestic Marketplace**

| Items Evaluated | Strongly Disagree + Disagree (%) | Moderate + Agree + Strongly Agree (%) |
|---|---|---|
| Bank uses its web site to provide evidence of informational service transactions | 84 | 16 |
| Bank uses its web site to help make tangible the yet to be performed domestic service | 84 | 16 |
| Bank uses its web site to provide samples of the domestic services. Bank uses its Web site to help customers remember and communicate the positive elements of the domestic service | 90 | 10 |
| Bank uses its Web site to provide a(n) (individually) customized domestic service. Bank uses its Web site to enable the customer to become a co producer of domestic service | 97 | 3 |
| Bank uses its web site to provide a service interface that is simple and intuitive to use | 84 | 16 |
| Bank uses its web site to produce domestic service innovations | 84 | 16 |
| Bank uses its web site to provide person-to-person interaction for the customer | 100 | 0 |
| Bank uses its web site to automate its domestic service | 84 | 16 |
| Bank uses its web site to provide customers with the option of different versions of the site in terms of language and layout | 84 | 16 |
| Bank uses its web site to help reduce customer errors | 84 | 16 |
| Bank uses its web site to provide a consistent quality of domestic service offerings | 84 | 16 |
| Bank uses its web site to conduct domestic market research | 84 | 16 |
| Bank uses its Web site to elicit feedback from customers on its services | 84 | 16 |
| Bank uses its Web site to facilitate feedback on service quality | 84 | 16 |
| Bank uses its Web site to manage the supply of its domestic service | 84 | 16 |
| Bank uses its Web site to manage the demand for its domestic services | 84 | 16 |

**Note:** The 5-point Likert Scale is used: Strongly Disagree, Disagree, Moderate, Agree, Strongly Agree

**Table 7: The managerial evaluation of existing Internet Banking Web sites in International Marketplace**

| Items Evaluated | Strongly Disagree + Disagree (%) | Moderate + Agree + Strongly Agree (%) |
|---|---|---|
| Bank uses its web site to provide evidence of informational service transactions | 84 | 16 |
| Bank uses its web site to help make tangible the yet to be performed international service | 84 | 16 |
| Bank uses its web site to provide samples of the international services. Bank uses its Web site to help customers remember and communicate the positive elements of the international service | 90 | 10 |
| Bank uses its Web site to provide a(n) (individually) customized international service. Bank uses its Web site to enable the customer to become a co producer of international service | 97 | 3 |
| Bank uses its web site to provide a service interface that is simple and intuitive to use | 84 | 16 |
| Bank uses its web site to produce international service innovations | 100 | 0 |
| Bank uses its web site to provide person-to-person interaction for the customer | 100 | 0 |
| Bank uses its web site to automate its international service | 100 | 0 |
| Bank uses its web site to provide customers with the option of different versions of the site in terms of language and layout | 84 | 16 |
| Bank uses its web site to help reduce customer errors | 84 | 16 |
| Bank uses its web site to provide a consistent quality of international service offerings | 97 | 3 |
| Bank uses its web site to conduct international market research | 100 | 0 |
| Bank uses its Web site to elicit feedback from customers on its services | 100 | 0 |
| Bank uses its Web site to facilitate feedback on service quality | 100 | 0 |
| Bank uses its Web site to manage the supply of its international service | 100 | 0 |
| Bank uses its Web site to manage the demand for its international services | 100 | 0 |

**Note:** The 5-point Likert Scale is used: Strongly Disagree, Disagree, Moderate, Agree, Strongly Agree

### 5.1.4 The Future of Internet Banking in Iranian Banks

As shown in Table 8 respondents see great potential and opportunities in Internet banking applications.

**Table 8: The expected contribution of Internet Banking Web Sites to customers' satisfaction**

| Opportunities Expectations | Not at all + little (%) | Moderate + strongly (%) |
|---|---|---|
| Support after sales service | 0 | 100 |
| Control of service and product quality | 0 | 100 |
| Offer customers administrative support, e.g. to manage finance | 10 | 90 |
| Support automatic payments | 0 | 100 |
| Give information about products etc. | 0 | 100 |
| Support accessibility of, and automatic orders for services etc. | 0 | 100 |
| Guarantee the availability of service or product design even before request | 0 | 100 |
| Involve customers in the product design and customization | 3 | 97 |
| Support customers to choose the products for themselves | 6 | 94 |
| Applicability of mass customization | 0 | 100 |
| Offer customized and individualized attention | 0 | 100 |
| Identify market segments | 0 | 100 |
| Handling customers' complaints | 0 | 100 |
| Build IT in the product and services | 0 | 100 |
| On-time products delivery | 0 | 100 |
| Offer customers training to use your IT systems or products | 0 | 100 |

**Note:** The 5-point Likert Scale is used: Not at all, Little, Moderate, Strongly, Do not know

They feel that Internet banking will impact all stages of customer service. It will spawn new opportunities with regard to customer information, but more importantly it will improve services development and customization, after sales services and standards of quality. As an example, mass customization is expected to be a critical strategic option for survival and competitiveness in the banking sector. Mass customization implies the development and distribution of products and services that are customized to specific customer needs and are made available at acceptable cost levels (Fulkerson, 1997). Mass customization of markets means that organizations can reach the same large number of customers as in the mass markets, but additionally they possess the ability to address their customers' needs individually

as in the customized markets (Parker, 1996). Banks deal with information intensive products and processes that can potentially be highly flexible so that they can be customized to an individual customer's specific need by drawing on massively available corporate data and information. Moreover, the Internet opens up new opportunities for corporate customers and banks to improve their collaboration in the product design and customization. Interorganizational teams can exchange and share important information for product development, and define customer needs and priorities more effectively. Customization however, does not only refer to the structure of the products. It focuses further on all administrative activities that support a particular product. Internet-based technologies can not only automate, but also can allow customers to gain control on some aspects of such activities, in order to customize them to their needs and increase their confidence in using the particular banking products and services.

However, a closer look at this table reveals that offering training to customers in Internet banking use is not perceived to be as promising as the rest. All of the managers in these banks believe that offering their customers training to use their Internet banking services would lead to higher service quality. Not all customers are aware of the wide-ranging capabilities of Internet banking.

Any initiative on behalf of the bank to improve their eCommerce strategies and applications portfolio would be at risk if customer participation is not ensured. It is a key management concern that customers will participate, not necessarily as co-developers, but at least as users in a common effort for developing electronic markets. Training programs will offer customers the necessary knowledge to help improve customer confidence in developing Internet banking in their own businesses.

The lack in customer training programs in conjunction with relatively low support for complaint handling applications raises concern about the depth and sincerity of customer orientation of the Iran banking sector. These types of eCommerce application do not require a high level of sophistication or especially complicated technology. It is rather a strategic issue that should be quickly addressed by the Iranian banks. For a bank to fully benefit from the new technologies and especially from the Internet and the eCommerce, it must provide for the development of a managerial and technological environment that will encourage innovation, as well

as rapid response to customer and market trends. Iranian banks should develop the necessary structures and communication channels so that both individuals and business people, especially from marketing, become more knowledgeable about eCommerce and Internet banking and capable of working together with IT staff.

### 5.1.5 Problems

Table 9 summarizes the technical and social problems faced by 3 Iranian banks in applying Internet banking. Banks feel that customers lack the necessary confidence in Internet banking. This should not be surprising given data security problems, and the fact that the Internet and eCommerce technologies are relatively new. Similarly, developing the means that will enable the customers to get access to the Internet, or even encouraging their mutual collaboration in order to determine the customers' requirements for Internet banking services, can also suggest promising opportunities in improving customer management and loyalty.

**Table 9: Main Problems in developing Internet banking applications with customer satisfaction tendency**

| Problem | Not at all + little (%) | Moderate + strongly (%) |
|---|---|---|
| Functionality | 4 | 96 |
| Data security and Reliability | 0 | 100 |
| Customers do not have access to networks | 26 | 74 |
| Lack of customer confidence in using the systems | 13 | 87 |
| Do not know customers' requirements | 61 | 39 |
| Usability | 5 | 95 |
| Performance | 64 | 36 |
| Not confident for the value for money retention of such systems | 15 | 85 |
| Lack of know-how in the bank | 35 | 65 |
| Lack of employee confidence | 35 | 65 |

**Note:** The 5-point Likert Scale is used: Not at all, Little, Moderate, Strongly, Do not know

## 5.2 PART II- Quantitative Data Presentation and Analysis

A large quantitative survey has been conducted with 215 respondents at Bank Keshavarzi during the time of 6th December to 27th December of 2005. Survey has been conducted based on structured questionnaire. The questionnaire had 23

questions (See Appendix-B). The questionnaire has been developed based on the variables that were identified in the frame of the reference, which researcher mentioned measurement criteria for each variable. The measurement criteria identified by literature review and frame of reference were broken down into multiple questions in the questionnaire to address different aspects related to variables in using Internet banking. The quantitative data are presented according to frame of references.

Of the 234 surveys that where distributed for this study, 215 useable questionnaires were returned giving response rate of 91.9 percent, which was considered satisfactory for subsequent analysis. This analysis proceeded by testing the attributes which involve for customer attitudes toward using Internet banking service.

### 5.2.1 Demographic and Descriptive Statistics

More males (64 percent) than females (28 percent) participated in the study (see Table 10). Ages ranged in three groups, from under 35 to over 50 and 51 percent of participants belonged to second age group that is from 35 to 50 (see Table 11). Approximately the education level of 60 percent of the respondents was Bachelor degree (see Table 12). In the meantime, the respondents belonged to two main customer categories, i.e. Business and Individual type. It seems the focus group in this study was more on the Business ones, with more than 70 percent (see Table 13).

**Table 10: Gender Distribution**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Invalid | | 19 | 8.1 | 8.1 | 8.1 |
| | Female | 65 | 27.8 | 27.8 | 35.9 |
| | Male | 150 | 64.1 | 64.1 | 100.0 |
| | Total | 234 | 100.0 | 100.0 | |

**Table 11: Age Group Distribution**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Invalid | | 19 | 8.1 | 8.1 | 8.1 |
| | <35 | 34 | 14.5 | 14.5 | 22.6 |
| | 35 t0 50 | 119 | 50.9 | 50.9 | 73.5 |
| | >50 | 62 | 26.5 | 26.5 | 100.0 |
| | Total | 234 | 100.0 | 100.0 | |

**Table 12: Education Distribution**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Bachelor | 139 | 59.4 | 59.4 | 67.5 |
| High School | 33 | 14.1 | 14.1 | 81.6 |
| MS.c | 43 | 18.4 | 18.4 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

**Table 13: Customer Type Distribution**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Business | 165 | 70.5 | 70.5 | 78.6 |
| Individual | 50 | 21.4 | 21.4 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

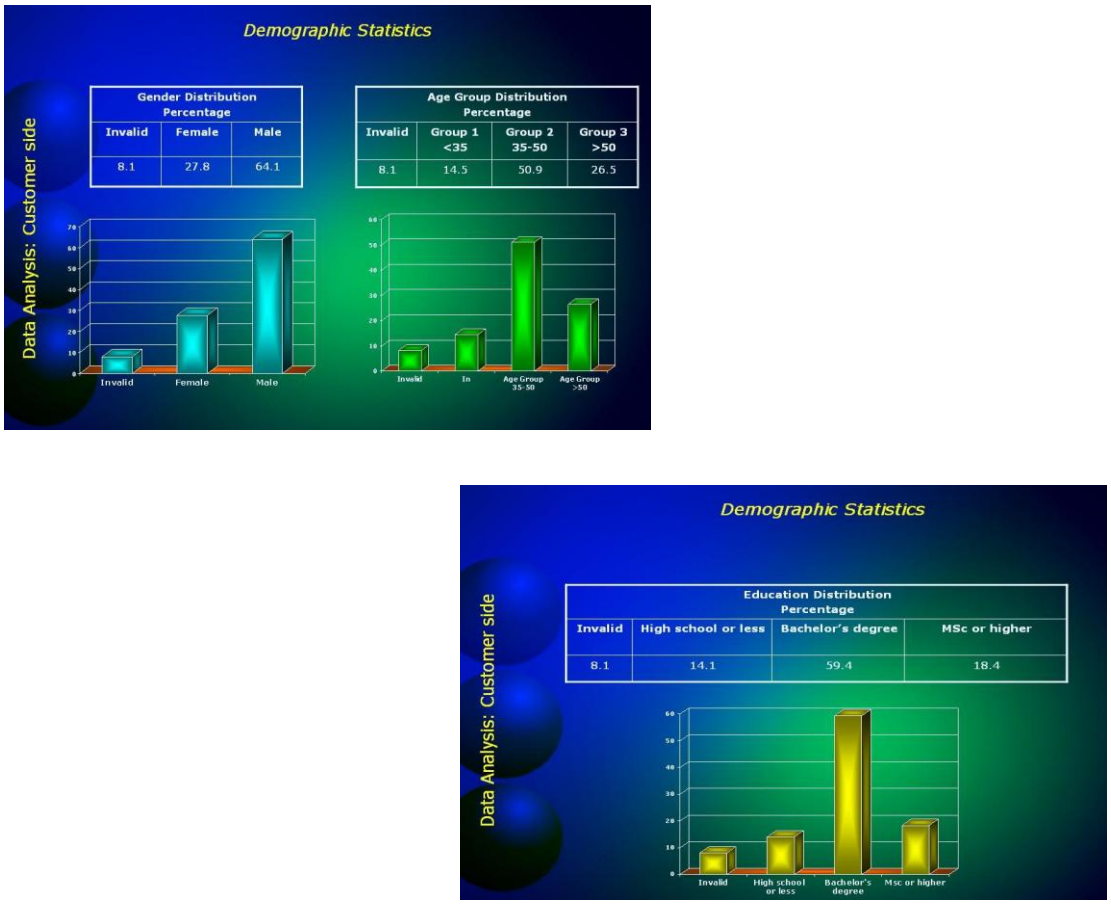



**Figure 5: Customer Demographic Statistics**

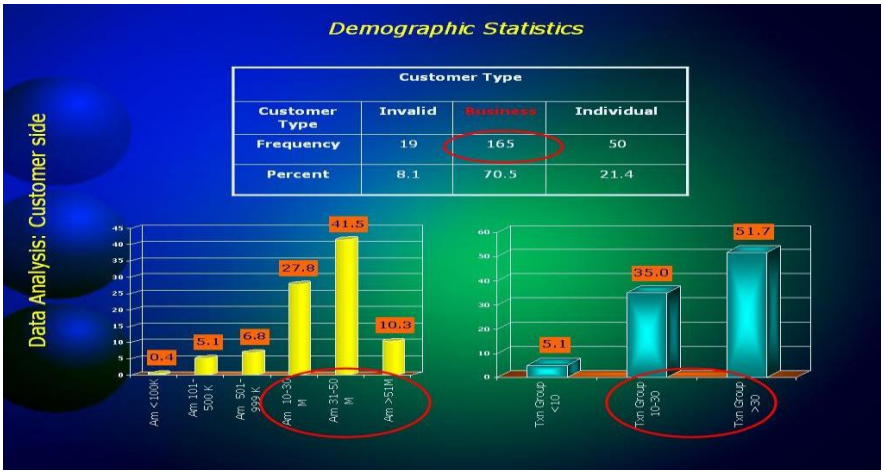



**Figure 5: Customer Demographic Statistics**

Considering that Internet banking environment is a transaction-based system, two questions were also asked about transaction information. The first was the number of transactions per month and the second was the amounts of the transactions. As statistics show, more than 51 percent of respondents have done 31 transactions and above per month (see Table 14) and from the viewpoint of transactions amounts, 41.5 percent belongs to group five and 28 percent belongs to group four of transaction amounts (see Table 15). On the other hand, these distributions for the business customers as a focus group are applied. More than 61 percent of business has done more than 31 transactions per month and 65 percent of these transactions belong to fifth category i.e. between 31 and 50 Million IRR (see Tables 16 and 17).

**Table 14: Customer Type Distribution - Transaction Group**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Invalid | | 19 | 8.1 | 8.1 | 8.1 |
| | <10 | 12 | 5.1 | 5.1 | 13.2 |
| | 10 -30 | 82 | 35.0 | 35.0 | 48.3 |
| | >30 | 121 | 51.7 | 51.7 | 100.0 |
| | Total | 234 | 100.0 | 100.0 | |

**Table 15: Customer Type Distribution - Transaction Amount Group**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| <100K | 1 | .4 | .4 | 8.5 |
| 100-500K | 12 | 5.1 | 5.1 | 13.7 |
| 501-999K | 16 | 6.8 | 6.8 | 20.5 |
| 10-30M | 65 | 27.8 | 27.8 | 48.3 |
| 31-50M | 97 | 41.5 | 41.5 | 89.7 |
| >=51M | 24 | 10.3 | 10.3 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

**Table 16: Transaction Group Distribution for Business Customers**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| <10 | 4 | 2.4 | 2.4 | 2.4 |
| 10 -30 | 60 | 36.4 | 36.4 | 38.8 |
| >30 | 101 | 61.2 | 61.2 | 100.0 |
| Total | 165 | 100.0 | 100.0 | |

**Table 17: Transaction Amount Group Distribution for Group >30 Transaction (For Business Customers)**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| <100K | | | | |
| 100-500K | | | | |
| 501-999K | 1 | 1.0 | 1.0 | 1.0 |
| 10-30M | 22 | 21.8 | 21.8 | 22.8 |
| 31-50M | 66 | 65.3 | 65.3 | 88.1 |
| >=51M | 12 | 11.9 | 11.9 | 100.0 |
| Total | 101 | 100.0 | 100.0 | |

In addition to basic descriptive information, a series of questions were also asked to explore current usage rates of the Internet banking as well as respondent knowledge of Internet banking service offered by their banking institutions. Nearly 89 percent of the sample did not use Internet banking, while only 1.3 percent has used Internet banking (see Table 18). The knowledge that customers had of the availability of Internet banking service was also very interesting. 67 percent knew their bank does not offer Internet banking service but against, 88 percent were not aware of delivering of Internet banking service in future (see Tables 19 and 20).

**Table 18: Current Usage of Internet banking**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Yes | 3 | 1.3 | 1.3 | 9.4 |
| No | 207 | 88.5 | 88.5 | 97.9 |
| Occasionally | 5 | 2.1 | 2.1 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

**Table 19: Customer Knowledge of Internet banking availability-Current**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Offers | 9 | 3.8 | 3.8 | 12.0 |
| Does not offer | 157 | 67.1 | 67.1 | 79.1 |
| Do not know | 49 | 20.9 | 20.9 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

**Table 20: Customer Knowledge of Internet banking availability-Future**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Will offer | 9 | 3.8 | 3.8 | 12.0 |
| Do not know | 206 | 88.0 | 88.0 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

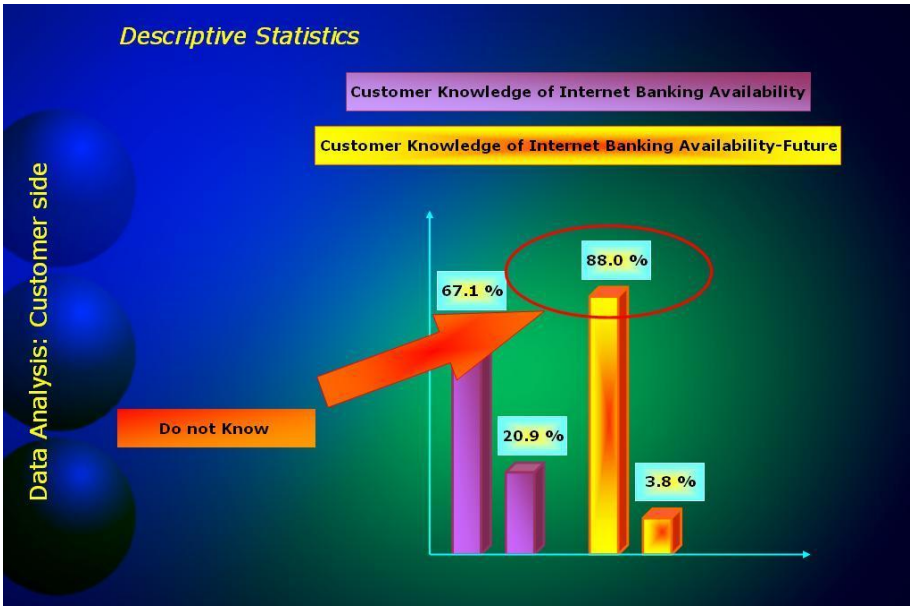



**Figure 6: Customer Descriptive Statistics**

Perhaps most worrisome to bank managers is that 88 percent were not aware their bank wants to deliver Internet banking services in the near future and near 89 percent indicated that using this service is depend on situation. On the other hand, these patterns show that Gold Edition or bundle of services will be desirable for the customers (more than 84 percent) while the other two service editions are much less regards. These results are shown in Tables 21 and 22.

**Table 21: Customer Intension to use Internet banking**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Yes | 8 | 3.4 | 3.4 | 11.5 |
| Dep. On situation | 207 | 88.5 | 88.5 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

**Table 22: Desirable Service Edition (Service Bundle)**

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Invalid | 19 | 8.1 | 8.1 | 8.1 |
| Basic | 12 | 5.1 | 5.1 | 13.2 |
| Classic | 5 | 2.1 | 2.1 | 15.4 |
| Gold | 198 | 84.6 | 84.6 | 100.0 |
| Total | 234 | 100.0 | 100.0 | |

## 5.2.2 Scale Analysis

Several scales were employed to measure the constructs included in this study. Although they were all pre-tested, it is also necessary to review their performance under the actual conditions of the study. The perceived attributes hypothesized to be relevant to attitude toward Internet banking technology were ease of use, usefulness, need for interaction, risk and cost. Internal consistency of constructs was assessed by measuring the Cronbach's Alpha as shown in Table 23.

**Table 23: Reliability Alpha for Constructs**

| Customer Perceived Attributes (Constructs) | No. Of Items | No. Of Respondent | Cronbach's Alpha | |
|---|---|---|---|---|
| | | | Pretest | Study |
| **Ease of Use** | 3 | 215 | | |
| The Internet is usually available, so the use of Inetrnet banking will be easy | | | | |
| Learning to use the Internet banking is easy | | | | |
| It will be easy for me to became skillful at using the Internet banking | | | 0.8536 | 0.8013 |
| **Usefulness** | 3 | 215 | | |
| The Internet banking gives more control | | | | |
| In general, I see benefits from using technological products | | | | |
| Using Internet banking makes doing my banking transactions easier | | | 0.9812 | 0.9604 |
| **Need for Interaction** | 3 | 215 | | |
| I will choose Internet banking to avoid interaction with bank's employees | | | | |
| The employees at my bank do things for me better than Internet | | | | |
| Interaction with employees, gives me more confidence for banking transaction (I have more trust to employees rather than Internet banking) | | | 0.8630 | 0.7803 |
| **Risk** | 3 | 215 | | |
| I know that there is no risk, to use Internet banking | | | | |
| I will feel safe and secure to conduct my banking Transactions through the Internet | | | | |
| I will feel a little danger when I use Internet banking | | | 0.8709 | 0.7057 |
| **Cost** | 3 | 215 | | |
| All the services which deliver in the ***Classic Edition***, should be free of charge | | | | |
| All the services which deliver in the ***Gold Edition***, should be free of charge | | | | |
| I prefer to intend to the branch, instead of paying fee in Internet | | | 0.7148 | 0.6120 |
| **Customer Attitude** | 3 | 215 | 0.9052 | 0.8696 |

Cronbach's alpha was calculated for each scale. Two of the five attributes scales proved to have a high level of internal consistency. However, all Cronbach's alpha exceeded from criterion of .70. The average level of the five attributes is: 0.76 which is an acceptable level of internal consistency.

### 5.2.3 Average Values of Customer Perceived Attributes (Construct)

The following graphs represent the average values of different customer types' responses related to perceived attributes questions.

**Figure 7: Ease of Use**

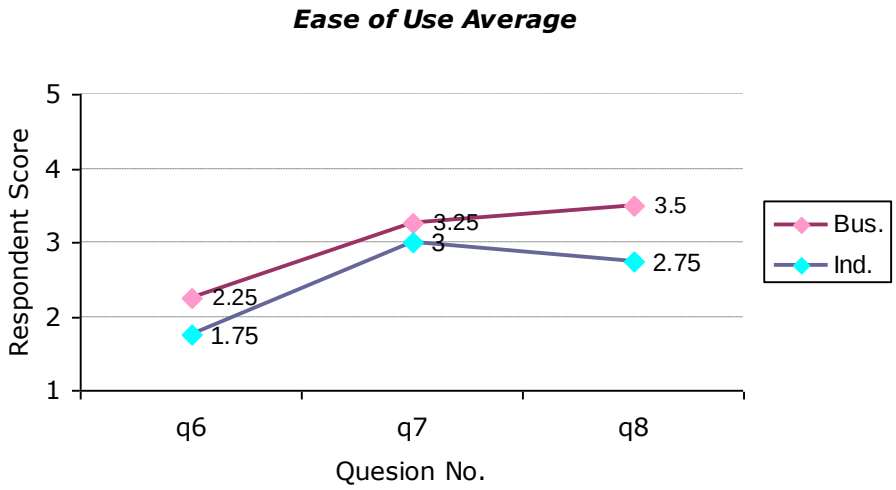



**Figure 8: Usefulness**

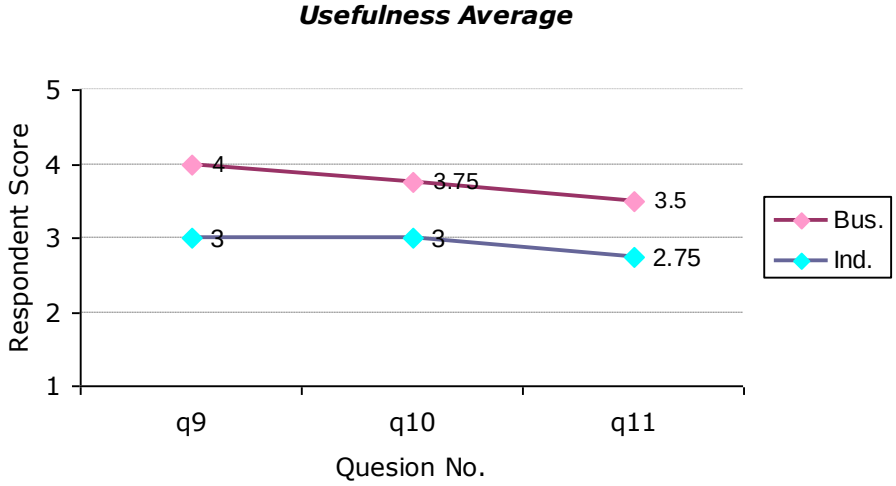



**Figure 9: Need for Interaction**

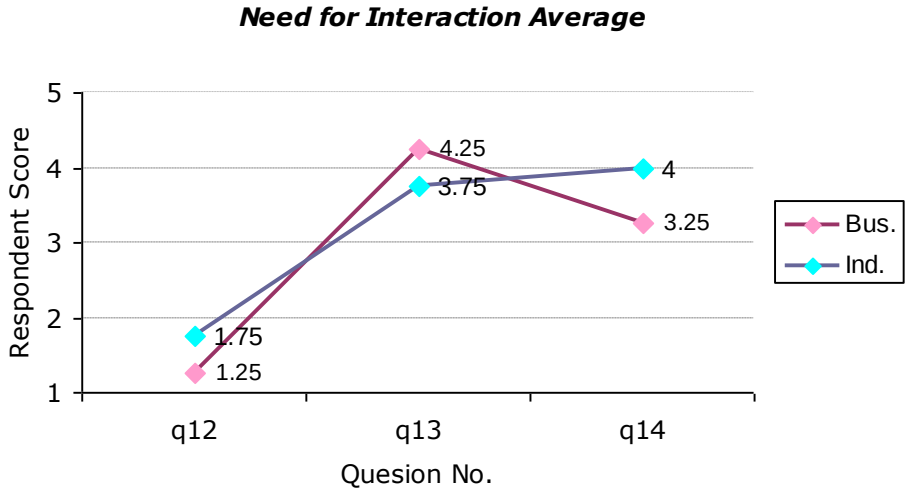


**Figure 10: Risk**

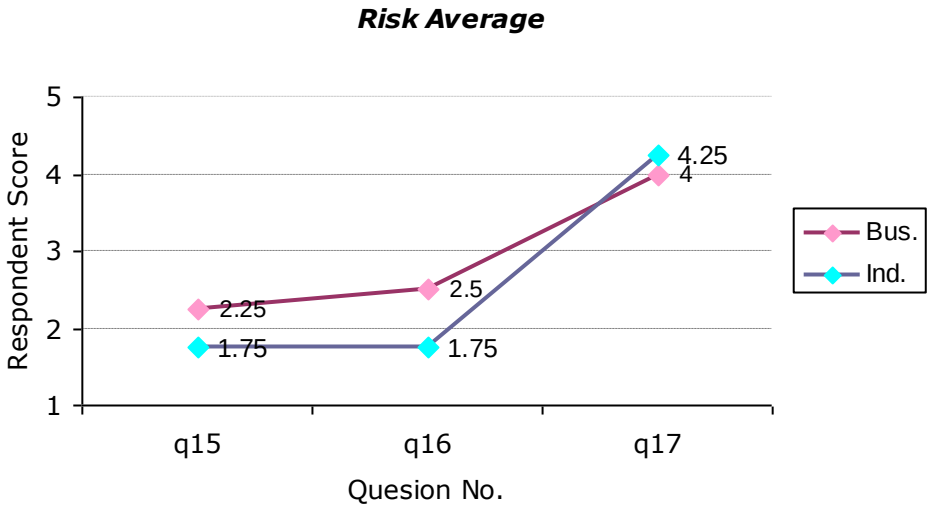
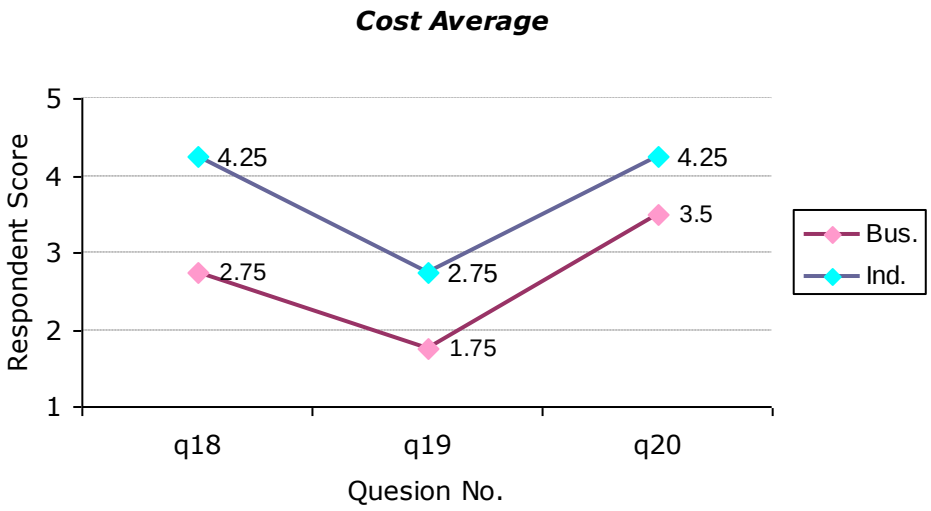


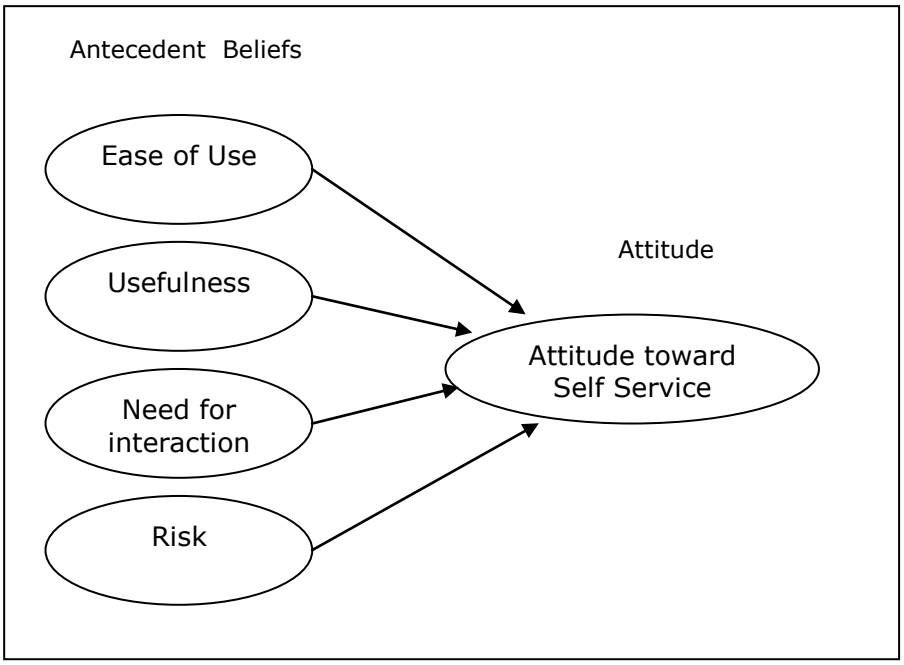

**Figure 11: Cost**




## 5.3 Data Presentation for Part II (section 5.2)

Because the aim of this part of the research is to find the influence of customers perceived attributes (constructs) on attitude toward using Internet banking technology, a SST attitude/intention to use model (Curran, J. M. & Meuter, M. L., 2005) based on the results of questionnaires has been tested.

**Figure 12: SST attitude to use model**




Source: Curran, J. M. & Meuter, M. L., 2005

## 5.3.1 Multiple-Item Constructs

The below standardized or beta coefficients are the estimate of an analysis performed on constructs that have been standardized and show which of the independent constructs have a greater effect on the dependent construct in multiple regression analysis, when the constructs are measured in different units of measurement. Before fitting the multiple regression equation, all constructs (independent and dependent) can be standardized by subtracting the mean and dividing by the standard deviation. The standardized regression coefficients, then, represent the change in a dependent construct that result from a change of one standard deviation in an independent construct.

**Table 24: Coefficients**

| **Construct** | **Estimated coefficients** | **Standardized Coefficients** | ***t*** |
|---|---|---|---|
| | **B** | **Beta** | |
| Ease of Use | | | 2.98 /-2.33 |
| Usefulness | 1.30 | 0.28 | 4.24 |
| Need for Interaction | | | 2.43 |
| Risk | -1.51 | -0.18 | -2.79 |
| Cost | | | 2.38 |

### 5.3.2 Data Analyses

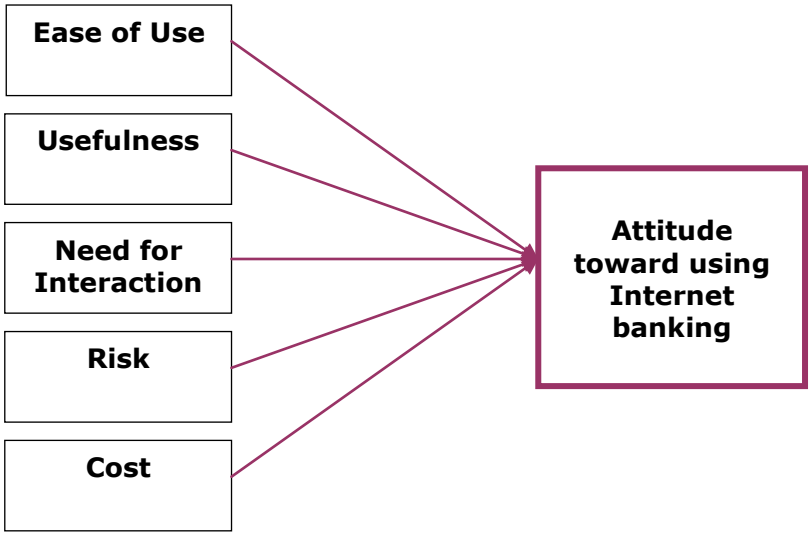
According to the SST attitude/Intention to use model which is described earlier, path analysis is implemented to find and analyze the relation between constructs and attitude toward using Internet banking.

Path analysis is a statistical technique that allows researchers to quantify and test theories. Path analysis techniques are considered today to be a major component of applied multivariate statistical analyses and are used by economics, marketing, educational researchers and a variety of other social and behavioral scientists. One reason for the recent attention is the availability of specialized Path analysis programs such as *LISREL*. Generally, path analysis models represent translations of a series of hypothesized cause-effect relationships between variables into a composite hypothesis concerning patterns of statistical dependencies. The relationships are described by parameters that indicate the magnitude of the effect (direct or indirect) that independent variables have no dependent variables. By enabling the translation of hypothesized relationships into testable mathematical models, path analysis offers researchers a comprehensive method for the quantification and testing of theoretical models (Pugesek, Tomer & Von Eye, 2003).

The hypothesized relationships among the various variables in a model are typically the primary focus of most path analysis investigations. These relationships are represented by one or two way arrows in the path diagram. The variable at the end of the arrow is assumed to be affected by the variable at the beginning of the path. Two way arrows are representative of a covariance or association between the connected variables. These paths are interpreted as *correlational*. Once the model and the parameters (paths) to be estimated are specified, the parameters are combined to form a model-implied *Correlation matrix* that will be tested against the observed correlation matrix i.e., the correlation matrix obtained from the empirical data (identification of a model). There are three levels of identification in Path Analysis. The first is *under-identified* model. It uses when one or more parameters cannot be estimated form the observed variance-covariance matrix. A *just-identified* model is a model that utilizes all of the uniquely estimable parameters. This type of model will always results in a perfect fit to the empirical data. The *over-identified* model occurs

when the number of available correlation covariance is greater in number than the number of parameters to be estimated.

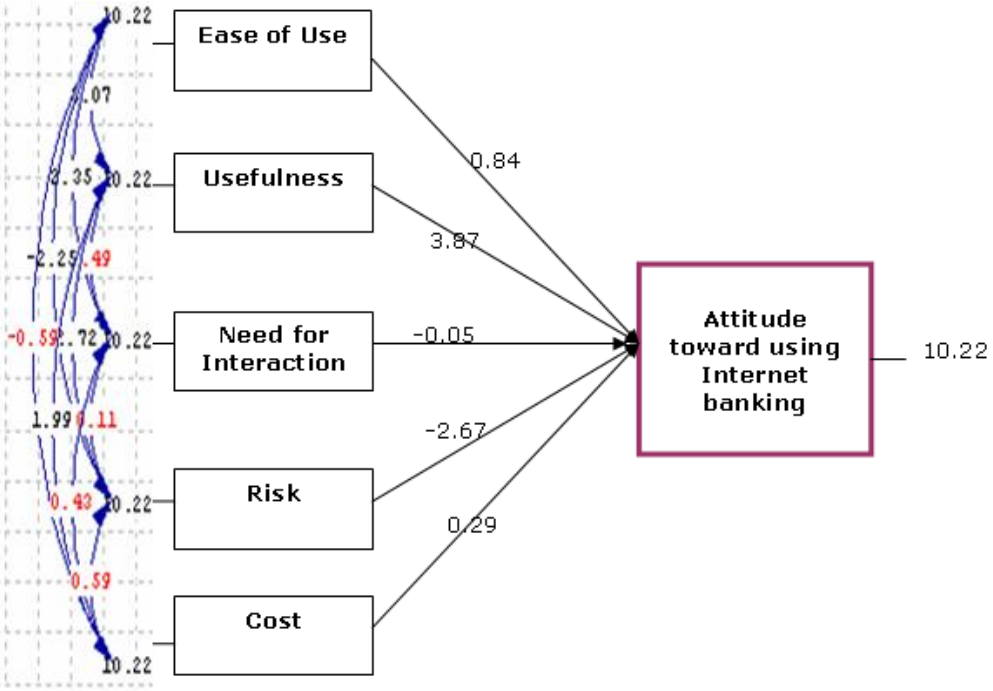
**Figure 13: Relation of Constructs and Attitude (Depended variable)**




Ease of use, Usefulness, Need for Interaction, Risk and Cost consider as perceived attributes (constructs) which they have influence on attitude toward using Internet banking (Curran, J. M. & Meuter, M. L., 2005). LISREL V8.5 is used to implement path analysis for measuring the relation between perceived attributes and attitude (Figure 14). The major advantages of LISREL are that it can be estimate multiple and interrelated dependence relationships and that it can represent unobserved concepts, or latent variables, in those relationships and account for measurement error in the estimation process.

The *t*-values show that the Ease of Use, Need for Interaction and Cost have not any impact on Attitude in the studied banks (which all the *t*-values are less than 2.00). According to LISREL and the result of path analysis, *t*-values show the meaningful direct relation with numbers more than 2.00. Considering the data obtains from path analysis of the model (Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000), it can be concluded that the model is saturated and the fit is perfect.

**Figure 14: Result of Path Analysis for Direct Relations**




### 5.3.3 Evaluation of the Model (Investigating for other relations)

After finding two direct relations between constructs (Usefulness and Risk) and Attitude, the ***indirect relations*** between Ease of Use, Need for Interaction and Cost with two other constructs considered as factors with indirect influence on Attitude.

According to previous research (Curran, J. M. & Meuter, M. L., 2005) and the literature, SST Attitude/Intention to use model shows that each one of the constructs (customer perceived attributes) has the ability to measure the attitude toward using Internet banking.

Following this objective and for generalizing the findings, also to gain a deeper understanding of the variables which may have influence on attitude toward using Internet banking, the indirect relation between constructs and attitude were tested and the aim is to find any available meaningful relation (Figure 14) which it may have influence on attitude toward using Internet banking. Studying the relations between each construct is not very far from the goal of this thesis report, because as

mention before, all of the constructs were formed to test the influence of values which affect the attitude toward the use of Internet banking service.

Again LISREL is used to perform path analysis of the relation between measurement items that were used to capture the meaningful relations between the constructs and attitude. Using LISREL for path analyses provides a more rigorous assessment of the fit between the collected data and the theoretical structure, and satisfies the minimum requirements of assessing the measurement.

To achieve a closer result during analyzing the relation of constructs path diagram employed as a fundamental role player in structural modeling data analysis. Path diagrams are like flowcharts. They show variables interconnected with lines that are used to indicate causal flow. A path diagram can be considered as a device for showing which variables cause changes in other variables. However, path diagrams need not be thought of strictly in this way. They may also be given a narrower, more specific interpretation.

### 5.3.3.1 Correlation Matrix

The table below shows the descriptive statistics and inter-correlations of the studied variables. This table presents the Pearson Correlation among the variables and auxiliary diagonal presents the relation between the constructs and the other values show the relationship of each two constructs.

**Table 25: Inter-correlations among constructs**

| | Ease of Use | Usefulness | Need for Interaction | Risk | Cost | Customer Attitude |
|---|---|---|---|---|---|---|
| **Ease of Use** | 1 | | | | | |
| **Usefulness** | .216** | 1 | | | | |
| **Need for Interaction** | .165** | .102 | 1 | | | |
| **Risk** | -.159** | -.191** | -.009 | 1 | | |
| **Cost** | -.040 | .141* | .028 | .040 | 1 | |
| **Customer Attitude** | .140* | .312** | .036 | -.235** | .046 | 1 |

* .Correlation is significant at the 0.05 level (2-tailed)
** .Correlation is significant at the 0.01 level (2-tailed)

### 5.3.4 Revised Model

Refinement to previous model which developed by Curran, J. M. & Meuter, M. L. (2005), has been made because it formerly analyzed and the result did not show any meaningful relation between three of the constructs (Ease of Use, Need for Interaction and Cost) and Attitude. The refined model which is used to evaluate the indirect relations is presented in Figures 15 to 16.

**Table 26: Coefficients**

| Construct | Estimated coefficients | Standardized Coefficients |
|---|---|---|
| | B | Beta |
| Ease of Use | --- | --- |
| Usefulness | 1.30 | 0.28 |
| Need for Interaction | --- | --- |
| Risk | -1.51 | -0.18 |
| Cost | --- | --- |

**Figure 15: Indirect Relations among Constructors (*estimate value*s)**

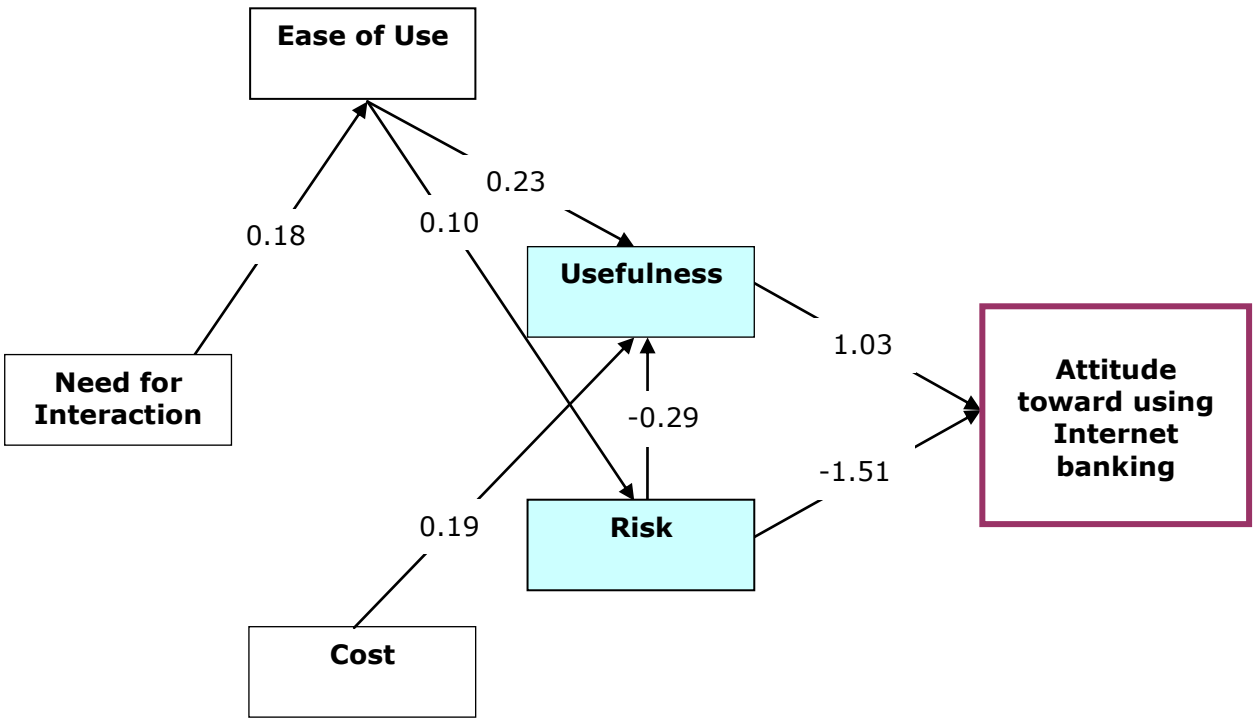


**Figure 16: Indirect Relations among Constructors (*standardized value*s)**

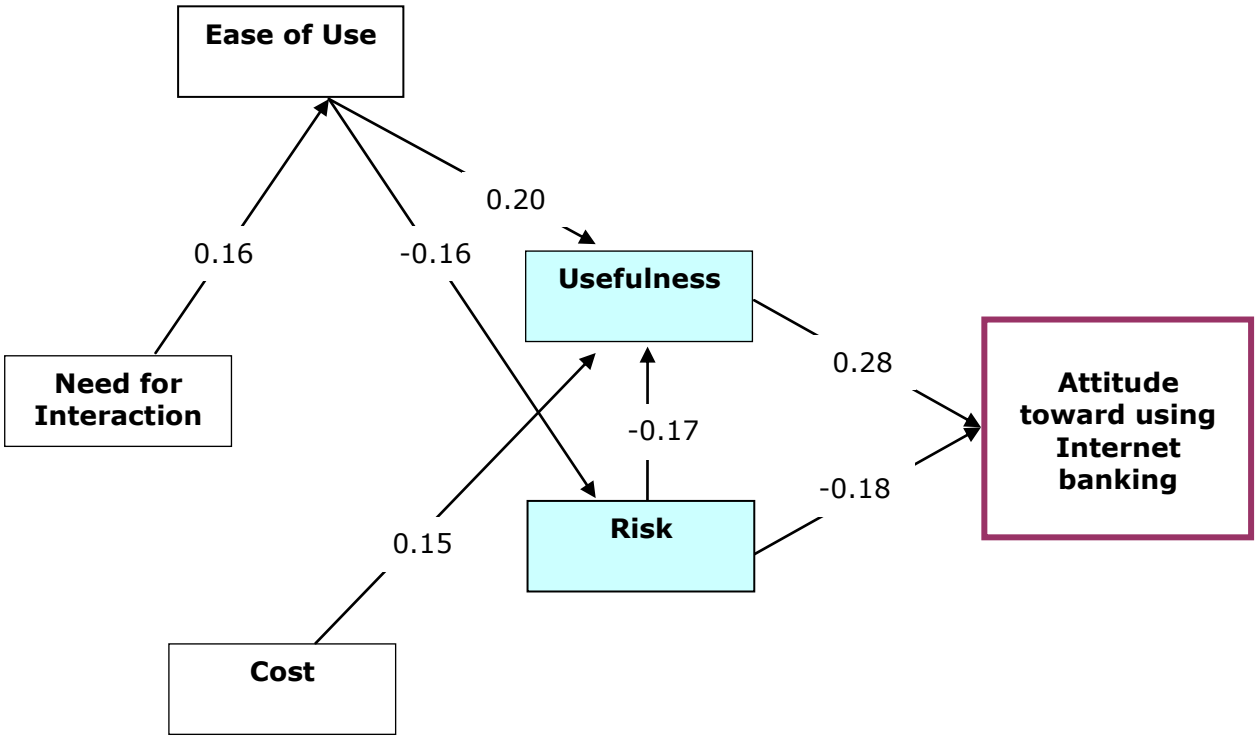



**Table 27: *t* value**

| Construct | *t* value (Direct) | *t* value (Indirect) |
|---|---|---|
| Ease of Use | -- | 2.98 /-2.33 |
| Usefulness | 4.24 | |
| Need for Interaction | --- | 2.43 |
| Risk | -2.79 | |
| Cost | --- | 2.38 |

**Figure 17: Indirect Relations among Constructors (*t*-values)**

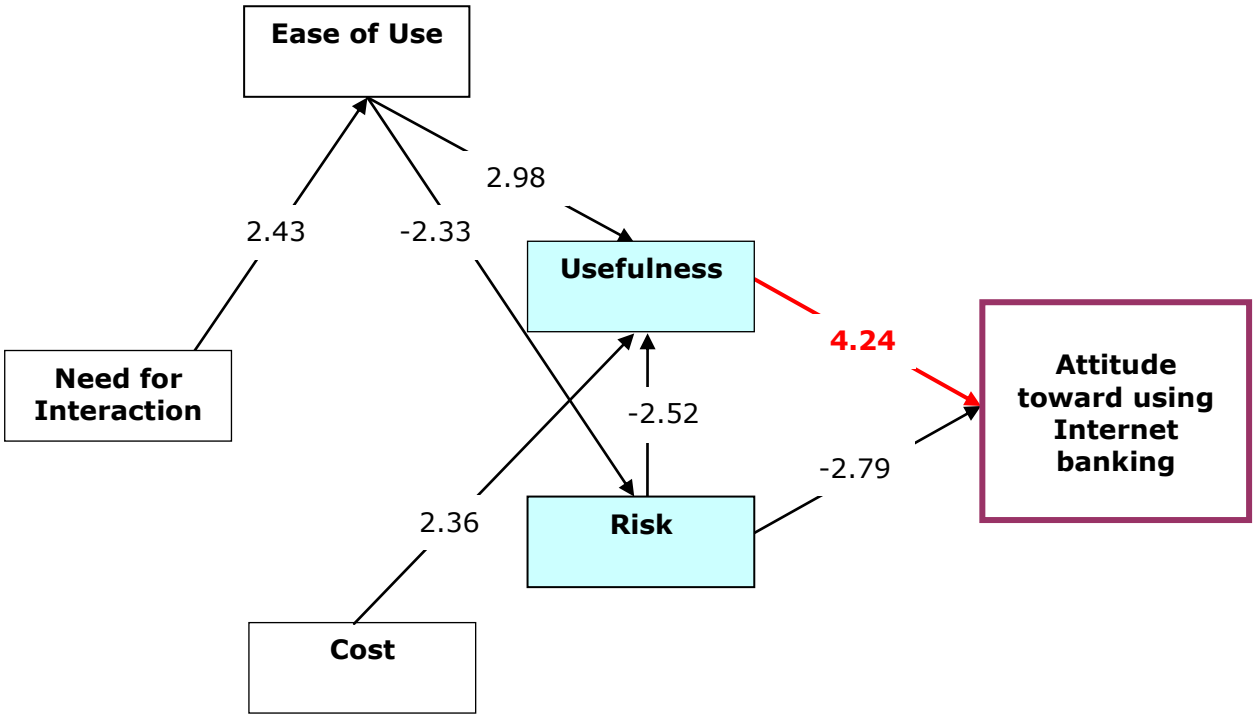



**Table 28: Standard and *t*-Values of Constructs Revised Model**

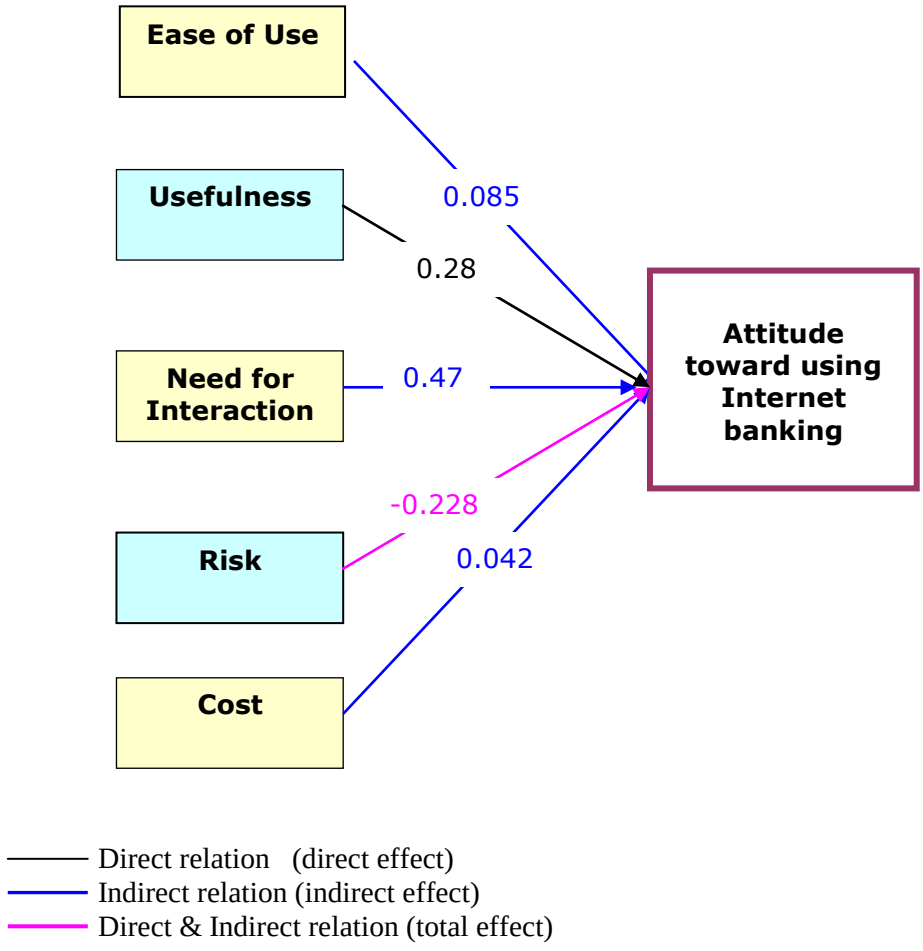
| Construct | Statistical significant | Standardized Coefficients |
|---|---|---|
| | ***t* value** | **Beta** |
| Ease of Use | -- | --- |
| Usefulness | 4.24 | 0.28 |
| Need for Interaction | --- | --- |
| Risk | -2.79 | -0.18 |
| Cost | --- | --- |

Considering above discussions, the refined model was tested and both direct and indirect values were obtained with assistance of LISREL. Both values were present on the lines which it shows the total effect of each construct on attitude (Figure 18).

**Table 29: Total effect of variables**

| Construct | Direct effect | Indirect effect | Total effect |
|---|---|---|---|
| Ease of Use | --- | 0.085 | 0.085 |
| Usefulness | 0.28 | --- | 0.28 |
| Need for Interaction | --- | 0.47 | 0.47 |
| Risk | -0.18 | -0.048 | -0.228 |
| Cost | --- | 0.042 | 0.042 |

**Figure 18: Total Effect of Constructs on Attitude**




Considering the data obtained from path analysis of the model (Chi-Square = 2.61, df =8, P-value = 0.95656 and RMSEA = 0.000) it can be concluded that the model is saturated and the fit is perfect.

### 5.3.5 Goodness-of-fit Indices

Good indices of fit should not be influenced too much by sample size. Comparison of several types of indices of fit with general has been recommended. The table below shows the observed values for some of these indices.

**Table 30: Goodness-of-fit Indices Values for Revised Model**

| Goodness of Fit Indices | Observed Values | Desired Level |
|---|---|---|
| $X^2$ | 2.61 | --- |
| df | 8 | --- |
| $X^2/df$ | 0.326 | <3.0 |
| GFI | 1.00 | >0.90 |
| AGFI | 0.99 | >0.80 |
| Standardized RMR | 0.023 | <0.50 |
| RMSEA | 0.00 | 0.05 |
| NFI | 0.96 | >0.90 |
| CFI | 1.00 | >0.90 |

## 5.4 Results

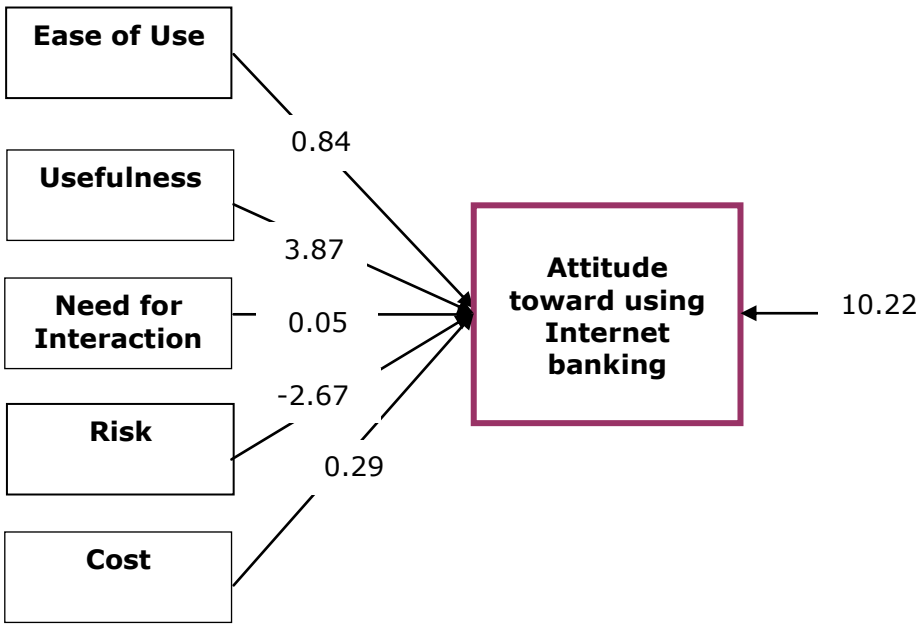
### 5.4.1 Customer Perceived Attributes Hypothesis Results

Five perceived attributes are hypothesized to influence attitude toward the Internet banking service. Path Analysis is used to test all of the purposed relationships. The sample size of 215 is adequate for a path analysis. The model tested contains five perceived attributes constructs (measured with three item scales). There is also a single item measure of mental intensions included in the model. This brings the total number of observed variables included in the model is 5 and the number of items points in the model are 15. The number of parameters to be estimate in the test of the model is 15, which means that the test of the model will have 8 degree of freedom.

The Internet banking model was run with a sample size of 215 and the model is diagramed in Figure 19. Being that this service is the least known and adopted of the technologies, it is not surprising that the model results are not quite strong. The results are still, however, usable. For this model, the chi-square value ($X^2$) was 2.61 and the degree of freedom were 8 resulting in a chi-square/df ratio of 0.326, which is well within acceptable ranges. The RMSEA value of 0.000 is less than 0.1 limits for

acceptability imposed by experts. The CFI for this model is 1.00, which is once again acceptable. The proportion of the variance explained ($R^2$) for the dependent variables are 13 percent for attitude toward Internet banking. The two significant paths from a perceived attribute were from Usefulness and Risk to attitude toward Internet banking and they were significant at the t-value>2.0 level providing support for H2 and H4. The paths from Ease of use, Need for interaction and Cost were not found to be significant in this case so no support can be offered for H1, H3 and H5.

**Figure 19: Internet Banking Model**




Significance level (s): P<0.05, p<0.01, p<0.001 non-significance level (ns): p>0.05

Significant *t*-value: *t*>2.0

# Chapter 6

# Conclusion and Implications

## *6. Conclusion and Implications*

*In this final chapter, the results of this research and general conclusions will be drawn. Later implications for management and future research are presented.*

## 6.1 Conclusion

As shown in data presentation section, 48 percent of users jointly participate in IT planning. In the IT strategic management literature, the integration of business and IT strategic people is considered vital if the companies are to benefit most from the IT potential (Earl, 1989; Ward and Griffiths, 1996). From our sample it is clear that to a great extent of these banks do not integrate their business and IT strategic plans. The findings of the survey also show that although 26 percent of business managers participate in IT planning, surprisingly only 6 percent are knowledgeable about IT, and no more than 68 percent understand the potential of IT. This raises questions with respect to the quality of their recommendations and plans for IT development. Results also show that, a mere 10 percent of IT managers are members of an executive team, which in turn suggests that these managers can hardly have the opportunity to propose IT solutions that could make an impact on the strategic direction of the business. It could be pointed out therefore that 3 Iranian banks have not developed their IT management adequately. The weak co-ordination and low level of mutual understanding between the business and IT hinders the development of novel eCommerce ideas, and suggests that management structures in Iranian banks need to change if they are to ensure the creation of new eCommerce led marketing opportunities. Furthermore, it appears that these 3 banks have developed a rather centralized architecture for their IT. However, more decentralized structures and end-user computing approaches would enable banks to rapidly capitalize on growing Internet banking opportunities. Results also show these banks approve their IT proposals on the basis of potential opportunities for competitive advantages and support for business activities rather than customer effectiveness factors and ROI.

An indication that Internet banking is still in its early stages of development in Iranian banks is shown by the fact that the application most mentioned by the respondents is providing information about products and services.

As expected, more sophisticated applications are pretty much underdeveloped. Applications pertaining to handling customer complaints are also underused, and customer training programs hardly exist. Internet-based applications can make it more convenient for customers to express their satisfaction or dissatisfaction with respect to

certain product features and service quality. This is an important communication channel that gives feedback to management and reveals opportunities for quality improvements.

The results therefore suggest that Iranian banks need to take definitive and decisive actions towards developing an effective customer-oriented attitude and build the necessary culture to carry it out. The managerial evaluation of existing Internet Banking Web sites which use currently by nominated banks, with consideration in both domestic and international marketplaces shows that the existing functionalities do not meet even domestic requirements. Only 16 percent of services deliver through Web sites in domestic market and this rate is 0 percent for international market. There are no facilities for interactive service delivering in both market and only one of the banks in this study provides its services in the basis of customer type (individual/ corporate) which is an initial stages of mass customization. Furthermore, there are no management and control mechanisms for service quality, demanding and supplying, supporting and market research in Web sites architecture.

Any initiative on behalf of the bank to improve their eCommerce strategies and applications portfolio would be at risk if customer participation is not ensured. It is a key management concern that customers will participate, not necessarily as co-developers, but at least as users in a common effort for developing electronic markets. Training programs will offer customers the necessary knowledge to help improve customer confidence in developing Internet banking in their own businesses. The lack in customer training programs in conjunction with relatively low support for complaint handling applications raises concern about the depth and sincerity of customer orientation of the Iran banking sector. These types of eCommerce application do not require a high level of sophistication or especially complicated technology. It is rather a strategic issue that should be quickly addressed by the Iranian banks. For a bank to fully benefit from the new technologies and especially from the Internet and the eCommerce, it must provide for the development of a managerial and technological environment that will encourage innovation, as well as rapid response to customer and market trends. Iranian banks should develop the necessary structures and communication channels so that both individuals and business people, especially from marketing, become more knowledgeable about

eCommerce and Internet banking and capable of working together with IT staff.

Banks feel that customers lack the necessary confidence in Internet banking. This should not be surprising given data security problems, and the fact that the Internet and eCommerce technologies are relatively new. Similarly, developing the means that will enable the customers to get access to the Internet, or even encouraging their mutual collaboration in order to determine the customers' requirements for Internet banking services, can also suggest promising opportunities in improving customer management and loyalty.

### 6.1.1 Management Recommendation

This section presents the management recommendations for the development of internet banking services as a marketing tool. These recommendations extracted through interview sessions.

1- Update management practices in order to achieve the integration of marketing and IT

2- Find the solution for legal issues by legalistic authorities

3- Available the security solutions through known companies with competency

4- Offer motives to customers to use internet banking services banking services

5- Offer training to customers so that banks will not only strengthen their relationships with their customers, but they will also alleviate the lack of confidence on the part of the customers in using internet banking services facilities

6- Offer training to both IT and marketing employees in order to facilitate communication and cultivate internet banking culture

7- Integrate banking systems with the systems of external entities to provide seamless, single point access to various commercial services Banking – Insurance, Banking-Municipality, Banking-Government, Banking – Income Tax, etc.

8- Offer products that are tailored for the Interne

9- Offer other banking service channel for better support of internet banking

It is manifestly clear should be stated that although in its early stages of development, the Internet and eCommerce represent promising avenues for creating marketing and improving customer satisfaction and loyalty in Iran. Customers are demanding efficient, flexible and customized services from their banks. The manager frame of these 3 Iranian banks, in the midst of their extensive restructuring should take full advantage of the Internet potential and translate it into a valuable marketing and business tool.

In continue, this research has dearly demonstrated that there are differences among attributes which are important for the customers to use Internet banking, that must be carefully considered by those firms intending to implement Internet banking as part of their customer contact strategies.

A central goal of this research was to understand what makes this technology different so that firms may anticipate factors critical to the successful implementation of their Internet banking Web sites. It is not surprising that the more positive the attitude toward the Internet banking, the more widely adopted it became, but what we wanted to understand better was what drives the attitude. Five attributes constructs for attitudes toward the Internet banking, ease of use, usefulness, risk, cost and need for interaction, were tested and three were found to have significant impact under certain circumstances. The structural models show that usefulness was a significant predictor for attitudes toward Internet banking. Ease of use was not a direct significant predictor for attitudes toward Internet banking, but through usefulness it was. Risk was an important determinant of attitudes toward Internet banking. Data has also that usefulness is a high significant influence for attitudes toward Internet banking. Combining the results of the adoption rates and path analysis models is it reasonable to conclude that although consumers may find Internet banking useful, if it is not easy to use there will be resistance to adoption. It cannot be determined from this study whether the problem of a poor adoption rate is rooted in a design flaw with the technology used for Internet banking that makes it relatively difficult to use or a marketing issue in that banks have not clearly educated the customers about how easy it is to use their Internet banking systems. However, it is clear that the notion of how easy an Internet banking is to use a critical factor in its general acceptance.

Firms contemplating the use of Internet banking as a customer contact point are faced with two very important marketing issues, one being customer reaction to the design of the Internet banking and the other the education of the targeted consumers as to how useful and easy to use the Internet banking will be. While it may be true that a consumer might find it difficult to understand a totally new technology (Li and Calantone, 1998), it is also true that they are already familiar with the delivery of the service and likely to have developed preferences for the manner in which they wish the service to encounter to proceed. Because an Internet banking combines the technology with the service encounter with which customers are already familiar, the argument that consumers cannot contribute to efficient design should not apply. Marketers should have been able to either gather information aimed at redesigning the technology to be easier to use, or educated the consumer that their perceptions of difficulties using this technology were unfounded, Failure to take either of these steps has resulted in the ongoing implementation of an underused technology at a continuing cost to the firms making them available.

The results of the path analysis model for this Internet banking show that the only significant predictors for attitude toward on-line banking were usefulness and risk. In this case, with neither ease of use nor need for interaction and cost being significant, it is possible that consumers have yet to decide what they believe about this option for conducting their banking or that they have already decided that they are not interested in using computers to deal with their banks. However, all three last attributes indirectly affect on usefulness.

In conclusion, this study does support the thinking that there are multiple factors at work through the diffusion process and that some are more influential than others under given circumstances. As the recent developments in the internet business communities have demonstrated, if you deliver something through a technology-based interface it will not be guaranteed to work simply because it is technology. Well-planned and effectively managed technologies can be successful. It is hoped that these research findings will help managers to more effectively plan and manage Internet banking introductions by focusing on the critical factors that impact customer intention to use a technology.

## 6.2 Executive Summary and Implications for Managers and Executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of this article.

Technology has become an integral part of doing business for many companies, but the benefits sought by the champions of technology are not always fully realized. This is particularly true with technology that the customer uses as a replacement for a firm's employees in the delivery of services. This technology can benefit the service provider by standardizing service delivery, reducing labor costs and expanding the options for delivery. But it can drain resources if not widely accepted by customers. The researcher examined the factors that affect customer attitude toward, and adoption of, one of the self-service banking technologies – Internet banking which is relatively new to the marketplace.

The research, conducted among banking customers in a one-state region in Iran, shows that nearly 89 percent of the sample had not used Internet banking. Perhaps most worrisome to bank managers is that 88 percent were not aware their bank wants to deliver Internet banking services in the near future and near 89 percent indicated that using this service is depend on situation. On the other hand, the studied patterns show that Gold Edition or bundle of services will be desirable for the customers (more than 84 percent) while the other two service editions are much less regards.

### 6.2.1 Factors Driving People's Attitudes towards Self-Service Technology

The research reveals that the more positive people's attitude is towards a self-service technology, the more widely adopted the technology has become. Ease of use, usefulness, risk, cost and need for interaction with bank personnel were tested to shed light on what drives people's attitude. The usefulness of the technology and risk significantly predicted people's attitude towards Internet banking. Risk was an important determinant of attitude toward Internet banking. There was no evidence to support the idea that a "need for interaction with bank staff" affected attitude to Internet banking technologies.

### 6.2.2 Internet Banking Perceived as Risky

Most customers were uncomfortable with Internet banking as an option for conducting their business. This is may be because it remains in its infancy. However, while neither ease-of-use nor cost were significant predictors of customer attitude towards Internet banking, risk and usefulness certainly was. Customers may eventually come to see Internet banking as easy to use. This would generate widespread usage. But if customers come to see Internet banking as a useful tool and not easy to use, it may suffer the same fate. And if customer perceptions of Internet banking fail to shift from it being a risky method of handling banking transactions, banks may have to write off much of their investment in Internet banking systems. Proper design of the websites and educating the customer about how to use online banking properly seem to offer the key to its long-term success.

It appears likely that firms introducing a new self-service technology would have to deal with a period of risk or uncertainty about it as customers learn how to operate it and appreciate its benefits. Later on, however, different factors are likely to determine the level of uptake. Marketing strategies to address salient beliefs must change during the diffusion process to address the beliefs that are most important at each stage.

## 6.3 Implications for Further Research

As presented in data analysis section, the studied attributes just had 13 percent influence on attitude to use Internet banking. On the other hand this study is a prediction of customer vision and they did not use the service in real cases and situations, so the banks must have another research after launching the service to investigate about service quality and customer loyalty. Since, focusing on quality of service is the primary concern of Internet based e-commerce (Griffith & Krampf, 1998). The Internet, if properly utilized, can be a powerful tool to increase overall service offerings and create a higher standard in various industries (Griff & Palmer, 1999).

In the meantime, another research can be done regarding the association of customers' attitude and banks' employees attitude to use Internet banking.

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# APPENDICES

**Appendix A: Banks' Managers Questionnaire Construction**

**Appendix B: Customers Questionnaire Construction**

**Appendix C: Banks' Profile**

**Appendix D: Questionnaire Data Response Set**

# Appendix A: Banks' Managers Questionnaire Construction

**The evaluation and development of Internet banking Web sits**
**In 3 large Iranian banks**

**Date: 15 August 2005**

Interviewee Name
Chairman & Managing Director
Agricultural Bank of Iran

I am currently researching the above, in order to determine and share effective practices on this topical and important issue.

You have experience that would be of value to me and I would very much like to know your views on this subject.

I have enclosed a copy of the interview questions to allow you to prepare for this interview and to also save your valuable time. The interview will be confidential, will be arrange at a time convenient to you. The total time for participation in this study is estimated to be approximately 1 hour.

No source, individual or organizational will be identified or commitment attributed without the express permission of the originator.

I hope you are able to help. I will contact you on receipt to confirm arrangements where you are able to participate.

If you require any further information, please do not hesitate to get in touch.

**Sincerely**
**Mojdeh Ghezelayagh**

## Q1- New IS management approaches in Bank X of Iran

| | | Not at all | Little | Moderate | Strongly | Do not know |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| | **IS planning** | | | | | |
| 1 | The IS department proposes applications without consulting of the business plan | | | | | |
| 2 | The IS department takes into account the business plan, but without discussing it with business people | | | | | |
| 3 | Users, business and IS management actively participate | | | | | |
| | **IS people skills** | | | | | |
| 4 | Technically sound | | | | | |
| 5 | Capable of using system methodologies | | | | | |
| 6 | Knowledgeable about how business operates | | | | | |
| 7 | IS manager part of the executive team | | | | | |
| | **Business people skills** | | | | | |
| 8 | Knowledgeable of IS/IT | | | | | |
| 9 | Understand the potential of IS | | | | | |
| 10 | Participate in IS planning | | | | | |
| | **IS structure** | | | | | |
| 11 | IS subordinate to accounting or finance | | | | | |
| 12 | IS centralized, users are without any structure | | | | | |
| 13 | IS decentralized, but with corporate views and integration of systems | | | | | |
| | **IS evaluation and approval based on** | | | | | |
| 14 | The cost of the development only | | | | | |
| 15 | The return of investment (ROI) expressed in financial terms | | | | | |
| 16 | The ROI expressed in financial, customer and organizational effectiveness factors | | | | | |
| 17 | The support for business activities | | | | | |

## Q2- The level of Web site development and use of internet banking services in Bank X of Iran

| | | Not at all | Little | Moderate | Strongly | Do not know |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| 1 | Give information about products etc. | | | | | |
| 2 | Support accessibility of, and automatic orders for services etc. | | | | | |
| 3 | Guarantee the availability of service or product design even before request | | | | | |
| 4 | Applicability of mass customization | | | | | |
| 5 | Offer customized and individualized attention | | | | | |
| 6 | Support customers to choose the products for themselves | | | | | |
| 7 | Support automatic payments including different types of Fund Transfer, Bill payment and etc. | | | | | |
| 8 | On-time products delivery | | | | | |
| 9 | Build IT in the products and services | | | | | |
| 10 | Control of service and product quality | | | | | |
| 11 | Identify market segments | | | | | |
| 12 | Support after sales service | | | | | |
| 14 | Offer customers administrative support, e.g. to manage finance | | | | | |
| 15 | Handling customers' complaints | | | | | |
| 16 | Offer customers training to use IT systems or products | | | | | |
| 17 | Involve customers in the product design and customization | | | | | |

## Q3- The managerial evaluation of existing internet banking Web site in Domestic Marketplace

| | | Strongly Disagree | Disagree | Moderate | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| 1 | Bank uses its web site to provide evidence of informational service transactions. | | | | | |
| 2 | Bank uses its web site to help make tangible the yet to be performed domestic service. | | | | | |
| 3 | Bank uses its web site to provide samples of the domestic services. Bank uses its Web site to help customers remember and communicate the positive elements of the domestic service. | | | | | |
| 4 | Bank uses its Web site to provide a(n) (individually) customized domestic service. Bank uses its Web site to enable the customer to become a co producer of domestic service. | | | | | |
| 5 | Bank uses its web site to provide a service interface that is simple and intuitive to use. | | | | | |
| 6 | Bank uses its web site to produce domestic service innovations. | | | | | |
| 7 | Bank uses its web site to provide person-to-person interaction for the customer. | | | | | |
| 8 | Bank uses its web site to automate its domestic service. | | | | | |
| 9 | Bank uses its web site to provide customers with the option of different versions of the site in terms of language and layout. | | | | | |
| 10 | Bank uses its web site to help reduce customer errors. | | | | | |
| 11 | Bank uses its web site to provide a consistent quality of domestic service offerings. | | | | | |
| 12 | Bank uses its web site to conduct domestic market research. | | | | | |
| 13 | Bank uses its Web site to elicit feedback from customers on its services. | | | | | |
| 14 | Bank uses its Web site to facilitate feedback on service quality. | | | | | |
| 15 | Bank uses its Web site to manage the supply of its domestic service. | | | | | |
| 16 | Bank uses its Web site to manage the demand for its domestic services. | | | | | |

## Q4- The managerial evaluation of existing internet banking Web site in International Marketplace

| | | Strongly Disagree | Disagree | Moderate | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| 1 | Bank uses its web site to provide evidence of informational service transactions. | | | | | |
| 2 | Bank uses its web site to help make tangible the yet to be performed international service. | | | | | |
| 3 | Bank uses its web site to provide samples of the international services. Bank uses its Web site to help customers remember and communicate the positive elements of the international service. | | | | | |
| 4 | Bank uses its Web site to provide a(n) (individually) customized international service. Bank uses its Web site to enable the customer to become a co producer of international service. | | | | | |
| 5 | Bank uses its web site to provide a service interface that is simple and intuitive to use. | | | | | |
| 6 | Bank uses its web site to produce international service innovations. | | | | | |
| 7 | Bank uses its web site to provide person-to-person interaction for the customer. | | | | | |
| 8 | Bank uses its web site to automate its international service. | | | | | |
| 9 | Bank uses its web site to provide customers with the option of different versions of the site in terms of language and layout. | | | | | |
| 10 | Bank uses its web site to help reduce customer errors. | | | | | |
| 11 | Bank uses its web site to provide a consistent quality of international service offerings. | | | | | |
| 12 | Bank uses its web site to conduct international market research. | | | | | |
| 13 | Bank uses its Web site to elicit feedback from customers on its services. | | | | | |
| 14 | Bank uses its Web site to facilitate feedback on service quality. | | | | | |
| 15 | Bank uses its Web site to manage the supply of its international service. | | | | | |
| 16 | Bank uses its Web site to manage the demand for its international services. | | | | | |

## Q5- The expected contribution of the internet banking services Web site

| | | Not at all | Little | Moderate | Strongly | Do not know |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| 1 | Support after sales service | | | | | |
| 2 | Control of service and product quality | | | | | |
| 3 | Offer customers administrative support, e.g. to manage finance | | | | | |
| 4 | Support automatic payments | | | | | |
| 5 | Give information about products etc. | | | | | |
| 6 | Support accessibility of, and automatic orders for services etc. | | | | | |
| 7 | Guarantee the availability of service or product design even before request | | | | | |
| 8 | Involve customers in the product design and customization | | | | | |
| 9 | Support customers to choose the products for themselves | | | | | |
| 10 | Applicability of mass customization | | | | | |
| 11 | Offer customized and individualized attention | | | | | |
| 12 | Identify market segments | | | | | |
| 13 | Handling customers' complaints | | | | | |
| 14 | Build IT in the product and services | | | | | |
| 15 | On-time products delivery | | | | | |
| 16 | Offer customers training to use your IT systems or products | | | | | |

## Q6- Main problems in developing internet banking applications

| | | Not at all | Little | Moderate | Strongly | Do not know |
|---|---|---|---|---|---|---|
| **Row** | **Items** | **1** | **2** | **3** | **4** | **5** |
| 1 | Functionality | | | | | |
| 2 | Data security and Reliability | | | | | |
| 3 | Customers do not have access to networks | | | | | |
| 4 | Lack of customer confidence in using the systems | | | | | |
| 5 | Do not know customers' requirements | | | | | |
| 6 | Usability | | | | | |
| 7 | Performance | | | | | |
| 8 | Not confident for the value for money retention of such systems | | | | | |
| 9 | Lack of know-how in the bank | | | | | |
| 10 | Lack of employee confidence | | | | | |

## List of Participants

| | Participant Name | Position | Bank | |
|---|---|---|---|---|
| 1 | Dr. [Name] | Chairman & Managing director | Agricultural Bank of Iran | ✓ |
| 2 | Mr. [Name] | Member of board | Agricultural Bank of Iran | ✓ |
| 3 | Mr. [Name] | Member of board | Agricultural Bank of Iran | ✓ |
| 4 | Dr. [Name] | Member of board | Agricultural Bank of Iran | ✓ |
| 5 | Mr. [Name] | Marketing Executive Manager | Agricultural Bank of Iran | ✓ |
| 6 | Mr. [Name] | IT Executive Manager | Agricultural Bank of Iran | ✓ |
| 7 | Dr. [Name] | Manager of ebanking Dept. | Agricultural Bank of Iran | ✓ |
| 8 | Mr. [Name] | Manager of Card management Dept. | Agricultural Bank of Iran | ✓ |
| 9 | Mr. [Name] | Manager of Computer Dept. | Agricultural Bank of Iran | ✓ |
| 10 | Mr. [Name] | Manager of Core System Dept. | Agricultural Bank of Iran | ✓ |
| 11 | Mr. [Name] | Manager of Accounting Dept. | Agricultural Bank of Iran | ✓ |
| 12 | Mr. [Name] | IT Expert | Agricultural Bank of Iran | ✓ |
| 13 | Mrs. [Name] | Call Centre Manager | Agricultural Bank of Iran | ✓ |
| 14 | Mr. [Name] | Manager of Marketing Dept. | Agricultural Bank of Iran | ✓ |
| 15 | Mr. [Name] | Manager of Information Dept. | Agricultural Bank of Iran | ✓ |
| 16 | Dr. [Name] | IT Consultant | Agricultural Bank of Iran | ✓ |
| 17 | Dr. [Name] | Risk Manager | Agricultural Bank of Iran | ✓ |
| 18 | Mr. [Name] | Central Branch Manager Dept. | Agricultural Bank of Iran | ✓ |
| 19 | Dr. [Name] | Manager of Research | Agricultural Bank of Iran | ✓ |
| 20 | Mr. [Name] | IT Consultant | Agricultural Bank of Iran | ✓ |
| 21 | Mr. [Name] | IT Consultant | Agricultural Bank of Iran | ✓ |
| 22 | Mr. [Name] | Manager of ATM Dept. | Agricultural Bank of Iran | ✓ |
| 23 | Mr. [Name] | IT Consultant | Agricultural Bank of Iran | ✓ |
| 24 | Dr. [Name] | Chairman & Managing director | Export Development Bank | ✓ |
| 25 | Mr. [Name] | Member of board | Export Development Bank | ✓ |
| 26 | Dr. [Name] | Member of board | Export Development Bank | --- |
| 27 | Mr. [Name] | Member of board | Export Development Bank | --- |
| 28 | Mr. [Name] | Member of board | Export Development Bank | --- |
| 29 | Mr. [Name] | Manager of Computer Dept. | Export Development Bank | ✓ |
| 30 | Mr. [Name] | Manager of Bill payment Dept. | Export Development Bank | ✓ |
| 31 | Mr. [Name] | Manager of Customer Service Dept. | Export Development Bank | ✓ |
| 32 | Mr. [Name] | Chairman & Managing director | Saderat Bank of Iran | --- |
| 33 | Mr. [Name] | Member of board | Saderat Bank of Iran | ✓ |
| 34 | Mr. [Name] | Member of board | Saderat Bank of Iran | --- |
| 35 | Mr. [Name] | Member of board | Saderat Bank of Iran | --- |
| 36 | Mr. [Name] | Member of board | Saderat Bank of Iran | --- |
| 37 | Mr. [Name] | Manager of Computer Dept. | Saderat Bank of Iran | ✓ |
| 38 | Mr. [Name] | Manager of ATM Dept. | Saderat Bank of Iran | ✓ |

## Appendix B: Customer Questionnaire Construction

Section I. **Demographics, Knowledge, Usage and Adoption behavior**

**Gender:** Male ☐ Female ☐

**Age Group:** Under 35 ☐ 35 to 50 ☐ Over 50 ☐

**Education:** High school or less ☐ Bachelor's degree ☐ MSc or higher ☐

**Customer type:** Individual ☐ Business ☐

**Number of transactions per month:**
Under 10 Txns ☐ 10-30 Txns ☐ 31 Txns and above ☐

**Transactions amounts (RLS.):**
Under 100 K ☐ 101-500 K ☐ 501-999 K ☐

10-30 M ☐ 31-50 M ☐ 51 M and above ☐

**1-** Do you know that currently, Internet banking service is delivered by your bank?
Bank offers ☐

Bank does not offer ☐

Do not know if bank offers ☐

**2-** Do you know that Internet banking service will be delivered by your bank?
Bank will offer ☐

Bank will not offer ☐

Do not know if bank offers in future ☐

**3-** Do you use currently Internet banking service?
Yes ☐

No ☐

Occasionally ☐

**4-** Will you intend to use the Internet banking service in future?
Yes ☐

No ☐

Depend on situation ☐

**5-** By using the Internet banking Web site, which services do you mostly use? (Multiple choice)

**Basic Edition**

Marketing Services ☐
(Including Service Terms and Conditions, New Product/ Services, Customer Feedback)

Balance Enquiry ☐ Average Balance Enquiry ☐

Statement Enquiry ☐ Account to Account Transfer ☐

Due Installments Enquiry (Both Remaining and Past Dues) ☐

Statement Request (By email, fax, mail) ☐

Own cheque Status ☐ Outward Clearing Cheque Status ☐

**Classic Edition**

Cheque Book Order ☐ Report Lost or Stolen Cheque ☐

Card Facilities (Debit/Credit) ☐

Exchange Rates (Both Cash and Transfer) ☐

Change PINs (IVR, Internet banking) ☐

FAQ and Contact Information ☐

Sandbox Testing Area ☐

**Gold Edition**

Remittance Order ☐ Bill Payment ☐

Standing Order ☐ Sweep ☐

Bonds Order ☐ Stock Order ☐

Transaction Clearing Confirmation ☐

Transaction Confirmation Feedback Loop ☐

Integrated email to payment Recipients ☐

Budgeting Worksheets ☐

Section II. **Customer perceived attributes Internet banking service**

(The following questions are to be answered on a 5-point Likert Scale: Strongly disagree, Disagree, Moderate, Agree, Strongly agree)

**Ease of use:**

**6-** I think, the Internet is usually available so, the use of Internet banking will be easy
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**7-** Learning to use the Internet banking is easy
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**8-** It will be easy for me to became skillful at using the Internet banking
**9-** Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**Usefulness:**

**10-** The Internet banking gives more control
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**11-** In general, I see benefits from using technological products
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**12-** Using Internet banking makes doing my banking transactions easier
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**Need for Interaction:**

**13-** I will choose Internet banking to avoid interaction with bank's employees
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**13-** The employees at my bank do things for me than Internet can not
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**14-** Interaction with employees, gives me more confidence for banking txns
(I have more trust to employees rather than Internet banking)
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**Risk**

**15-** I know that there is no risk, to use Internet banking
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**16-** I will feel safe and secure to conduct my banking Txns through the Internet
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**17-** I will feel a little danger when I use Internet banking
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**Costs:**

**18-** All the services which deliver in the ***Classic Edition***, should be free of charge
Str. Dis.☐ Dis.☐ Mod.☐ Agr.☐Str. Agr.☐

**19-** All the services which deliver in the ***Gold Edition***, should be free of charge
Str. Dis. ☐ Dis. ☐ Mod. ☐ Agr. ☐ Str. Agr. ☐

**20-** I prefer to intend to the branch, instead of paying fee in Internet
Str. Dis. ☐ Dis. ☐ Mod. ☐ Agr. ☐ Str. Agr. ☐

Section III. **Customer perceived attitude toward Internet banking service**

Low intensity (1)……**…….....** High intensity (5)

**21-** How good or bad do you feel about using Internet banking?

a. Absolutely good
1. ☐ ☐ ☐ ☐ ☐

b. Good
1. ☐ ☐ ☐ ☐ ☐

c. Moderate
1. ☐ ☐ ☐ ☐ ☐

d. Bad
1. ☐ ☐ ☐ ☐ ☐

e. Very bad
1. ☐ ☐ ☐ ☐ ☐

**22-** How pleasant or unpleasant will be to use Internet banking?

f. Very pleasant
1. ☐ ☐ ☐ ☐ ☐

g. Pleasant
1. ☐ ☐ ☐ ☐ ☐

h. Moderate
1. ☐ ☐ ☐ ☐ ☐

i. Unpleasant
1. ☐ ☐ ☐ ☐ ☐

j. Very unpleasant
1. ☐ ☐ ☐ ☐ ☐

**23-** How would you say that you like or dislike using Internet banking?

k. Very like
1. ☐ ☐ ☐ ☐ ☐

m. Like
1. ☐ ☐ ☐ ☐ ☐

n. Moderate
1. ☐ ☐ ☐ ☐ ☐

p. Dislike
1. ☐ ☐ ☐ ☐ ☐

s. Very dislike
1. ☐ ☐ ☐ ☐ ☐

## Appendix C: Banks' Profile

Since the focus group of this study is three large retail banks in Iran, in this section the overall profile of each bank presents.

## ☑ Bank Keshavarzi (BK)

### Background

Bank Keshavarzi (BK) was founded in 1933 as Farming and Industrial Bank. Today, with more than seventy years of experience in agricultural financing, BK is one of the ten major banks of the Islamic Republic of Iran. As a full service specialized bank, it provides the whole spectrum of banking services through its extensive integrated network of branches across the country.

Of the one thousand best world banks nominated for the year 2003, Bank Keshavarzi has been ranked 212$^{th}$, when it is the 9$^{th}$ in the Middle East and the best amongst Iranian banks for 3 successive years (2003-2005), writes The Banker.

### Mission

The mission of the BK is to provide credit facilities for agricultural development and other related activities. In the past, BK pursued the same mission by relying on capital and support provided by the state. Today economic conditions, however, have changed demanding reforms in the banking system. The government's limited budget and a higher level of competition among national banks necessitate that financial resources be secured through banking operations and from deposits and popular savings.

Today, the three important BK commitments are:

- Innovation and continuous improvement in quality of services;
- Creating customer values and securing customer satisfaction; and
- Full execution of Islamic banking process and business in the basis of new technology-based systems.

## Personnel and Branches

Presently, the organizational structure of Bank Keshavarzi is comprised of twenty-seven general departments at the head office, thirty-three provincial directorates, and 1820 branches all over the country. Overall, the bank has 14,194 employees who have been selected for their expertise and experience.

## Bank Keshavarzi and Electronic Banking Services

The emergence of electronic banking has changed the way people conduct their banking business. With information and communication technology (ICT) coming to the fore, BK has been able to offer a variety of electronic products. Improvement of banking services' quality and automation of branches were further pursued in 2002-03 and it succeeded in giving such coverage to 1,806 branches that account for 99.2% of its whole branch network. By the end of this reporting period, BK's electronic services include:

### Telephone Banking

This service was initially activated in 430 branches by year's end and is recently updated. It provides customers with instant access, via telephone or fax, to information on their accounts such as balance, profit earned on deposits, check clearance, transfer of funds, request for checkbook delivery. It is now operating in 860 select branches.

### Ista-Bank

Customers can check the balance of their accounts themselves on the computers installed inside each branch.

### Mehr Debit Card

300 branches of Bank Keshavarzi are now on-line with the Mehr system. Holders of Mehr card can withdraw from or deposit money in their account at any branch equipped with ATM, PIN PAD or at any POS round the clock. A new product is the Mehr current account which, in combination with the Mehr Card, offers a

greater number of services. By the end of this reporting year, 71420 Mehr current accounts to the tune of RLS. 102,516 million had been opened.

### SHETAB (National Electronic Payment System)

For the first time in the history of the banking system in Iran, holders of smart cards from Bank Keshavarzi, Bank Saderat, Export Development Bank and Bank Saman can benefit from shared ATM/POS outlet network.

### Voice Mail System

It has been launched for senior/middle management and experts to reduce inter-office correspondence and expedite customer care and colleague connection, while clients and managers are also linked.

### Dial Information Center

Customers and BK staff may obtain updated information on branches, exchange rate, projects, etc., directly or via fax.

### Bilingual Intranet

www.agri-bank.com provides information on services, organization structure, regulations, annual report, branches, etc.

### Check fax

It facilitates cashing of Bank Keshavarzi checks across the country on the same day.

### Queue Management

The system was installed in select branches in Tehran in the course of this year in a bid to prevent crowding in front clerks and improve their efficiency and ensure customer satisfaction. More branches are to be equipped with this system in the year to come.

### 24/7 Call Center

The human-based, expert-oriented center is there to offer consultancy services and professional directions on conventional bank operations, while it undertakes to assist clients with their inquiries.

## ☑ Bank Saderat Iran (BSI)

## Background

Bank Saderat Iran (BSI) officially commenced operation on 13 November 1952 with a board of three directors and 20 employees. From early on BSI was putting emphasis on rapidly expanding its branch network, and today operates the largest number of branches in Iran, which currently stands at 3,248 branches. Besides, BSI has over 200 affiliated companies. Today, BSI has acquired a leading position in the retail banking area and plays a significant role in the development of Iran's economy BSI's subsidiaries and affiliated companies are major contributors to the expansion of the country's industry, trade and service sectors.

With half a century of banking experience in Iran and abroad, BSI is in a position to offer quality financial services to its customers and well prepared to face the challenges lying ahead.

## Mission

The Bank's mission is to further the economic development of Iran and to serve Iranian citizens and the Iranian business community by offering state-of-the-art banking services in-and outside the country.

The five basic principles of its business conduct are: Leading by Example, Seizing Opportunities, Creating Value, Thinking Internationally, and Investing in People.

## Personnel and Branches

With over 3200 branches within and 25 branch offices abroad, Bank Saderat Iran (BSI) is the leading bank in Middle East in terms of branches network.

BSI's branch offices abroad operate in the following cities around the globe: Paris, Hamburg, Frankfurt, London, Athens, Dubai, Abu Dhabi, Sharjah, Doha, Muscat, Ajman, Fujairah, Beirut, Saida, Manama, Tashkent and Ashkhabad. Overall, the bank has 30,806 employees.

## Bank Saderat Iran and Electronic Banking Services

BSI has taken an important sep towards modern banking by setting up an online or real Time system in the year 2000, with the objective of offering even better services to its clients. This system is called the *Sepehr* System, the main objective of which is to increase the speed of banking operations. There are currently some 500 branches offering Sepehr services and BSI plans to enable all its existing branches to offer this system. The above services include Sepehr Accounts and the Sepehr Card (which can be used in ATM machines). By opening a Sepehr account, one can take advantages of the following services:

• Depositing or withdrawing from accounts without a need to be present at the branch where the account is held
• Accessing account information 24 and 7 days per week
• Ordering bank statements

At the moment, BSI is equipped with over 200 ATM machines almost 400 pin pad machines and has offered more than 40,000 Sepehr cards. However, BSI plans to increase the number machines by 250 per year, every year for the next 4 years. In addition, the Bank aims to install 2000 POS machines every year for the next four years. Finally, the Banks plans for offering e-banking or home banking will be made possible through the Sepehr System.

## ☑ Export Development Bank of Iran (EDBI)

## Background

Export Development Bank of Iran (EDBI) was established on 10th July 1991, with a paid-up capital of RLS 50 billion, in order to provide the necessary possibilities for the expansion of non-oil export and encourage economic and commercial interchanges with the other countries. An investigation into the commercial status of the countries having healthy position in international trade and commerce, leads this bank to the fact that an important factor in their success is the proper utilization of the necessary instruments and mechanisms in order to secure financial means for the expansion of exports. Without the valuable contribution of specialized institutions carrying out such duties, those countries would not have been so successful in international arena.

The Third Five-Year Economic, Social and Cultural Development Plan of the country, laid a great stress on the expansion of non-oil exports and introduced it as an important factor for Iran' economic growth.

Thus the active presence of the Export Development Bank of Iran in international markets became necessary.

Accordingly, this Bank has tried to offer fast, efficient and reliable services and a comprehensive range of export financing programs to both exporters and foreign buyers of Iranian goods and services.

Today Export Development Bank of Iran has achieved its objectives in increasing the number of the institutions utilizing the services of this Bank. In this direction, the Export Development Bank of Iran promotes the non-oil exports, securing the foreign exchange necessities of the Third Five-Year Economic, Social and Cultural Development Plan of the Islamic Republic of Iran.

## Mission

The Bank's mission is in Export Finance with four key areas:

• Provision of credit facilities for financing project that promote exports using Buyer's credit, Supplier's credit and Working Capital loans to exporters
• Provision of Letter of Guarantee to afford exporters
• Documentary Credit processing
• Treasury operations for managing the foreign exchange resources

## Personnel and Branches

Export Development Bank of Iran (EDBI) with the aim of providing facilities for the exporters in the provinces has established its agencies in the center of the provinces like the other EXIM banks. Therefore, the exporters are able to present their application and the other necessary documents to this bank for the loans and their repayment, export obligations, receiving foreign exchange resulted from the exports, sale of foreign exchange resulted from the exports, opening letters of credit, being informed from the polices of the bank and the Government regarding the non-oil exports, without the need to refer to Tehran.

Accordingly the agencies of this bank are ready to present services to their customers in Astara, Urumieh, Isfahan, Ahwaz, Boushehr, Tabriz, Chabahar, Rasht, Zanjan, Sari, Shiraz, Gheshm, Ghom, Khoramabad, Kerman, Kernamshah, Kish, Gorgan, Meshed, Hamedan and Yazd, through its 28 branches across the country and 1 branch in Kasaghistan.

Overall, the bank has 748 employees.

## Export Development Bank Iran and Electronic Banking Services

### Telephone Banking

EDBI telephone banking system is an important information base. This system works on an on-line and real-time basis, all 24-hours. The bank customers can use this system to obtain the following information:

- Obtaining information about their account balance
- Obtaining information about the last three operations

- Obtaining the last 20 transactions through fax
- Changing their password
- Obtaining information about the state and whereabouts of a specific cheque
- Transferring cash between a customer's accounts.

### Mobile Banking

Sending Statements about accounts through the cell phone is another one of our information bases. Through this system , the customers can obtain information about transactions done through their accounts on a daily basis.

### Email Message System

Email Message System is another one of our information bases. Through this system the customers will receive statements about their accounts. In other words all transactions done through their accounts will be sent to their E-mail address.

### Internet Statement System

Internet Statement System is another one of our information bases. Through this system the customers will receive statements about their accounts. In other words all transactions done through their accounts can be seen on the internet.

**Table 31: Financial highlights of studied banks**

**(Million RLS.)**

| | BK | BSI | EDBI |
|---|---|---|---|
| Total income | 3,621,884 | 7,490,107 | 466,908 |
| Total costs | 3,094,564 | 6,783,752 | 250,402 |
| Net profit after tax | 443,410 | 559,653 | 162,435 |
| Total deposits | 21,663,857 | 31,719,626 | 2,153,492 |
| Total credit facilities | 14,925,877 | 25,723,749 | 3,623,442 |
| Staff | 14,194 | 30,806 | 748 |
| Branches | 1820 | 3248 | 28 |
| International branches | --- | 17 | 1 |

## Appendix D: Data Response Set

The response data set from the questionnaires-B are presented below. The questionnaire has 23 questions which are divided into three sections. Section one, includes demographics and knowledge information with 5 questions. In section two, the questions are to deal with 5 main attributes which are important for the customers. The number of questions in this section is related to 5 main attributes which are important for the customers. The number of questions in this section is 15. Section three with 3 questions which lead to customers' attitudes toward Internet banking. The survey was done among a sample size of 215 customers. In the table below, respondents' numbers are shown in the left most columns. The column q1, q2, …., q23 shows the number of question. Each of the respondent's answer to a specific question that matches from 1 to 5 on the 5-point Likert scale is given in rows.

# Data Set – Section 1

| Ag-e Group | Education | Cus. Type | Txn Group | Txn Am. Group | q1 | q2 | q3 | q4 | q5 |
|---|---|---|---|---|---|---|---|---|---|
| Ag-1 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T3 | A6 | c | c | b | c | Gold |
| Ag-2 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A4 | a | a | a | a | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A4 | a | a | c | a | Gold |
| Ag-1 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A4 | a | a | c | a | Gold |
| Ag-1 | B | Bus. | T2 | A3 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A3 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A3 | a | a | b | c | Gold |
| Ag-2 | B | Bus. | T1 | A3 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | a | a | c | a | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T1 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T1 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T1 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T1 | A2 | b | c | b | c | Basic |
| Ag-3 | B | Ind. | T1 | A1 | b | c | b | c | Basic |
| Ag-3 | B | Ind. | T2 | A3 | b | c | b | c | Basic |
| Ag-1 | H | Ind. | T2 | A4 | c | c | b | c | Classic |
| Ag-1 | H | Ind. | T2 | A4 | c | c | b | c | Gold |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ag-2 | H | Ind. | T2 | A3 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A3 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A3 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A4 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A2 | c | c | b | c | Basic |
| Ag-2 | H | Ind. | T3 | A3 | b | c | b | c | Classic |
| Ag-3 | H | Ind. | T3 | A2 | c | c | b | c | Basic |
| Ag-3 | H | Ind. | T3 | A2 | c | c | b | c | Basic |
| Ag-3 | H | Ind. | T3 | A3 | c | c | b | c | Gold |
| Ag-3 | H | Ind. | T3 | A2 | c | c | b | c | Basic |
| Ag-1 | MS | Bus. | T2 | A5 | c | c | b | c | Gold |
| Ag-1 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-1 | MS | Bus. | T2 | A6 | a | a | c | a | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | a | a | a | a | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A4 | a | a | c | a | Gold |
| Ag-3 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | MS | Bus. | T2 | A6 | c | c | b | c | Gold |
| Ag-3 | MS | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A6 | a | a | a | a | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-1 | B | Bus. | T2 | A6 | b | c | b | c | Gold |

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|---|---|---|---|---|---|---|---|---|---|
| Ag-1 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A6 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A3 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-2 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A5 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A5 | c | c | b | c | Gold |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Ag-3 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A5 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Bus. | T2 | A6 | b | c | b | c | Gold |
| Ag-3 | B | Bus. | T3 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T1 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T1 | A4 | c | c | b | c | Classic |
| Ag-3 | B | Ind. | T1 | A5 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A5 | b | c | b | c | Gold |
| Ag-3 | B | Ind. | T3 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T3 | A3 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | B | Ind. | T3 | A4 | c | c | b | c | Gold |
| Ag-1 | H | Ind. | T1 | A4 | b | c | b | c | Basic |
| Ag-1 | H | Ind. | T2 | A3 | b | c | b | c | Classic |
| Ag-1 | H | Ind. | T2 | A2 | b | c | b | c | Basic |
| Ag-1 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-1 | H | Ind. | T3 | A3 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A2 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A3 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A3 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T2 | A2 | c | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A2 | c | c | b | c | Basic |
| Ag-2 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T1 | A2 | c | c | b | c | Basic |
| Ag-2 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-2 | H | Ind. | T3 | A4 | b | c | b | c | Gold |
| Ag-3 | H | Ind. | T1 | A2 | c | c | b | c | Basic |
| Ag-3 | H | Ind. | T3 | A2 | c | c | b | c | Classic |
| Ag-3 | H | Ind. | T2 | A4 | c | c | b | c | Gold |
| Ag-3 | H | Ind. | T3 | A4 | c | c | b | c | Gold |

## Data Set – Section 2

| Ag-e Group | Education | Cus. Type | q6 | q7 | q8 | q9 | q10 | q11 | q12 | q13 | q14 | q15 | q16 | q17 | q18 | q19 | q20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag-1 | MS | Bus. | 1 | 3 | 4 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-2 | MS | Bus. | 2 | 4 | 5 | 4 | 4 | 4 | 2 | 5 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 3 | 4 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | MS | Bus. | 2 | 3 | 5 | 4 | 3 | 3 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-2 | MS | Bus. | 2 | 4 | 5 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | MS | Bus. | 1 | 3 | 3 | 4 | 3 | 3 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-2 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 5 | 4 | 4 | 4 | 2 | 5 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 3 | 3 | 1 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 2 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 1 | 4 | 4 | 3 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 2 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 4 | 2 |
| Ag-1 | B | Bus. | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 4 | 4 | 2 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 11 | 5 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 1 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 3 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 3 | 3 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-1 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 3 |
| Ag-1 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 2 | 3 | 2 | 2 | 4 | 3 | 3 | 3 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag-2 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 2 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 3 | 3 | 4 | 4 | 4 | 3 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 2 | 3 | 3 | 4 | 3 | 3 | 3 |
| Ag-3 | H | Ind. | 1 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | H | Ind. | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | H | Ind. | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-3 | H | Ind. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-1 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-1 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 3 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 3 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 2 | 5 | 3 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 3 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | MS | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 3 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 3 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 3 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 3 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 3 | 5 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 3 | 5 | 3 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 2 | 5 | 2 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 3 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-3 | MS | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | MS | Bus. | 1 | 5 | 2 | 4 | 4 | 4 | 1 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-1 | B | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 1 | 5 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-1 | B | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 2 |
| Ag-1 | B | Bus. | 3 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 2 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-1 | B | Bus. | 3 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-1 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 1 | 4 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 | 4 | 5 | 2 |
| Ag-1 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 3 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-1 | B | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 1 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-1 | B | Bus. | 2 | 5 | 5 | 4 | 4 | 4 | 2 | 3 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag-1 | B | Bus. | 1 | 4 | 4 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 1 | 2 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 2 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 3 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 2 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 3 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 5 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-2 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-3 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag-3 | B | Bus. | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 2 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 3 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Bus. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 2 | 2 | 4 | 4 | 5 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 4 |
| Ag-3 | B | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-3 | B | Ind. | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Ind. | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | B | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-3 | B | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-1 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 3 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | H | Ind. | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-1 | H | Ind. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 2 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 3 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 5 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 4 | 4 | 3 | 3 | 4 | 3 | 5 | 5 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 4 | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |
| Ag-2 | H | Ind. | 1 | 3 | 2 | 3 | 2 | 2 | 2 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-2 | H | Ind. | 2 | 3 | 2 | 4 | 4 | 4 | 1 | 5 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | H | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 4 | 3 | 3 | 4 | 3 | 3 | 4 |
| Ag-3 | H | Ind. | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 4 | 4 | 2 | 2 | 4 | 3 | 3 | 5 |
| Ag-3 | H | Ind. | 1 | 3 | 2 | 3 | 3 | 3 | 1 | 2 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Ag-3 | H | Ind. | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 4 | 2 | 2 | 4 | 3 | 3 | 4 |

# Data Set – Section 3

| Response | Gender | Ag-e Group | Education | Cus. Type | Txn Group | Txn Am. Group | q21 | Intensity | q22 | Intensity | q23 | Intensity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | F | Ag-1 | MS | Bus. | T3 | A5 | a | 5 | f | 5 | k | 5 |
| 2 | F | Ag-2 | MS | Bus. | T3 | A6 | a | 5 | g | 4 | m | 3 |
| 3 | F | Ag-2 | MS | Bus. | T3 | A6 | a | 5 | g | 4 | m | 3 |
| 4 | F | Ag-2 | MS | Bus. | T3 | A5 | a | 4 | h | 4 | n | 4 |
| 5 | F | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | g | 5 | m | 4 |
| 6 | F | Ag-2 | MS | Bus. | T2 | A4 | b | 5 | h | 5 | m | 4 |
| 7 | F | Ag-2 | MS | Bus. | T2 | A6 | a | 4 | h | 4 | k | 5 |
| 8 | F | Ag-2 | MS | Bus. | T2 | A6 | b | 5 | g | 4 | m | 3 |
| 9 | F | Ag-2 | MS | Bus. | T2 | A6 | b | 5 | h | 5 | m | 4 |
| 10 | F | Ag-3 | MS | Bus. | T2 | A4 | b | 5 | h | 4 | m | 3 |
| 11 | F | Ag-1 | B | Bus. | T2 | A4 | b | 4 | h | 4 | m | 3 |
| 12 | F | Ag-1 | B | Bus. | T2 | A4 | b | 5 | g | 5 | k | 4 |
| 13 | F | Ag-1 | B | Bus. | T2 | A4 | b | 5 | g | 5 | k | 5 |
| 14 | F | Ag-1 | B | Bus. | T2 | A4 | b | 5 | g | 4 | m | 3 |
| 15 | F | Ag-1 | B | Bus. | T2 | A4 | b | 5 | g | 5 | m | 4 |
| 16 | F | Ag-1 | B | Bus. | T2 | A4 | b | 4 | h | 4 | n | 3 |
| 17 | F | Ag-1 | B | Bus. | T2 | A3 | b | 4 | g | 4 | m | 4 |
| 18 | F | Ag-2 | B | Bus. | T2 | A5 | a | 4 | h | 4 | k | 4 |
| 19 | F | Ag-2 | B | Bus. | T2 | A3 | b | 5 | g | 5 | m | 3 |
| 20 | F | Ag-2 | B | Bus. | T2 | A4 | b | 5 | h | 5 | m | 4 |
| 21 | F | Ag-2 | B | Bus. | T2 | A4 | b | 5 | h | 5 | m | 4 |
| 22 | F | Ag-2 | B | Bus. | T2 | A3 | b | 5 | h | 5 | k | 5 |
| 23 | F | Ag-2 | B | Bus. | T1 | A3 | b | 5 | h | 4 | m | 3 |
| 24 | F | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 25 | F | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 3 |
| 26 | F | Ag-2 | B | Bus. | T3 | A4 | b | 4 | h | 4 | m | 4 |
| 27 | F | Ag-2 | B | Bus. | T3 | A6 | a | 5 | f | 4 | k | 4 |
| 28 | F | Ag-2 | B | Bus. | T3 | A5 | a | 4 | f | 4 | k | 5 |
| 29 | F | Ag-2 | B | Bus. | T3 | A5 | a | 5 | g | 4 | m | 4 |
| 30 | F | Ag-2 | B | Bus. | T3 | A5 | a | 5 | f | 5 | k | 4 |
| 31 | F | Ag-2 | B | Bus. | T3 | A5 | a | 5 | h | 4 | m | 4 |
| 32 | F | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | k | 5 |
| 33 | F | Ag-2 | B | Bus. | T3 | A6 | b | 5 | h | 4 | m | 3 |
| 34 | F | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 35 | F | Ag-2 | B | Bus. | T3 | A5 | a | 5 | g | 5 | k | 4 |
| 36 | F | Ag-2 | B | Bus. | T3 | A6 | b | 5 | h | 4 | m | 4 |
| 37 | F | Ag-2 | B | Bus. | T3 | A5 | a | 5 | h | 4 | n | 4 |
| 38 | F | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 3 |
| 39 | F | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | k | 4 |
| 40 | F | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | m | 3 |
| 41 | F | Ag-2 | B | Bus. | T3 | A5 | a | 3 | g | 3 | n | 4 |
| 42 | F | Ag-2 | B | Bus. | T3 | A4 | b | 4 | g | 4 | m | 3 |
| 43 | F | Ag-2 | B | Bus. | T1 | A4 | b | 4 | h | 4 | m | 4 |
| 44 | F | Ag-2 | B | Bus. | T3 | A5 | b | 3 | h | 3 | n | 4 |
| 45 | F | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | k | 4 |
| 46 | F | Ag-2 | B | Bus. | T2 | A5 | c | 3 | g | 3 | n | 2 |
| 47 | F | Ag-2 | B | Bus. | T1 | A4 | c | 3 | g | 3 | n | 2 |
| 48 | F | Ag-3 | B | Bus. | T3 | A4 | b | 4 | h | 4 | k | 4 |
| 49 | F | Ag-3 | B | Bus. | T1 | A4 | c | 2 | g | 4 | n | 4 |
| 50 | F | Ag-3 | B | Ind. | T1 | A2 | b | 5 | g | 5 | k | 4 |
| 51 | F | Ag-3 | B | Ind. | T1 | A1 | b | 5 | g | 5 | m | 4 |
| 52 | F | Ag-3 | B | Ind. | T2 | A3 | a | 4 | g | 4 | k | 4 |
| 53 | F | Ag-1 | H | Ind. | T2 | A4 | b | 4 | g | 4 | m | 4 |
| 54 | F | Ag-1 | H | Ind. | T2 | A4 | b | 4 | g | 4 | n | 3 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 55 | F | Ag-2 | H | Ind. | T2 | A3 | b | 5 | h | 5 | m | 4 |
| 56 | F | Ag-2 | H | Ind. | T2 | A3 | b | 4 | h | 4 | m | 4 |
| 57 | F | Ag-2 | H | Ind. | T2 | A4 | a | 5 | h | 4 | k | 4 |
| 58 | F | Ag-2 | H | Ind. | T2 | A3 | b | 3 | h | 3 | n | 2 |
| 59 | F | Ag-2 | H | Ind. | T2 | A4 | b | 4 | g | 4 | m | 4 |
| 60 | F | Ag-2 | H | Ind. | T2 | A2 | c | 3 | h | 3 | n | 4 |
| 61 | F | Ag-2 | H | Ind. | T3 | A3 | b | 4 | g | 3 | n | 3 |
| 62 | F | Ag-3 | H | Ind. | T3 | A2 | b | 3 | g | 3 | n | 2 |
| 63 | F | Ag-3 | H | Ind. | T3 | A2 | c | 2 | h | 3 | m | 4 |
| 64 | F | Ag-3 | H | Ind. | T3 | A3 | b | 3 | h | 3 | m | 3 |
| 65 | F | Ag-3 | H | Ind. | T3 | A2 | c | 2 | h | 3 | p | 4 |
| 66 | M | Ag-1 | MS | Bus. | T2 | A5 | a | 5 | f | 5 | k | 5 |
| 67 | M | Ag-1 | MS | Bus. | T2 | A5 | a | 5 | g | 4 | m | 3 |
| 68 | M | Ag-1 | MS | Bus. | T2 | A6 | a | 5 | g | 4 | m | 3 |
| 69 | M | Ag-2 | MS | Bus. | T2 | A5 | a | 4 | h | 4 | n | 4 |
| 70 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | g | 5 | m | 4 |
| 71 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | h | 5 | m | 4 |
| 72 | M | Ag-2 | MS | Bus. | T2 | A5 | a | 4 | h | 4 | k | 5 |
| 73 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | g | 4 | m | 3 |
| 74 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | h | 5 | m | 4 |
| 75 | M | Ag-2 | MS | Bus. | T2 | A6 | b | 5 | h | 4 | m | 3 |
| 76 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 4 | h | 4 | m | 3 |
| 77 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 5 | g | 5 | k | 4 |
| 78 | M | Ag-2 | MS | Bus. | T3 | A5 | b | 5 | g | 5 | k | 5 |
| 79 | M | Ag-2 | MS | Bus. | T2 | A6 | b | 5 | g | 4 | m | 3 |
| 80 | M | Ag-2 | MS | Bus. | T2 | A6 | b | 5 | g | 5 | m | 4 |
| 81 | M | Ag-2 | MS | Bus. | T2 | A5 | b | 4 | h | 4 | n | 3 |
| 82 | M | Ag-2 | MS | Bus. | T3 | A5 | b | 4 | g | 4 | m | 4 |
| 83 | M | Ag-3 | MS | Bus. | T2 | A6 | a | 4 | h | 4 | k | 4 |
| 84 | M | Ag-3 | MS | Bus. | T2 | A5 | b | 5 | g | 5 | m | 3 |
| 85 | M | Ag-3 | MS | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 86 | M | Ag-3 | MS | Bus. | T2 | A5 | b | 5 | h | 5 | m | 4 |
| 87 | M | Ag-3 | MS | Bus. | T2 | A4 | b | 5 | h | 5 | k | 5 |
| 88 | M | Ag-3 | MS | Bus. | T2 | A5 | b | 5 | h | 4 | m | 3 |
| 89 | M | Ag-3 | MS | Bus. | T3 | A4 | b | 5 | h | 5 | m | 4 |
| 90 | M | Ag-3 | MS | Bus. | T2 | A5 | b | 5 | h | 5 | m | 3 |
| 91 | M | Ag-3 | MS | Bus. | T3 | A5 | b | 4 | h | 4 | m | 4 |
| 92 | M | Ag-3 | MS | Bus. | T3 | A4 | a | 5 | f | 4 | k | 4 |
| 93 | M | Ag-3 | MS | Bus. | T3 | A5 | a | 4 | f | 4 | k | 5 |
| 94 | M | Ag-3 | MS | Bus. | T3 | A4 | a | 5 | g | 4 | m | 4 |
| 95 | M | Ag-3 | MS | Bus. | T3 | A5 | a | 5 | f | 5 | k | 4 |
| 96 | M | Ag-3 | MS | Bus. | T3 | A5 | a | 5 | h | 4 | m | 4 |
| 97 | M | Ag-3 | MS | Bus. | T2 | A6 | a | 4 | h | 4 | k | 5 |
| 98 | M | Ag-3 | MS | Bus. | T3 | A5 | b | 5 | h | 4 | m | 3 |
| 99 | M | Ag-1 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 100 | M | Ag-1 | B | Bus. | T3 | A6 | a | 5 | g | 5 | k | 4 |
| 101 | M | Ag-1 | B | Bus. | T3 | A5 | b | 5 | h | 4 | m | 4 |
| 102 | M | Ag-1 | B | Bus. | T3 | A6 | a | 5 | h | 4 | n | 4 |
| 103 | M | Ag-1 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 3 |
| 104 | M | Ag-1 | B | Bus. | T2 | A5 | a | 4 | h | 4 | k | 4 |
| 105 | M | Ag-1 | B | Bus. | T3 | A5 | a | 4 | h | 4 | m | 3 |
| 106 | M | Ag-1 | B | Bus. | T3 | A6 | a | 3 | g | 3 | n | 4 |
| 107 | M | Ag-1 | B | Bus. | T3 | A5 | b | 4 | g | 4 | m | 3 |
| 108 | M | Ag-1 | B | Bus. | T2 | A5 | b | 4 | h | 4 | m | 4 |
| 109 | M | Ag-1 | B | Bus. | T3 | A5 | b | 3 | h | 3 | n | 4 |
| 110 | M | Ag-1 | B | Bus. | T3 | A6 | a | 4 | h | 4 | k | 4 |
| 111 | M | Ag-1 | B | Bus. | T3 | A5 | c | 3 | g | 3 | n | 2 |
| 112 | M | Ag-1 | B | Bus. | T3 | A5 | c | 3 | g | 3 | n | 2 |
| 113 | M | Ag-1 | B | Bus. | T2 | A6 | b | 4 | h | 4 | k | 4 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114 | M | Ag-1 | B | Bus. | T3 | A5 | c | 2 | g | 4 | n | 4 |
| 115 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | k | 4 |
| 116 | M | Ag-2 | B | Bus. | T3 | A6 | b | 5 | g | 5 | m | 4 |
| 117 | M | Ag-2 | B | Bus. | T3 | A5 | a | 4 | g | 4 | k | 4 |
| 118 | M | Ag-2 | B | Bus. | T3 | A5 | b | 4 | g | 4 | m | 4 |
| 119 | M | Ag-2 | B | Bus. | T3 | A5 | b | 4 | g | 4 | n | 3 |
| 120 | M | Ag-2 | B | Bus. | T3 | A4 | b | 5 | h | 5 | m | 4 |
| 121 | M | Ag-2 | B | Bus. | T2 | A5 | b | 4 | h | 4 | m | 4 |
| 122 | M | Ag-2 | B | Bus. | T2 | A5 | a | 5 | h | 4 | k | 4 |
| 123 | M | Ag-2 | B | Bus. | T3 | A4 | b | 3 | h | 3 | n | 2 |
| 124 | M | Ag-2 | B | Bus. | T3 | A6 | b | 4 | g | 4 | m | 4 |
| 125 | M | Ag-2 | B | Bus. | T3 | A4 | c | 3 | h | 3 | n | 4 |
| 126 | M | Ag-2 | B | Bus. | T3 | A4 | b | 4 | g | 3 | n | 3 |
| 127 | M | Ag-2 | B | Bus. | T3 | A4 | b | 3 | g | 3 | n | 2 |
| 128 | M | Ag-2 | B | Bus. | T3 | A5 | c | 2 | h | 3 | m | 4 |
| 129 | M | Ag-2 | B | Bus. | T3 | A5 | b | 3 | h | 3 | m | 3 |
| 130 | M | Ag-2 | B | Bus. | T2 | A4 | c | 2 | h | 3 | m | 4 |
| 131 | M | Ag-2 | B | Bus. | T3 | A5 | a | 5 | g | 4 | m | 3 |
| 132 | M | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | n | 4 |
| 133 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 134 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 135 | M | Ag-2 | B | Bus. | T2 | A6 | a | 4 | h | 4 | k | 5 |
| 136 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 4 | m | 3 |
| 137 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 138 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 4 | m | 3 |
| 139 | M | Ag-2 | B | Bus. | T2 | A5 | b | 4 | h | 4 | m | 3 |
| 140 | M | Ag-2 | B | Bus. | T3 | A6 | b | 5 | g | 5 | k | 4 |
| 141 | M | Ag-2 | B | Bus. | T3 | A5 | a | 5 | f | 5 | k | 5 |
| 142 | M | Ag-2 | B | Bus. | T3 | A3 | a | 5 | g | 4 | m | 3 |
| 143 | M | Ag-2 | B | Bus. | T3 | A4 | a | 5 | g | 4 | m | 3 |
| 144 | M | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | n | 4 |
| 145 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 146 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 147 | M | Ag-2 | B | Bus. | T2 | A4 | a | 4 | h | 4 | k | 5 |
| 148 | M | Ag-2 | B | Bus. | T3 | A4 | b | 5 | g | 4 | m | 3 |
| 149 | M | Ag-2 | B | Bus. | T3 | A4 | b | 5 | h | 5 | m | 4 |
| 150 | M | Ag-2 | B | Bus. | T2 | A5 | a | 4 | h | 4 | n | 4 |
| 151 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 152 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 153 | M | Ag-2 | B | Bus. | T3 | A5 | a | 4 | h | 4 | k | 5 |
| 154 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 4 | m | 3 |
| 155 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 156 | M | Ag-2 | B | Bus. | T3 | A4 | b | 5 | h | 4 | m | 3 |
| 157 | M | Ag-2 | B | Bus. | T3 | A5 | b | 4 | h | 4 | m | 3 |
| 158 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | k | 4 |
| 159 | M | Ag-2 | B | Bus. | T2 | A5 | b | 5 | g | 5 | k | 5 |
| 160 | M | Ag-2 | B | Bus. | T3 | A4 | b | 5 | g | 4 | m | 3 |
| 161 | M | Ag-2 | B | Bus. | T3 | A5 | b | 5 | g | 5 | m | 4 |
| 162 | M | Ag-2 | B | Bus. | T3 | A5 | b | 4 | h | 4 | n | 3 |
| 163 | M | Ag-2 | B | Bus. | T3 | A5 | b | 4 | g | 4 | m | 4 |
| 164 | M | Ag-3 | B | Bus. | T2 | A4 | b | 5 | h | 5 | m | 4 |
| 165 | M | Ag-3 | B | Bus. | T2 | A5 | b | 5 | h | 4 | m | 3 |
| 166 | M | Ag-3 | B | Bus. | T3 | A4 | b | 4 | h | 4 | m | 3 |
| 167 | M | Ag-3 | B | Bus. | T3 | A4 | b | 5 | g | 5 | k | 4 |
| 168 | M | Ag-3 | B | Bus. | T3 | A5 | b | 5 | g | 5 | k | 5 |
| 169 | M | Ag-3 | B | Bus. | T3 | A4 | b | 5 | g | 4 | m | 3 |
| 170 | M | Ag-3 | B | Bus. | T3 | A4 | b | 5 | g | 5 | m | 4 |
| 171 | M | Ag-3 | B | Bus. | T2 | A4 | b | 4 | h | 4 | n | 3 |
| 172 | M | Ag-3 | B | Bus. | T2 | A5 | b | 4 | g | 4 | m | 4 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 173 | M | Ag-3 | B | Bus. | T3 | A4 | b | 5 | g | 5 | m | 4 |
| 174 | M | Ag-3 | B | Bus. | T3 | A5 | b | 5 | h | 5 | m | 4 |
| 175 | M | Ag-3 | B | Bus. | T2 | A5 | a | 4 | h | 4 | k | 5 |
| 176 | M | Ag-3 | B | Bus. | T3 | A5 | b | 5 | g | 4 | m | 3 |
| 177 | M | Ag-3 | B | Bus. | T2 | A4 | b | 5 | h | 5 | m | 4 |
| 178 | M | Ag-3 | B | Bus. | T2 | A5 | b | 5 | h | 4 | m | 3 |
| 179 | M | Ag-3 | B | Bus. | T3 | A4 | b | 4 | h | 4 | m | 3 |
| 180 | M | Ag-3 | B | Bus. | T2 | A6 | b | 5 | g | 5 | k | 4 |
| 181 | M | Ag-3 | B | Bus. | T3 | A5 | b | 5 | g | 5 | k | 5 |
| 182 | M | Ag-3 | B | Ind. | T1 | A4 | b | 3 | g | 3 | n | 2 |
| 183 | M | Ag-3 | B | Ind. | T1 | A4 | c | 2 | h | 3 | m | 4 |
| 184 | M | Ag-3 | B | Ind. | T1 | A5 | b | 3 | h | 3 | m | 3 |
| 185 | M | Ag-3 | B | Ind. | T2 | A4 | b | 3 | g | 3 | n | 2 |
| 186 | M | Ag-3 | B | Ind. | T2 | A4 | c | 2 | h | 3 | m | 4 |
| 187 | M | Ag-3 | B | Ind. | T2 | A4 | b | 3 | h | 3 | m | 3 |
| 188 | M | Ag-3 | B | Ind. | T2 | A4 | b | 5 | h | 4 | m | 3 |
| 189 | M | Ag-3 | B | Ind. | T2 | A4 | b | 4 | h | 4 | m | 3 |
| 190 | M | Ag-3 | B | Ind. | T2 | A5 | c | 2 | h | 3 | m | 4 |
| 191 | M | Ag-3 | B | Ind. | T3 | A4 | b | 3 | h | 3 | m | 3 |
| 192 | M | Ag-3 | B | Ind. | T2 | A4 | b | 3 | g | 3 | n | 2 |
| 193 | M | Ag-3 | B | Ind. | T3 | A3 | c | 2 | h | 3 | m | 4 |
| 194 | M | Ag-3 | B | Ind. | T2 | A4 | b | 3 | h | 3 | m | 3 |
| 195 | M | Ag-3 | B | Ind. | T3 | A4 | b | 4 | h | 4 | m | 3 |
| 196 | M | Ag-1 | H | Ind. | T1 | A4 | b | 3 | g | 3 | n | 2 |
| 197 | M | Ag-1 | H | Ind. | T2 | A3 | c | 2 | h | 3 | m | 4 |
| 198 | M | Ag-1 | H | Ind. | T2 | A2 | b | 3 | h | 3 | m | 3 |
| 199 | M | Ag-1 | H | Ind. | T3 | A4 | c | 2 | h | 3 | m | 4 |
| 200 | M | Ag-1 | H | Ind. | T3 | A3 | b | 3 | h | 3 | m | 3 |
| 201 | M | Ag-2 | H | Ind. | T3 | A4 | b | 4 | g | 4 | m | 4 |
| 202 | M | Ag-2 | H | Ind. | T3 | A2 | a | 4 | h | 4 | k | 4 |
| 203 | M | Ag-2 | H | Ind. | T3 | A3 | b | 4 | h | 3 | m | 3 |
| 204 | M | Ag-2 | H | Ind. | T2 | A3 | c | 2 | h | 3 | m | 3 |
| 205 | M | Ag-2 | H | Ind. | T2 | A2 | c | 2 | h | 3 | m | 4 |
| 206 | M | Ag-2 | H | Ind. | T3 | A4 | b | 3 | h | 3 | m | 3 |
| 207 | M | Ag-2 | H | Ind. | T3 | A2 | c | 2 | h | 3 | p | 4 |
| 208 | M | Ag-2 | H | Ind. | T3 | A4 | b | 3 | h | 3 | n | 2 |
| 209 | M | Ag-2 | H | Ind. | T1 | A2 | b | 4 | g | 4 | m | 4 |
| 210 | M | Ag-2 | H | Ind. | T3 | A4 | c | 3 | h | 3 | n | 4 |
| 211 | M | Ag-2 | H | Ind. | T3 | A4 | b | 4 | g | 3 | n | 3 |
| 212 | M | Ag-3 | H | Ind. | T1 | A2 | b | 3 | g | 3 | n | 2 |
| 213 | M | Ag-3 | H | Ind. | T3 | A2 | c | 2 | h | 3 | m | 4 |
| 214 | M | Ag-3 | H | Ind. | T2 | A4 | b | 3 | h | 3 | m | 3 |
| 215 | M | Ag-3 | H | Ind. | T3 | A4 | c | 2 | h | 3 | p | 4 |

## Reliability of Ease of Use

****** Method 1 (space saver) will be used for this analysis******

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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(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = .4471

## Reliability of Usefulness

****** Method 1 (space saver) will be used for this analysis******

_

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(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = .9604

## Reliability of Need for Interaction

****** Method 1 (space saver) will be used for this analysis******

_

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(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = -.2803

## Reliability of Risk

****** Method 1 (space saver) will be used for this analysis******

_

RELIABILITY ANALYSIS - SCALE (ALPHA(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = .7057

## Reliability of Cost

****** Method 1 (space saver) will be used for this analysis******

_

RELIABILITY ANALYSIS - SCALE (ALPHA(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = .5720

## Reliability of Customers Attitude

****** Method 1 (space saver) will be used for this analysis******

_

RELIABILITY ANALYSIS - SCALE (ALPHA(

Reliability Coefficients

N of Cases = 215.0 N of Items = 3

Alpha = .6196