Multi-attribute Analysis of Confidence, Convenience and Price Functions of Customers of Financial Services Firms: a GLS Systems Model

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In the last six years, he has published seven research articles in refereed reputed international journals covering stock market analysis, international trade, efficiency analysis of banks, asset and liability management issues etc. He is currently working as Associate Professor in Finance & Banking in the College of Business Administration, at Dubai University College-Dubai Chamber of Commerce and Industry. His teaching interests are in Bank Management, Financial Planning, Investment Analysis, Corporate Finance, International Finance & Banking, Insurance and Risk Management and Quantitative Analysis. His research interests are Asset valuation, Stability of Financial Markets, Modeling Customers' Decisions through Utility Framework, Asset & Liability Management, Efficiency Analysis of Financial Institutions, and Analysis of Emerging Economies.

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Abstract

The purpose of the study is to examine significant attributes of customers for explaining the level of confidence, convenience and affordability of services offered by financial service firms (FSFs). A GLS systems model is applied to cross sectional survey data in Dubai. Earnings stability, reliability and liquidity were found to be significant attributes to explain the satisfaction and confidence of customers across FSFs. Results indicate that: core, tangible and relational attributes besides ambience and ATM network were significant attributes that positively influenced the customers' satisfaction and convenience of FSFs. Home loans, credit cards, savings accounts, term deposits and insurance services were significant products that were affordable and valued by customers. The systems model was validated using holdout sample. The customers' confidence and convenience functions had a reliability of 92 to 94 percent while the value function had a reliability of 74 percent. The study findings have implications on FSFs' customer relationship management, customer insight and production/transaction processing competencies.

Key words: Research paper, Confidence, Convenience, Affordability, Financial service firms, CRM, Customer insight and production/transaction processing competencies, GLS Systems Model,

JEL Classification: C31, G21, M31, N25, R22

Financial services firms (FSFs) in the last decade are experiencing rapid changes in technology, deregulation, and a trend towards consolidation, globalization and competition in addition to the challenges posed by customers, who demand faster service and response that is of greater accuracy and of higher quality. Customer satisfaction scores in US banks have declined 8.1 per cent. It is clear that banks trail other industries/ businesses in customer satisfaction (Fornell et al, 1996). The situation is no different in other parts of the world due to internationalization of FSF operations. The competitiveness of the financial services industry coupled with the relative homogeneity of financial services products and services creates a challenge to the FSF industry. Research is warranted on: how customers evaluate services of FSFs, what key attributes are sought, used and valued in evaluation of financial service firms, and whether they differ by product type (Harrison, 2003).

These questions are more serious today than ever since the competitive environment of the FSFs can be considered an antecedent of service related behaviors. Specifically, as the environment changes, service behaviors have to adjust dynamically and FSFs are no exceptions. In reality, the financial services industry has moved to a retail environment. For example, many institutions have become more customers oriented. They have expanded product/service lines; implemented marketing programs aimed at increasing the customer's willingness and ability to purchase; and expanded customer business through cross selling. To remain competitive, many of the larger FSFs have also consolidated their channels and embarked on cost-cutting measures through technology enhancements (Dobni, 2002).

In the academic literature, there have been relatively few attempts to develop models that explain customer decision processes especially in the context of financial services. The current research therefore, focuses on customer decision process in the financial services firms (FSFs), by analyzing the extent of reliability of FSF by customers, level of customers' confidence in these FSFs and the degree of affordability of various services offered by FSFs. The research issue is modeled in the framework of customer decision-making; based on customer's knowledge of attributes and beliefs activated from series of services transactions in the FSFs. The rationale for choosing this framework stems from the fact that, customers have goals, which are desired consequences that they seek to achieve or satisfy. The customers perceive the "problem of unmet needs" because, the desired consequences have not been attained (e.g., I, the customer, need a confident and convenient FSF to deal with; I, the customer, need an affordable FSF to transact with; I, the customer, prefer a FSF that is functioning under traditional systems or under specific cultural values depending on my value system etc...). The paper specifically addresses the following research questions:

1. From the customers' perspective:
    a. Which significant attributes explain the extent of reliability of FSFs (i.e., is a customer more confident or less confident of a particular FSF)?
    b. Which significant attributes explain the extent of convenience of FSFs (i.e., is a particular FSF more convenient or less convenient to the customer?
    c. Which variety of products and services offered by FSFs is affordable by the customers?
    d. Are there significant differences across FSFs based on value systems and geographic reach (i.e., National/Regional/Foreign/Other FSFs)?
2. From the perspective of FSF providers:
    a. Which are the core competencies and strategy that the FSFs could adopt to enhance their growth?

The answers to these questions will facilitate FSFs to reorient their marketing strategy for ensuring a planned growth. The study has important implications given the potential effect on future profits of behavioral outcomes of customers. As such, the study is unique in that it presents an overall systems approach to financial service evaluations and investigates a set of previously untested relationships.

The paper is organized in five sections. In section II, conceptual framework for modeling customers' decision process in FSFs is discussed followed by a review of the literature related to customer satisfaction, service quality, value, reputation, and customer loyalty. In section III, the methods and model specifications employed for the research analysis are explained. In section IV, the results of the study are discussed, and the model is validated. Finally, in section V, conclusions are drawn and implications on strategic, managerial and research areas are explained.

Section II
Conceptual Framework and Literature Review

Financial services firms (FSFs)[1] compete for business in three basic areas: public confidence, user convenience, and explicit price (Kane (1986), Sinkey (1992)). As regulated intermediataries, banks typically have faced among other things, restrictions with respect to price, place and product. These restrictions limit the ability of FSFs to compete, and they fundamentally shape in particular, all aspects of financial services confidence, convenience and affordability (value/price) functions. Understanding and analyzing these functions are paramount to evaluate the level of customer's satisfaction from various services offered by FSFs. It is plausible that, higher confidence level of customers in FSFs, higher convenience and affordability of FSF services will drive the customers to be more satisfied and delighted with the FSFs. It is more profitable for the FSFs to retain these delighted customers.

Confidence function

If we abstract from government guarantees for the moment, confidence in a financial institution should be a function of its net worth or capital adequacy (capacity to absorb losses), stability of earnings (an indicator of its riskiness), liquidity, accessibility, reliability and cost of information about its operations, management and so on. In general, market participants will have less confidence in FSFs with low net worth, highly variable earnings, illiquid assets and weak managers. In an efficient market, disclosure of the components of a FSF's confidence function would permit market participants to judge the safety or riskiness of the FSFs.

[1] Since majority of FSFs in the study consists of bank branches, the terms FSFs, banks and bank branches all mean the same and are used interchangeably throughout the report

Convenience function

The convenience function for a FSF can be described in terms of the following elements:

- The firm's geographical reach (e.g., number of branches or ability to transfer funds electronically).
- The number of products and services offered (e.g., a "global bank" versus "regional bank").
- The average cost of accessing the FSF's facilities.
- The quality of the product and services (e.g., speed and reliability).

Although the cost and quality of an individual FSF's products and services are mainly a function of its internal environment and operations, regulations indirectly affect the cost of doing business and contribute to shaping this component of the convenience function. In contrast, geographic and product restrictions directly affect user convenience by limiting the scope of a FSF's geographic reach and its product offerings. To the extent that these restrictions limit firm's ability to diversify, they increase FSF's riskiness.

Price function

Interest rates on loan and deposit products (and prices for other financial services) are the explicit prices of FSFs. The current regulatory environment permits FSFs to compete more freely for loan and deposit products based on interest rates, which is the value dimension or affordability from customers' point of view. There is less opportunity for FSFs to differentiate their services in terms of price/value dimension and more opportunity for differentiating the financial products and services through dimensions of confidence and convenience. A better understanding of how these three major forms of service evaluations impact on FSFs' reputation and customers' loyalty towards the FSFs appears warranted to explain overall customer' satisfaction.

Kaynak and Kucukemiroglu (1992) studied bank choice criteria in a particular ethnic, cultural or religious context, where differences have become relevant. They employed statistical analysis to test for differences in the importance of choice criteria between customers of different demographic profiles. In general, studies pertaining to choice of banks and their services provide valuable pointers; however, they draw conflicting conclusions. Elliot et al. (1996) found that price, speed and access were particularly important, while Reeves and Bednar (1996) argued that customer service appeared more important than price and that customers use additional criteria beyond price, speed and access to evaluate and choose between banks.

Customer satisfaction is an important theoretical as well as practical issue for most marketers and consumer researchers (Dabholkar et al., 1996; Fournier and Mick, 1999; Meuter et al., 2000). Customer satisfaction can be considered the essence of success in today's highly competitive world of business. Thus, the significance of customer satisfaction and customer retention in strategy development for a "market oriented" and "customer focused" firm cannot be underestimated. Consequently, customer satisfaction is increasingly becoming a corporate goal as more and more companies strive for quality in their products and services (Bitner and Hubbert, 1994). While satisfaction is a feeling or an attitude of a customer towards a service after it has been used, service quality is simply; customers' overall impression of the relative inferiority/superiority of the organization and its services (Bitner and Hubbert, 1994, p. 77). Satisfied customers are also likely to tell others about their favorable experiences and thus engage in positive word of mouth advertising. This positive word of mouth advertising is particularly useful in collectivist Middle Eastern cultures like that of Abu Dhabi where social life is structured in a way to improve social relationships with others in the society (Hofstede, 1980). Dissatisfied customers, on the other hand, are likely to switch brands and engage in negative word of mouth advertising. Furthermore, behaviors such as repeat purchase and word-of-mouth directly affect the viability and profitability of a firm (Dabholkar et al., 1996). Some argue that

both service quality and satisfaction are best conceptualized as unique constructs that should not be treated as equivalents in models of consumer decision-making (Taylor and Baker, 1994, p. 165). Jamal and Naser (2002) used ordinary least squares to examine the impact of service quality dimensions and customer expertise on satisfaction by using survey data on 167 customers of Abu Dhabi Commercial Bank. Their findings indicate that both core and relational dimensions of service quality appear to be linked to customer satisfaction.

A stream of research has argued that customer satisfaction judgments are causal antecedents of the service quality judgments (Bitner, 1990). However, others have reported that it is the service quality that appears to be the causal antecedent of customer satisfaction (Taylor and Baker, 1994). This conflicting empirical evidence highlights the need for researching the direction of the causal link between satisfaction and service quality to explain customer behavior outcomes, which in turn could have important managerial relevance. The literature also highlights the multidimensionality of service quality, and in doing so focuses on two of its overriding dimensions. The first dimension includes the core or outcome aspects (contractual) of the service (e.g. reliability) and the second one includes the relational or process aspects (customer-- employee relationship) of the service (e.g. tangibles, responsiveness, assurance and empathy (Levesque and McDougall, 1996).

Parasuraman et al., (1991a) view reliability dimension as mainly concerned with the outcome of service; while the dimensions of tangibles, responsiveness, assurance and empathy are concerned with the service delivery process. Due to the intangible nature of services, it is often difficult for customers to understand services. Customers thus make inferences about the service quality based on tangibles (the ambience, the buildings, the physical layout etc.) that surround the service environment. Support for this argument comes from empirical evidence suggesting that the tangible and physical surroundings of the service environment can have a significant impact on customers' affective responses and their behavioral intentions (Wakefield and Blodgett, 1999). The exploration of the use of

evaluative criteria in forming performance expectations has had a major impact on the study of consumer behavior. The evaluative criteria can include attributes like price, brand perceptions, quality, and comfort and design (Grapentine, 1995; Lee and Lou, 1996)[2].

Traditional customer behavior models may have exhibited low switching behavior driven more by inertia and beliefs concerning the undifferentiated services of banks than positive feelings regarding their banking relationships. However, in today's banking environment, these traditional models of behavior may be breaking down. It has been argued that, strong relationships between financial institutions and business clients have advantages for both banks and clients. Advantages for the financial services providers include; the ability to maximize profits by reducing risks, improved information flows, more satisfied customers and enhanced loyalty (Binks and Ennew, 1997; Tyler and Stanley 1999b; Zeithaml et al., 1996). Advantages for the buyers of financial services consist of greater access to finance, favorable rates on loans, higher perceived quality of service, reduced stress, avoidance of switching costs, and increased convenience. It is important to recognize that the benefits of relationship that accrue to both providers and users of financial services are not immediate. Rather, they emerge as the relationship develops from early stages through maturity (Zineldin, 1996). Ennew and Binks (1999) argue that positive behavior on the part of the bank manager has the greatest contribution to quality and satisfaction, and that the importance of institutional atmosphere may have particularly important effects on satisfaction.

The foregoing review indicates that, although significant research has been conducted on satisfaction, service quality, and value; the precise nature of the relationships that exist between these constructs and the understanding of their effect on customer behavior remains a key issue facing the academy.

[2] The present study incorporates both the tangible and intangible dimensions of financial service quality as likely antecedents of customer satisfaction expressed in terms of customer confidence, convenience and value dimensions through system modeling.

Model Development

Customer confidence, convenience and value reflected in their overall satisfaction in the present study is measured through a multi-attribute behavioral questionnaire, with a five-point Likert-type scale with anchors of very satisfied (5) and very dissatisfied (1) customers. The set of attributes included in the questionnaire, their measurement and expected hypothesis in the empirical model are summarized in Table.1. The empathy attributes viz., friendly and courteous staff, reliable and discreet staff, and speed of service formed the perceived service quality scale, which are part of the SERVQUAL scale developed by Parasuraman et al. (1988). The degree to which interest rates were judged affordable on the variety of products and services offered, measured perceived financial service value to customers. Although it could be argued that, competitive rates are a quality indicator, FSFs' ability to offer competitive rates to customers is judged to represent affordable price. As such, these items were considered to reflect and regroup Zeithaml's (1988) definition of the value construct.

On the method of analysis, earlier researches have considered mainly single equation models overlooking the fact that the multi-dimensions viz., demographic, core, tangible, relational and value are interdependent and jointly influences the decision process of customers. The present research differs from earlier research by proposing and testing these multi-dimensions as interdependent choice dimensions and the customers assess quality and satisfaction of financial services in a systems context. We use the Generalized Least Square (GLS) framework to model the customers' decision problem of why the customers choose a particular financial services firm (FSF): Is it because they have confidence in FSF? Alternatively, is it due to convenience of FSFs or are the services of FSF affordable? We use a set of multiple attributes to explain the customer behavior. We first hypothesize that, the customers make their choice of FSFs based on the level of confidence, convenience and value provided by the FSFs. This is because, we believe that, FSFs provide services to the customers

based on the expectation of customers' needs on core, tangible and relational dimensional factors. Specifically the decision problem is modeled as a system of estimable functions expressed as systems equations:

$$\text{(1) Confidence function } (Y_1) = f\left[\text{Const} + \sum_{i=1}^{4} \beta_i X_i + \sum_{j=1}^{7} \beta_j X_j + \epsilon_{1i}\right]$$

$$\text{(2) Convenience function } (Y_2) = f\left[\text{Const} + \sum_{i=1}^{4} \beta_i X_i + \sum_{j=8}^{19} \beta_j X_j + \epsilon_{2i}\right]$$

$$\text{(3) Value (Price) function } (Y_2) = f\left[\text{Const} + \sum_{i=1}^{4} \beta_i X_i + \sum_{j=20}^{29} \beta_j X_j + \epsilon_{3i}\right]$$

Where,

X_i i = 1...4 represent demographic attributes that are common across all three functions (1), (2), (3) of FSFs;

X_j j = 1...7 represent attributes that explain customers' confidence in FSFs;

j = 8...19 represent attributes that explain customers' convenience of services of FSFs;

j = 20...29 represent attributes that explain customers' value or affordability of FSF services;

β_i & β_j are respective impact coefficients on i^{th} and j^{th} attribute;

ϵ_{ij} are respective disturbances or errors associated with i = 1,2,3 systems equations and j = 1...n customers with the assumption that there is contemporaneous correlation across the system errors and there is heteroskedasticity in the survey observations.

The above set of equations could be considered as a set of demand equations capturing demand characteristics of the customers. The justification for this framework stems from the fact that, sample observations relate to customers in a cross-sectional study and the assumption of a common disturbance variance at all observation points is often implausible due to heteroskedasticity. Further, there may be error in measurement of both dependent and independent variables, and errors in omission of other variables that might not have been included due to oversight in the above

relationship. The appropriate specification in such a case is GLS. There are two conditions under which, ordinary least square (OLS) is identical to GLS and therefore, there is nothing to be gained by treating the equations as a system. The first condition is, when contemporaneous correlation is zero. This condition implies that in system equations (1), (2) and (3) covariance (σ_{ij}): $\sigma_{12} = \sigma_{13} = \sigma_{21} = \sigma_{23} = \sigma_{31} = \sigma_{32} = 0$. This result is intuitively reasonable one since; it is the non-existence of this correlation in error terms across the systems equations that make the three equations unrelated. The second condition is that explanatory (right hand side) variables are identical for all the equations.

The reason for specifying the models as in (1) to (3) is based on the premise that, error terms ε_{ij} in each of these system equations are not independent. Firstly, disturbance ε_1 in (1) and ε_2 in (2) are contemporaneously correlated[3] i.e., covariance $\sigma_{12} \neq 0$. Secondly, disturbance ε_2 in (2) and ε_3 in (3) are contemporaneously correlated i.e., covariance $\sigma_{i23} \neq 0$. Thirdly, disturbance ε_3 in (3) and ε_1 in (1) are contemporaneously correlated i.e., covariance $\sigma_{31} \neq 0$. Fourthly, the explanatory variables (independent attributes) are not same for all the three functions. Hence, systems model specification is more appropriate to analyze the research problem.[4] The conceptual model is applied to cross sectional customers data in FSFs in Dubai in United Arab Emirates (UAE).

[3] Correlation between disturbances from different equations in a system at a given time is known as contemporaneous correlation. It is distinct from "auto-correlation" which refers to correlation over time for the disturbances in a single equation. When contemporaneous correlation exists, it may be more efficient to estimate all equations in the system jointly using GLS method rather than to estimate each one using OLS method. The appropriate joint estimation technique is often known as Seemingly Unrelated Regression (SUR) estimation (SUR) (Judge et al p.442-451). GLS estimate has the lower variance than the OLS estimate; because, it takes into account the contemporaneous correlation between the disturbances in different equations. Since, a gain in efficiency can be achieved by combining a number of equations that, at first glance, seem unrelated; Zellner (1962) has given the equation the title of SUR.

[4] The gain in efficiency yielded by Zellner estimation over OLS estimation increases as the data measurement problem increases and cross equation correlation is non-zero.

Section III
Methodology

Data, Context of UAE-Dubai

UAE has witnessed a series of systematic development in the last ten years to gradually become the financial hub in the Middle-Eastern region. The UAE has served as regional financial center supported by dynamic government measures to create sound legal framework and highly developed technology infrastructure. Dubai in particular, takes main credit for its progressive policies, which resulted in creating a leading trade hub for the entire Middle East and a business friendly environment, which triggered the development of modern banking and finance sector. The UAE boasts a robust financial sector, comparable in most aspects with those found in developed countries. The capital adequacy ratios of most of the banks operating in UAE are comfortable well above the stipulated 8 percent under the Basel-2 accord.

There are currently 49 commercial banks (22 national banks with 340 branches and 27 foreign banks with over 85 branches) and 32 representative offices of foreign banks besides 46 insurance companies (23 national and 23 foreign insurance firms) serving as the backbone to the country's financial sector giving the UAE one of the highest per capita financial services ratios in the region. Besides these conventional banks, four of the commercial banks in UAE are operating as Islamic banks[5].

Dubai, headquarters to seven of the country's 21 national banks and to the majority of foreign banks besides representative offices of banks operating in the UAE, is emerging as the country's principal financial center. Dubai's energetic trade, tourism and real estate sector, as well as its large workforce have spurred the growth of the emirate's financial sector. The real estate sector is now

[5] These are Dubai Islamic Bank, Abu Dhabi Islamic Bank, National Bank of Sharjah and the recently opened Emirates Islamic Bank.

expected to make an even larger contribution to the banking sector due to the legislation that allows foreign ownership of real estate properties in select new projects in Dubai. Many FSFs have already started marketing aggressively for offering home loans to expatriates. Dubai has attracted highly skilled and educational professionals to its numerous high-tech projects such as Dubai Internet City and Dubai Media city, as well as its government and service sectors. These form the market for the emirate's finance & banking sector, where an estimated 300,000 unique customers subscribe to finance services in Dubai. The current study assumes significance since Dubai in particular has attained the status of International Financial Center (IFC) similar to other IFCs in London, Frankfurt, New York, Hong Kong, and Tokyo. The awareness of the FSF customers is increasing daily due to the strong sales and advertisement pitch by the FSFs to gain a market share.

Similar to other developed and fast developing economies, the FSFs in Dubai are also facing strong competition amongst their branches for acquiring, retaining, and creating loyalty in their customers. There are growing challenges for inefficient banks to start consolidation through mergers, acquisitions to survive in the long run. A study by Rao (2004) indicates that there exist 15-30% cost inefficiencies in the local and foreign banks in UAE during 1998-2001. The study also suggested initiation of cost efficiency measures through effective asset & liability management, and effective customer relationship management (CRM). The current research specifically focuses on effective CRM by evaluating customer insight, fulfillment, and infrastructure competencies of FSFs in Dubai. The data is collected through a random survey of customers belonging to all the three categories of FSFs (national, foreign and Islamic) operating in Dubai.

A total of 556[6] responses (out of 825 questionnaire) were collected through a structured questionnaire, which addressed customers' perceptions on the three dimensions of FSFs viz., the level

[6] We designed the research questionnaire. We provided guidance to eleven BBA finance & banking-graduating students to collect the data in fall 2004 semester for preparing a project report. The project was a part of their course work in a

of confidence, the extent of convenience and the degree of affordability (vale/pricing). These dimensions and related multi-attributes are detailed in Table.1, which form the set of independent variables X_i and X_j, and dependent variables Y_i specified in the conceptual framework under model development. The total comprised of 56 percent responses from customers dealing with national FSFs, 31 percent responses from customers dealing with foreign FSFs and 13 percent responses from customers dealing with Islamic FSFs. Out of the total sample of 556, a sub-set of 166 observations (constituting 30%) was randomly selected and retained as holdout sample for validating the final model. Three models were specified for identifying significant attributes: OLS Discriminant, Logit and a system of GLS seemingly unrelated regression (SUR). Usage of OLS Discriminant model combines the perception of customers to discriminate as to whether the services offered by FSFs are more reliable or not, more convenient or not, and affordable or not. Logit specification while is similar in all respects to OLS Discriminant model specification; it has the added advantage of predicting the probability of occurrence of the customer dimension for the given level of customer attributes. Such specifications have been used to model two or more qualitative choices and are valuable in the analysis of survey data since they contain behavioral responses. One drawback of the Logit specification is that it assumes the customers' independent attributes are distributed normally. In reality, this assumption may not hold under all circumstances.

Specification of OLS Discriminant and Logit models also assume that, the customers make decisions on the level of confidence, the extent of convenience and the affordability, independent of one another. However, in reality, this is implausible. Customers make decisions on these outcomes jointly e.g., customers who are confident of the services provided by the FSF, would also simultaneously consider attributes related to convenience and price decisions. These two model

specialized course "Marketing Financial Services" at the College of Business Administration. We acknowledge the students' help in permitting to use the data for model estimation in the current study. Engaging students in research projects is highly recommended at the University to make the students' learning effective and more applied in content.

Table.1 Description of Customer attributes, Coding of variables and Set of hypotheses formed

#	Category of Outcome (Y_i i= 1,2,3) and Customer Attributes (X_i i=1.....29)	Dimen-sions	Variable Code	Confi-dence (Y_1)	Convenience (Y_2)	Price (Y_3)
	Demographic (Demo) attributes / variables					
1	Age (Years)	Demo	Age	+	+	-
2	Gender (Male=1; Female=0)	Demo	SX	+	+	-
3	Annual income range (Less than 50,000AED=1; Between 51,000 & 100,000AED=2; Between 101,000& 250,000AED=3; Above 250,000AED=4)	Demo	Inc	+	+	-
	Confidence Function: Choosing the particular FSF: Customer reasons are:		**Y_1**			
4	Stability of Earnings	Core	X_1	+		
5	Liquidity	Core	X_2	+		
6	Accessibility	Core	X_3	+		
7	Reliability	Core	X_4	+		
8	Reputation	Core	X_5	+		
9	Riskiness being low	Core	X_6	+		
10	Longevity of relationship with FSF	Core	X_7	+		
	Convenience Function: Level of customer satisfaction on the following attributes:		**Y_2**			
11	Branch Ambience –Design, spaciousness, cleanliness, appearance etc	Relation	X_8		+	
12	Queue at the branch - Teller	Tangible	X_9		-	
13	Wait time at the branch for opening account for loan or deposit or other services	Tangible	X_{10}		-	
14	Friendliness and courtesy of staff at the branch	Relation	X_{11}		+	
15	Staff knowledge (competency) on services for advising customers at the branch	Core	X_{12}		+	
16	Time taken for completing transaction at the branch	Tangible	X_{13}		-	
17	ATM network	Tangible	X_{14}		+	
18	Assistance over telephone	Relation	X_{15}		+	
19	Wait time for getting services through telephone banking	Tangible	X_{16}		-	
20	Friendliness and courtesy of staff in telephone banking	Relation	X_{17}		+	
21	Staff knowledge (competency) on services for advising customers on telephone	Core	X_{18}		+	
22	Time taken for completing transaction over telephone	Tangible	X_{19}		-	
	Affordability (Value) Function: Level of customer satisfaction on the following products offered by FSF in terms of price		**Y_3**			
23	Personal loans	Value	X_{20}			+
24	Credit cards	Value	X_{21}			+
25	Global accounts	Value	X_{22}			+
26	Current accounts	Value	X_{23}			+
27	Savings accounts	Value	X_{24}			+
28	Investment products	Value	X_{25}			+
29	Term/Fixed deposits	Value	X_{26}			+
30	Auto loans	Value	X_{27}			+
31	Home loans	Value	X_{28}			+
32	Insurance services	Value	X_{29}			+

specifications therefore might not capture in their estimation, simultaneity existing in these customer decisions. In such a case, more appropriate model specification is GLS (SUR), which considers cross-functional relationship.

Overview of sample customers

Respondents in the survey were first asked whether they have relationship with any FSF. Customers with at least one account whether checking, saving, credit card, or personal loan etc., were asked to designate the FSF where they transacted frequently. Additional questions were raised on various attributes X_i and X_j relating to the three functions as detailed in Table.1.

Figure.1 Demographic attributes of customers

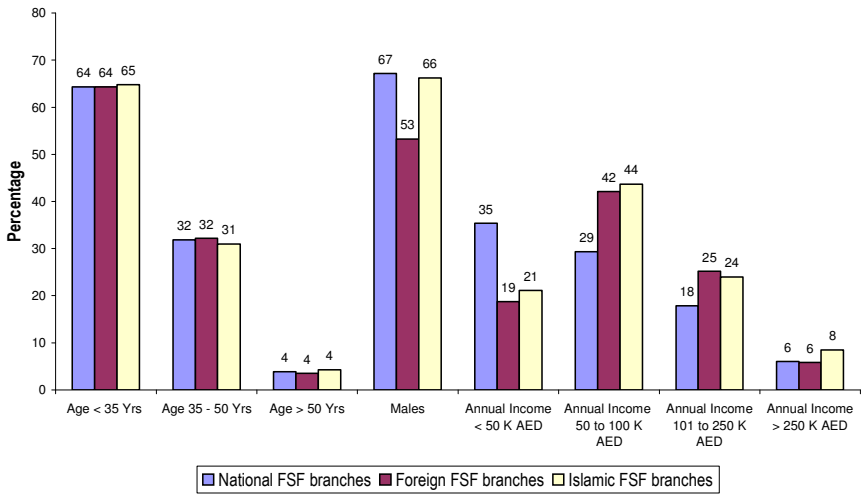


Figure.1 depicts the demographical attributes of customers. The majority of the sample (65%) across the FSFs comprised of younger ones in the age group of 20 to 35 years, while around 31 percent customers belonged to middle age category. Male customers constituted 67 percent of customers in national and Islamic FSF, while they constituted 53 percent in foreign FSFs. 35% customers in national FSF belonged to low-income category (annual income of less than 50,000

AED[7]), compared to around 20 percent in foreign and Islamic FSFs. In contrast, around 43 percent of customers belonged to average income category (annual income of 51,000 to 100,000 AED) in foreign and Islamic FSFs compared to 29 percent in national FSFs. This trend repeated in higher income category (annual income of 101,000 to 250,000 AED) of customers. In all the FSFs, only around 6 percent belonged to high net worth category (above 250,000 AED).

Figure.2 Customers' reasons attributed to Confidence in FSFs

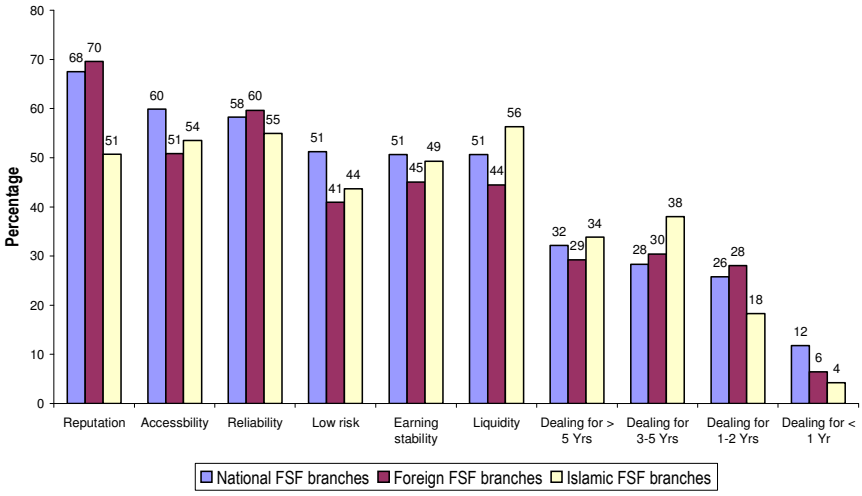
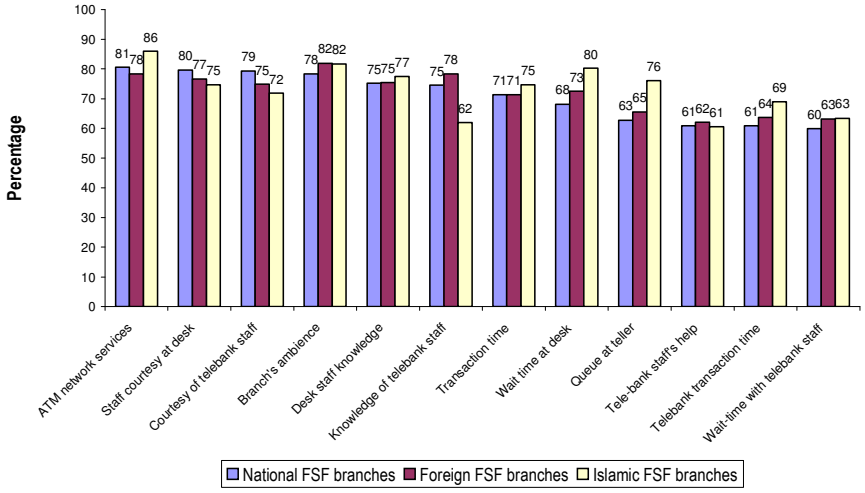


Figure.2 displays specific reasons attributed by customers to convey their satisfaction and confidence in the services offered by the FSFs. Majority of customers perceived reputation (68%), accessibility (60%), and reliability (58%) as major reasons while low risk earning stability and liquidity were moderate reasons to express their confidence in services offered by national FSFs. On the other hand, majority of customers perceived reputation (70%) and reliability (60%) for conveying their confidence in services of foreign FSFs. Surprisingly in the case of Islamic FSFs, customers expressed liquidity (56%), reliability (55%), accessibility (54%), and reputation (51%) as major reasons for expressing their confidence the services offered by the Islamic FSFs.

[7] AED is Arab Emirate Dirham, the UAE currency and is pegged to US Dollar. 3.675AED = I US$.

Majority of these respondents (around 60%) were dealing with the FSF beyond three years while others reported that they are relatively new to the FSF and dealing with the FSF for just two years or less.

Figure.3 Customers' perception of factors attributed to convenience of FSFs



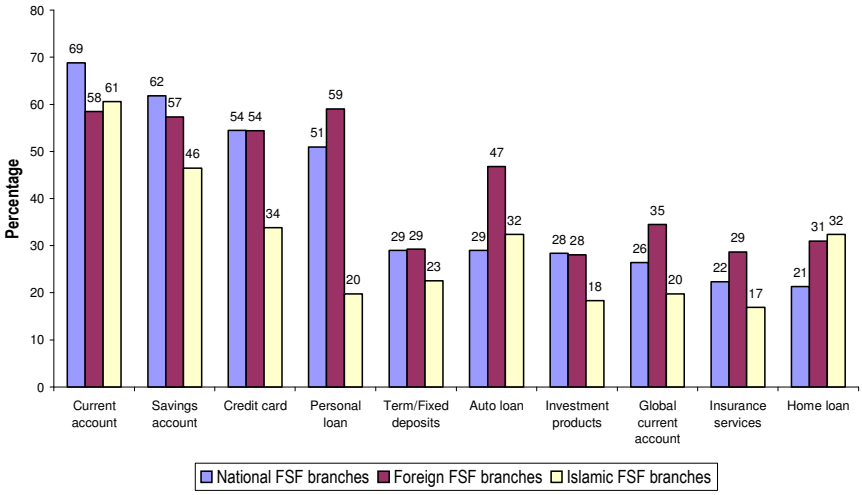
Respondents were asked to rate their level of satisfaction of FSF's service attributes with respect to "convenience" using a five-point likert satisfaction scale. Figure.3 illustrates the distribution of customers' responses. The responses were almost similar across the three types of FSFs with ATM network, empathy (staff courtesy at desk and tele banking), branch ambience, competency of staff and transaction time being attributes, which favored convenience aspects of FSFs services. Some of the attributes that required improvement were wait time at desk, queue at the teller, transaction time in ATMs and wait time for tele responses.

Respondents were asked to rate their level of satisfaction of FSF's with respect to "affordability or value or price factor" on various services of FSF using a five-point likert satisfaction scale. Figure.4 depicts the distribution of various services based on the level of affordability.

It is interesting to note that, savings and credit card accounts services were more affordable in national FSFs than in other FSFs. Similarly, personal and auto loans, global current account and

insurance services were more affordable in foreign FSFs than in other FSFs. It is also interesting to note that, home loans were more affordable in Islamic and foreign FSFs compared to national FSFs

Figure.4 Custormers' affordability of services of FSFs



Section IV
Discussion of Results, Managerial Implications and Validation of GLS Model

For the purpose of quantitative modeling of the three functions and to identify significant customers' attributes, an index of satisfaction was derived for each of the three functions based on the following criteria to classify the customers under the three functions viz., level of confidence, level of convenience and affordability of services:

- Reponses to each of the seven reasons discussed under Figure.1 were averaged and a minimum index of 3.0 was chosen as the cut-off point to classify the customers as those satisfied and confident, or not satisfied and non-confident of FSF services.
- Each of the 5-point likert scale responses discussed under Figures.2 and 3 was averaged and a minimum of 3.5 out of 5.0 was chosen as the cut off point to classify the customers as satisfied or not with the level of convenience and the extent of affordability of FSFs' services.

The index so derived indicates that, overall, the customers' perception of confidence in each of the FSFs was only around 60 percent and the perception level of convenience was around 68 percent. Surprisingly, overall perception of affordability of services was lowest in all the three FSFs. This implies that, the customers' realization of value from the various services offered by FSFs was lower than their expectations. In other words, the cost of FSF services was higher than the benefits perceived by the customers. Are these observations significant? We shall examine this.

Discussion of GLS Model Results

Estimation results are reported in Table 2[8]. Based on Akaike Information Criteria (AIC)[9] and high χ^2 (Chi-square) significance level, GLS model estimates are more reliable and efficient than OLS results. We therefore restrict our discussion to the results reported under GLS (SUR) method. The statistically significant coefficients are identified in gray color to highlight the significant attributes in the three dimensions of FSFs.

Factors Influencing Customers' Confidence level

Stability of earnings (X_1) and reliability (X_7) were the most significant core dimensional factors that were rated positively by the customers in explaining their confidence in national FSFs. As hypothesized, these factors had correct positive signs. The size of impact coefficients was higher on reliability core attribute than on the earning stability attribute. A one percent increase in the customers' perception of reliability attribute, will improve the confidence level in national FSFs by 0.397 percent.

[8] The standard error of estimates in Logit model specification was very high indicating less reliability and the signs on the coefficients were not as hypothesized. Based on error diagnostics and specification tests, Logit model is a poor specification in the study. Hence, Logit specification has been excluded from the discussion.

[9] AIC is a kind of error loss function that is to be minimized among competing models. Many empirical researchers think that AIC serves as a satisfactory guideline for selecting a model. The idea is to choose the model for which AIC is smallest.

Table.2 OLS & GLS (SUR) Models' Beta Estimates of FSF branches[10]								
	National(N=220)		Foreign (N=120)		Islamic (N=50)		All (N=390)	
Confidence function (Y_1)	**OLS β**	**GLS β**	**OLS β**	**GLS β**	**OLS β**	**GLS β**	**OLS β**	**GLS β**
Intercept	-0.618***	-0.617***	-0.557***	-0.553***	-0.491**	-0.367**	-0.577***	-0.581***
Age	0.000	0.000	0.005	0.005	-0.004	-0.004	0.001	0.001
SX	0.021	0.022	-0.023	-0.024	0.034	0.027	0.005	0.005
Inc	-0.003	-0.002	-0.015	-0.015	0.062	0.061	0.003	0.003
X_1	0.105***	0.107***	0.003	-0.004	0.117	0.135	0.077**	0.080***
X_2	-0.047	-0.043	0.130**	0.130**	0.148	0.098	0.049	0.049
X_3	0.000	0.000	0.040	0.034	0.068	0.070	0.000	0.000
X_4	0.059	0.062	-0.039	-0.028	-0.035	-0.043	0.022	0.026
X_5	0.007	0.001	0.049	0.049	-0.062	-0.086	0.007	0.006
X_6	0.001	-0.004	-0.073	-0.073	0.032	-0.009	-0.026	-0.026
X_7	0.397***	0.397***	0.349***	0.348***	0.334***	0.312***	0.378***	0.378***
AIC	-2.669	-2.720	-2.428	-2.523	-2.349	-2.564	-2.606	-2.634
χ^2 (Chi² Value)	298.320	309.540	146.420	157.910	61.410	72.180	486.870	497.980
Customers' level of Confidence(Y_2)								
Intercept	-1.205***	-1.139***	-0.901***	-0.901***	-1.452***	-1.316***	-1.175***	-1.124***
Age	-0.001	-0.001	0.001	0.001	0.003	0.001	-0.001	-0.001
SX	0.065	0.065	-0.037	-0.028	-0.165	-0.165*	0.024	0.022
Inc	-0.008	-0.007	-0.041	-0.042	-0.089	-0.090**	-0.026	-0.025
X_8	0.039	0.038	0.050	0.011	0.055	0.033	0.048**	0.047***
X_9	0.048*	0.050**	0.000	0.000	0.096	0.093	0.000	0.000
X_{10}	0.025	0.015	0.099**	0.109***	-0.049	-0.051	0.034	0.029
X_{11}	0.082***	0.083***	0.089**	0.081***	0.014	0.059	0.089***	0.088***
X_{12}	0.061*	0.053*	0.026	0.027	0.072	0.015	0.058**	0.054**
X_{13}	0.088***	0.084***	0.061	0.052	0.117	0.158***	0.094***	0.091***
X_{14}	0.009	0.018	0.058	0.050	0.077	0.048	0.035	0.038*
X_{15}	0.001**	0.001**	0.022	0.033*	0.002	-0.010	0.0001**	0.001**
X_{16}	0.000	0.000	0.069*	0.074**	0.052	0.031	0.000	0.000
X_{17}	-0.009	-0.009	0.023	0.032	0.129	0.141**	0.028	0.030
X_{18}	0.073**	0.078***	-0.122**	-0.095**	0.046	0.030	0.021	0.023
X_{19}	0.086***	0.074***	0.062*	0.066**	-0.013	0.028	0.089***	0.084***
AIC	-2.149	-2.221	-2.090	-2.221	-2.088	-2.440	-2.159	-2.200
χ^2 (Chi² Value)	173.410	189.230	102.360	118.030	61.680	79.310	287.600	303.360
Customers' Value (affordability) Y_3								
Intercept	-0.400***	-0.384***	-0.221	-0.207	-0.056	0.124	-0.271***	-0.245***
Age	0.004*	0.004*	-0.003	-0.003	0.004	0.001	0.002	0.002
SX	0.021	0.019	0.014	0.019	-0.099	-0.101	-0.019	-0.020
Inc	0.014	0.013	-0.020	-0.023	-0.061	-0.066	0.003	0.003
X_{20}	0.014	0.011	0.009	0.018	0.078	0.077*	0.012	0.012
X_{21}	0.012	0.011	0.044*	0.039*	-0.012	-0.035	0.017	0.013
X_{22}	0.004	0.006	-0.008	-0.004	-0.017	-0.032	0.005	0.006
X_{23}	0.013	0.013	0.000	0.000	0.011	0.012	0.000	0.000
X_{24}	0.011	0.010	0.053**	0.051***	0.009	0.011	0.017	0.017
X_{25}	-0.001	-0.001	0.000	0.000	0.061	0.076**	0.000	0.000
X_{26}	0.012	0.015	0.019	0.026	-0.010	-0.014	0.020	0.022*
X_{27}	0.000	0.000	0.010	0.011	0.024	0.029	0.000	0.000
X_{28}	0.118***	0.117***	0.057	0.049	0.026	-0.049	0.104***	0.101***
X_{29}	0.006	0.002	0.077*	0.066*	-0.017	0.047	0.022	0.020
AIC	-2.302	-2.367	-2.054	-2.175	-2.158	-2.427	-2.228	-2.263
χ^2 (Chi² Value)	131.290	145.590	101.440	115.910	35.550	48.980	245.260	259.060

[10] *** Parameters estimates significant at α < 1%; ** significant at α 2 to 5%; * significant at α 6 to 10%.

Table.2 OLS and GLS (SUR) Models' Standard Errors (σ) of Beta Estimates of FSF branches								
	National(N=220)		Foreign (N=120)		Islamic (N=50)		All (N=390)	
	OLS	GLS	OLS	GLS	OLS	GLS	OLS	GLS
Confidence function (Y_1)	**σ**	**σ**	**σ**	**σ**	**σ**	**σ**	**σ**	**σ**
Intercept	0.073	0.071	0.104	0.099	0.219	0.194	0.056	0.053
Age	0.002	0.002	0.003	0.003	0.005	0.005	0.001	0.001
SX	0.038	0.037	0.056	0.054	0.092	0.082	0.029	0.028
Inc	0.018	0.017	0.028	0.026	0.053	0.046	0.014	0.013
X_1	0.040	0.039	0.065	0.061	0.105	0.091	0.031	0.031
X_2	0.046	0.044	0.061	0.058	0.108	0.094	0.033	0.032
X_3	0.000	0.000	0.059	0.056	0.116	0.099	0.000	0.000
X_4	0.044	0.043	0.061	0.058	0.118	0.102	0.032	0.032
X_5	0.044	0.043	0.063	0.059	0.109	0.094	0.032	0.032
X_6	0.047	0.045	0.056	0.053	0.101	0.087	0.032	0.032
X_7	0.018	0.017	0.025	0.024	0.046	0.040	0.013	0.013
Customers' level of Confidence(Y_2)								
Intercept	0.160	0.153	0.226	0.206	0.457	0.362	0.121	0.117
Age	0.002	0.002	0.003	0.003	0.007	0.005	0.002	0.002
SX	0.049	0.047	0.069	0.064	0.116	0.095	0.036	0.035
Inc	0.022	0.021	0.032	0.030	0.056	0.046	0.017	0.016
X_8	0.026	0.025	0.059	0.053	0.052	0.040	0.020	0.019
X_9	0.026	0.024	0.000	0.000	0.088	0.068	0.000	0.000
X_{10}	0.032	0.030	0.050	0.045	0.095	0.073	0.025	0.024
X_{11}	0.029	0.027	0.038	0.034	0.091	0.070	0.021	0.020
X_{12}	0.034	0.032	0.047	0.042	0.108	0.083	0.025	0.024
X_{13}	0.030	0.029	0.056	0.050	0.085	0.065	0.024	0.023
X_{14}	0.032	0.030	0.040	0.036	0.084	0.064	0.023	0.022
X_{15}	0.000	0.000	0.022	0.020	0.027	0.020	0.000	0.000
X_{16}	0.000	0.000	0.038	0.034	0.060	0.045	0.000	0.000
X_{17}	0.035	0.033	0.044	0.040	0.096	0.074	0.025	0.024
X_{18}	0.032	0.030	0.050	0.045	0.066	0.051	0.023	0.022
X_{19}	0.026	0.025	0.033	0.030	0.064	0.049	0.018	0.018
Customers' Value (affordability) Y_3								
Intercept	0.096	0.092	0.153	0.142	0.306	0.260	0.074	0.072
Age	0.002	0.002	0.004	0.003	0.007	0.006	0.002	0.002
SX	0.045	0.044	0.070	0.066	0.101	0.088	0.035	0.034
Inc	0.021	0.021	0.033	0.031	0.049	0.042	0.016	0.016
X_{20}	0.017	0.016	0.028	0.026	0.052	0.043	0.013	0.013
X_{21}	0.017	0.016	0.027	0.024	0.037	0.030	0.013	0.012
X_{22}	0.020	0.019	0.032	0.030	0.046	0.038	0.015	0.015
X_{23}	0.014	0.014	0.000	0.000	0.028	0.023	0.000	0.000
X_{24}	0.016	0.016	0.023	0.021	0.037	0.031	0.012	0.011
X_{25}	0.019	0.018	0.000	0.000	0.041	0.034	0.000	0.000
X_{26}	0.020	0.019	0.037	0.034	0.040	0.032	0.014	0.013
X_{27}	0.000	0.000	0.029	0.027	0.038	0.031	0.000	0.000
X_{28}	0.026	0.025	0.040	0.037	0.090	0.074	0.021	0.020
X_{29}	0.024	0.023	0.043	0.039	0.092	0.076	0.020	0.019

A one percent increase in the customers' perception of earnings' stability attribute, will improve the confidence level in national FSFs by 0.107 percent.

In the case of foreign FSFs while Reliability (X_7) attribute was also the most significant factor, liquidity (X_2) was the additional significant factor that contributed positively to the customers' level of confidence. The size of impact coefficient was however higher for reliability attribute than liquidity attribute. A one percent increase in the customers' perception of reliability attribute, will improve the confidence level in foreign FSFs by 0.348 percent. A one percent increase in the customers' perception of liquidity attribute, will improve the confidence level in national FSFs by 0.13 percent.

Interestingly, reliability (X_7) was the only significant attribute that positively influenced the level of customers' confidence in the case of Islamic FSFs. A one percent increase in the customers' perception of reliability attribute, will improve the confidence level in Islamic FSFs by 0.312 percent.

Estimation results of pooling sample data of all the three FSFs yielded the overall picture of confidence level of customers in the study. Here again the results were similar to the national FSFs i.e., core attributes - reliability and stability of earnings attributes positively significantly influenced the level of customers' confidence in FSFs in the study area (Dubai).

The study findings indicate that FSFs probably could more fully exploit customer insight competency. In this competency, all FSFs practice customer segmentation to gain customer insight, but most might not be realizing the full benefits from dividing a group of customers into distinct subsets to offer them customized services in terms of facilities, promotion, and pricing. Beyond the typical demographic criteria, these segments can focus on preferences, habits or even on the customers' value to the FSF. Throughout the FSFs, the majority of segmentation is traditionally performed in the first two stages of customer acquisition and customer retention based on demographics, habits and preferences, with the third stage, profitability management, remaining largely untapped. Probably, the

sample customers in the study are in the third stage of the life cycle, and need to be managed profitably by the FSFs by more fully exploiting their customer insight competency.

Factors Influencing Customers' Convenience level

As hypothesized, empathy-friendliness and courtesy of staff at the branch (X_{11}), assistance over telephone (X_{15}) (both are relation dimensional attributes); staff competency in advising at the branches (X_{12}) and over telephone (X_{18}) (both are core dimensional attributes) were the most significant attributes that positively influenced customers' perception of convenience in national FSFs. These are consistent with the earlier research studies on services satisfaction that reported positive influence of empathy, relation and core dimensional attributes on services satisfaction. The size of impact of these attributes on level of satisfaction was almost same. A one percent increase in customers' perception of each of these attributes resulted in 0.05 to 0.08 percent increase in the level of customers' satisfaction of convenience of FSF services. Surprisingly, three tangible attributes queue at the branch (X_9), time taken for completing transaction at the branch (X_{13}) and over phone (X_{19}) also positively significantly influenced the convenience level of FSFs. We had hypothesized a negative relation in these attributes for explaining the convenience level of FSFs. It is probable that, long queue at the branch and more time taken for completing transaction at the branch and over phone might imply that customers were prepared for these inconveniences sensing that they are getting additional benefits implicitly from these national FSFs through other services. It is to be noted that majority of the customers in national FSFs were of low income category (annual income < 50,000 AED) and of average income category (annual income between 51,000 to 100,000 AED) and these customers might value marginal benefits more from any kind of additional FSF services at the cost of marginal waiting time.

Relational attributes such as empathy - friendliness and courtesy of staff (X_{11}) and assistance over telephone (X_{15}) positively influenced the level of customers' satisfaction in foreign FSFs. In addition, tangible attributes such as wait time at the branch for opening account for loan or deposit services (X_{10}) and wait time for getting services over telephone (X_{16}) and time taken for completing transaction over telephone (X_{19}) positively influenced the level of customers' convenience in foreign FSFs. All these relations were as hypothesized except wait time for getting services over telephone (X_{16}) and competency of staff for advising customers on telephone (X_{18}) which were not as hypothesized had negative relation and the reasons are same as those adduced for national FSFs.

Interestingly, many of these attributes did not influence the level of confidence in Islamic FSFs. Demographic variables viz., gender and income category of customers significantly and negatively influenced the level of convenience in Islamic FSFs, which contradicted the hypothesis of positive impact of these attributes on the level of customers' convenience in Islamic FSFs. We can argue that these relations are plausible (even though they were contradicting the hypothesis) since, males in the sample (68%)[11] and higher income category (101,000 to 250,000 (24%) and above 250,000 (8%)) characterized sample customers of Islamic FSFs (Figure. 1). These groups of customers indicated their low level of satisfaction in the Islamic FSFs and possibly, they were well-informed, knowledgeable and expected improved facilities from Islamic FSFs comparable to foreign and national FSFs. This has implications for Islamic FSFs on retaining these customers by providing improved facilities to these groups of profitable customers. Empathy (friendliness and courtesy of staff over telephone banking (X_{17}) a relational attribute, and time taken for completing transaction at the branch (X_{13}) a tangible attribute positively significantly influenced the level of convenience in Islamic FSFs, which is consistent with our hypothesis.

[11] This result is consistent with the study findings of Jamal and Nasser (2003) who reported majority of customers in Abu Dhabi Commercial Bank (national FSF) were males.

Estimation results of pooling all the three FSFs yielded the overall picture of convenience level of customers in the study. The results were similar to the national and foreign FSFs i.e., competency of staff at the branches (core attribute); empathy i.e., friendliness and courtesy of staff at the branches, staff assistance over telephone (all relational attributes); and time taken for transaction at the branch and over telephone (both tangible attributes) influenced positively the convenience level of customers in FSFs in the study area (Dubai). Interestingly, the relation attribute viz., ambience at the branch such as design, spaciousness, cleanliness, appearance and layout, and a tangible attribute ATM network positively influenced customers' level of convenience. This did not figure out as statistically significant attributes when estimated individual FSF's-wise. The implication is that, all the FSF branches in the study area are laid out with good ambience, ATMs to conform to international standards since the majority of sample customers are expatriates with taste for these in FSFs, and customers are satisfied about these facilities.

Factors Influencing Customers' Affordability (Value/Price) of FSF services

Male customers who have long-term relationship with national FSFs rated home loan products (X_{28}) as statistically significant value attribute that satisfied them. This was the only FSF service that was statistically significant. Probably, these customers perceived that due to competitiveness in the study area, the national FSFs are offering the best rates to their customers on home loans compared to other FSFs. The impact coefficient indicate that, a one percent increase in the availability of home loan services by national FSFs would increase customers' perception of the value or affordability in national FSFs by 0.117 percent.

The results were quite different in case of foreign FSFs. Credit Cards, Savings accounts, and Insurance services were significant products that were perceived by customers of foreign FSFs as

satisfying and affordable. A one percent increase in the availability of these services from foreign FSFs would increase customers' perception of value or affordability by 0.03 to 0.07 percent.

It is interesting to note that personal loans and investment products were significant products that were perceived by customers of Islamic FSFs as satisfying and affordable. These observations are noteworthy as unlike conventional FSFs, there is no concept of interest in Islamic FSFs, and there is only sharing of profits. The concept of leasing (Ijara) is very much in practice and ownership of the asset rests with the lender until the loan transaction is complete. There is no compounding of interest if the loans are not repaid in time. Investment products are also structured on similar cultural principles. The impact coefficient was quite large. A one percent increase in these services results in 0.77 percent increase in the customers' perception level of affordability in Islamic FSFs.

In the pooled sample of all the three types of FSFs, home loan services was the significant product besides fixed/term deposits, that added value to the FSF customers in terms of satisfaction and affordability. The implication is that, there is untapped potential for the FSFs to design more home loans and provide these products to customers to realize higher level of customers' satisfaction in terms of satisfaction and affordability.

The study findings indicate that FSFs probably could more fully exploit fully exploit production /transaction processing competency for development of new financial services. Because, traditionally across FSFs, the new product development capability has not been cost-effective. One estimate states that 46 percent of resources devoted to the development and launch of new product is spent either on products that fail or that never even get to market (Cooper, 2001). In general, the pursuit of product innovation in the FSFs has been impeded by the restrictions inherent in siloed legacy systems, which limit the types of products (Lund et al., 2003). By involving all stakeholders early, FSFs can find ways to design innovative products that the market embraces – and the ones that the FSFs can deliver (in this study specifically home loans, credit cards, insurance services, fixed/term deposits).

Table.3 Summary of Significant Attributes of Customers[12]

Category of Outcome (Y_i i= 1,2,3) and Customer Attributes (X_i i=1.....29)	Dimensions	Variable Code	National FSFs	Foreign FSFs)	Islamic FSFs	Pooled FSFs
Demographic (Demo) attributes / variables						
Confidence Function: Choosing the particular FSF: Customer reasons are:		**Y_1**				
Stability of Earnings	Core	X_1	√			√
Liquidity	Core	X_2		√		
Accessibility	Core	X_3				
Reliability	Core	X_4				
Reputation	Core	X_5				
Riskiness being low	Core	X_6				
Longevity of relationship with FSF	Core	X_7	√	√	√	√
Convenience Function: Level of customer satisfaction on the following attributes:		**Y_2**				
Gender (Male=1; Female=0)					(√)	
Annual income range (Less than 50,000AED=1; Between 51,000 & 100,000AED=2; Between 101,000& 250,000AED=3; Above 250,000AED=4)					(√)	
Branch Ambience –Design, spaciousness, cleanliness, appearance etc	Relation	X_8				√
Queue at the branch - Teller	Tangible	X_9	√			
Wait time at the branch for opening account for loan or deposit or other services	Tangible	X_{10}		√		
Friendliness and courtesy of staff at the branch	Relation	X_{11}	√	√		√
Staff knowledge (competency) on services for advising customers at the branch	Core	X_{12}	√			√
Time taken for completing transaction at the branch	Tangible	X_{13}	√		√	√
ATM network	Tangible	X_{14}				√
Assistance over telephone	Relation	X_{15}	√	√		√
Wait time for getting services through telephone banking	Tangible	X_{16}		√		
Friendliness and courtesy of staff in telephone banking	Relation	X_{17}			√	
Staff knowledge (competency) on services for advising customers on telephone	Core	X_{18}	√	(√)		
Time taken for completing transaction over telephone	Tangible	X_{19}	√	√		√
Affordability (Value) Function: Level of customer satisfaction on the following products offered by FSF in terms of price		**Y_3**				
Age (Years)	Demo	Age	√			
Personal loans	Value	X_{20}			√	
Credit cards	Value	X_{21}		√		
Global accounts	Value	X_{22}				
Current accounts	Value	X_{23}				
Savings accounts	Value	X_{24}		√		
Investment products	Value	X_{25}			√	
Term/Fixed deposits	Value	X_{26}				√
Auto loans	Value	X_{27}				
Home loans	Value	X_{28}	√			√
Insurance services	Value	X_{29}		√		

[12] A tick indicates statistically significant attribute. A tick in parenthesis indicate negative sign on the attribute's coefficient.

As can be seen from Table.3, the customers' expectation of various services are varied depending on whether they are looking at the choice of confidence in the FSFs, or convenience of FSFs, or affordability of variety of services offered by the FSFs besides the customers' value system. This requires effective development of Customer Relationship Management (CRM), Production/ Transaction Processing, and Customer Insight as few of the core competencies across all layers of the FSF's organization to assist in fulfilling the unmet needs of the customers. In fact these expectations have been confirmed by an earlier study which stated that, reaching the higher 'states' of service excellence will contribute to a value-added service that is dependent on effective interaction and interrelationships among the organization's customers, employees, operations and organizational design (Duncan and Elliott, 2002).

The foregoing results are consistent with study findings of Harrison (1994), who investigated potential differences with respect to gender and household income. Harrison's study takes account of the fact that consumers often buy products in a "hierarchical" order, moving from relatively simple services such as day-to-day banking through savings and protection products to more complex investments. More financially mature customers have more financial services including those of complex nature. The concept is similar to that of the construct of experience employed by Jintook and Hogarth (1999).

Validation of GLS Model

The model was validated using both the sample data and the holdout sample. Besides Akaike Information Criteria (AIC) and high χ^2 (Chi-square) significance level, GLS model is considered valid based on the correct classification percentage across the three FSFs and across the three dimensions of customers viz., confidence, convenience and affordability of FSF services.

Fitted values of level of Customers' Confidence (Y_1), Customers' convenience (Y_2) and Customers' affordability (Y_3) were derived by applying 390 sample observations on the GLS model coefficients. These were compared with the actual dependent variables (Y_1, Y_2, and Y_3) to compute the correct in-sample classification percentages to evaluate the GLS model as to how far the model was dependable. Similarly, 166 observations, which were kept as holdout sample, were used on GLS model estimates. The rationale is that, if the model estimates are dependable, then how did it fare in the holdout sample? If the model estimates are reliable, then it should not only discriminate/classify the in-sample customers in the three functions, but also should be able to discriminate/classify the customers in the holdout sample. Figures 5 to 7 illustrate the validation results of the GLS model.

Customers' Confidence

Figure.5 depicts the correct classification of in-sample customers' confidence across the three types of FSFs. Overall, the model performed quite well across the three types of FSFs with weighted average[13] correct classification of 84 percent of both satisfied and not-satisfied customers in sample implying an overall 84 percent reliability on model results.

Figure 5A, displays correct classification of customers in the holdout sample across the three FSFs. Overall, the model performed quite well by classifying correctly both the satisfied and not-satisfied customers in the holdout sample across the three FSFs with a weighted average of 92 percent implying 92 percent reliability of the model on customers' confidence.

[13] Weights are 0.56 for national FSFs, 0.31 for foreign FSFs, and 0.13 for Islamic FSFs.

Firgure.5 Validation (In-Sample) of GLS Model on Customers' Confidence

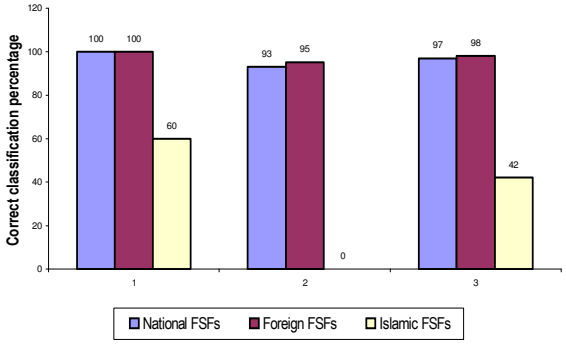


Figure.5A Validation (Holdout Sample) of GLS Model on Customers' Confidence

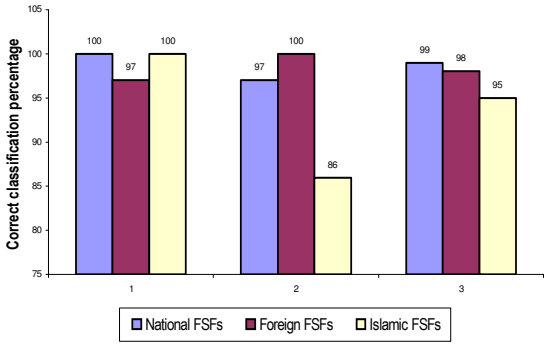


Figure.6 Validation (In-Sample) of GLS Model on Customers' Convenience

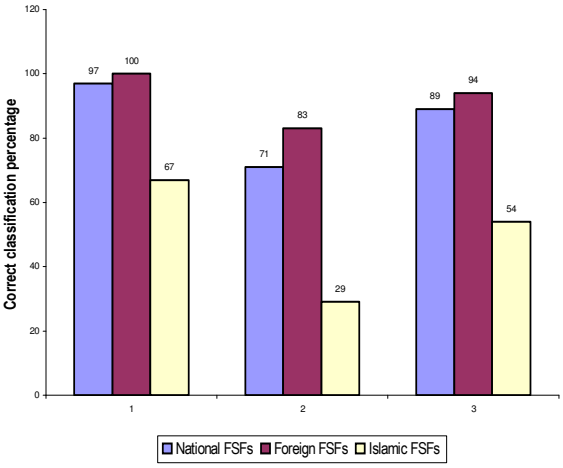


Figure.6A Validation (Holdout Sample) of GLS Model on Customers' Convenience

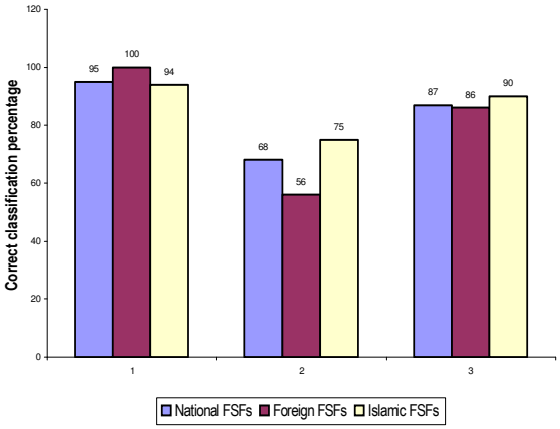


Figure.7 Validation (In-Sample) of GLS Model on Customers' Affordability

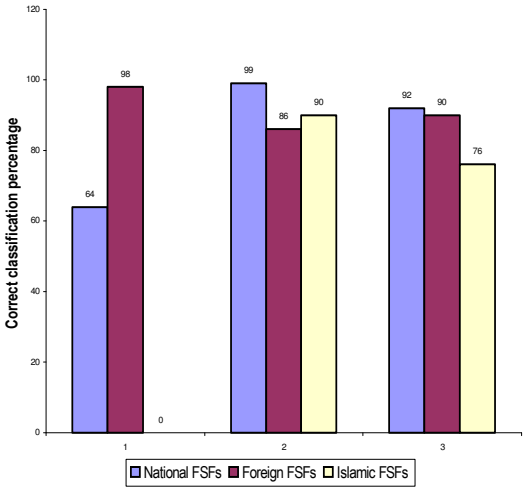
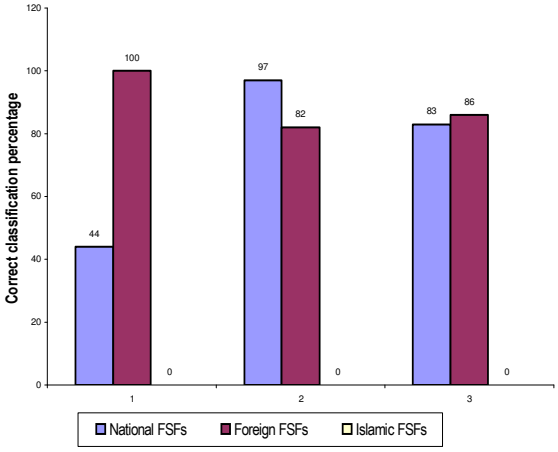


Figure.7A Validation (Holdout Sample) of GLS Model on Customers' Affordability



Validation of GLS Model on Customers' Convenience

Figure.6 depicts the correct classification of in-sample customers' convenience across the three FSFs. Overall, the model performed quite well across the three FSFs in-sample with a weighted average correct classification of 81 percent implying 81 percent reliability of model results.

Figure 6A, displays correct classification of customers' convenience across the three FSFs in the holdout sample. Overall, the model performed quite well by classifying correctly the customers' convenience with weighted average correct classification of 87 percent across the three FSFs, implying an overall reliability of 87 percent in the model to explain the attributes of Customers' convenience in FSFs.

Validation of GLS Model on Customers' Affordability

Figure.7 depicts the correct classification of in-sample customers' affordability of services across the three FSFs. Overall, the model performed quite well with a weighted average correct classification of 89 percent across all the three FSFs in the pooled in-sample implying 89 percent reliability of model results.

Figure 7A, displays correct classification of holdout sample customers' affordability across the three FSFs. Overall, the model performed quite well in the holdout sample by classifying correctly both satisfied and not-satisfied with the affordability of services across the FSFs with a overall weighted average reliability of 74 percent in the model of Customers' Value function.

In summary, the GLS model is a reliable model in case of national and foreign FSFs for explaining the behavior of customers in terms of three dimensions of confidence, convenience and affordability of FSF services. In the case of Islamic FSF, the confidence and convenience functions were moderately reliable and affordability function was not reliable. This is probably due to the small

sample of customers' responses in Islamic FSFs, which constituted merely 13% of the total sample both for estimation and holdout sample compared to 56% for national and 31% for foreign FSFs.

Section V
Conclusion & Implications

The study focused on customer decision process in the financial services firms, by analyzing the extent of reliability of FSF by customers, level of customers' confidence in these FSFs and the degree of affordability of various services offered by FSF. Generalized Least Square (GLS) framework was adopted in a systems context to model the customers' decision problem of why the customers choose a particular FSF by using multiple attributes to explain the customers' behavior with the rationale that, the customers make their choice of FSFs based on the level of confidence, convenience and value provided by the FSFs.

Cross-sectional survey data from 390 customers belonging to national FSFs, foreign FSFs and Islamic FSFs was used to estimate GLS, OLS and Logit models. Additional 166 sample observations were kept as holdout sample for model validation. The last two models were found inappropriate specifications based on Akaike Information Criteria, and χ^2 (Chi-square) significance.

An index of satisfaction was derived based on the customers' rating of individual attributes. Quantitative analysis was undertaken to analyze whether the qualitative behavioral results were significant or not.

Factors Influencing Customers' Confidence level

Stability of earnings and reliability were the most significant core dimensional factors that were rated positively by the customers in explaining their confidence in national FSFs. In the case of foreign FSFs while reliability attribute was the most significant factor, liquidity was the additional significant

factor that contributed positively to the customers' level of confidence. In case of Islamic FSFs, reliability was the only significant attribute that positively influenced the level of customers' confidence.

Factors Influencing Customers' Convenience level

Empathy attributes viz., friendliness and courtesy of staff at the branch, assistance over telephone (both are also relation dimensional attributes); and staff competency in advising at the branches and over telephone (both are core dimensional attributes) were the most significant attributes that positively influenced customers' perception of convenience in national FSFs. Three tangible attributes queue at the branch, time taken for completing transaction at the branch and over phone also positively significantly influenced the convenience level of FSFs implying that low and medium income category of customers preferred little inconvenience in these attributes as they benefited marginally by implicit additional benefits from the services of FSFs. Empathy attributes viz., friendliness and courtesy of staff assistance over telephone, and core attributes viz., competency of staff for advising customers on telephone and time taken for completing transaction over telephone all of these attributes positively influenced the level of customers' satisfaction in foreign FSFs. In addition, wait time at the branch for opening account for loan or deposit services and wait time for getting services over telephone were additional tangible attributes that positively influenced the level of customers' convenience in foreign FSFs. Interestingly, many of these attributes did not influence the level of confidence in Islamic FSFs. Demographic variables viz., gender and income category of customers significantly and negatively influenced the level of convenience in Islamic FSFs.

Factors Influencing Customers' Affordability (Value/Price) of FSF services

Customers who have long-term relationship with national FSFs rated home loan services as the only statistically significant value attribute that satisfied them. Credit Cards, Savings accounts, and

Insurance services were significant valued services that were perceived by customers of foreign FSFs as satisfying and affordable. Interestingly, personal loans and investment products were significant valued services that were perceived by customers of Islamic FSFs as affordable. In the pooled sample of all the three types of FSFs, home loan services was the single most significant services that added value to the FSF customers in terms of level of affordability. This implies that, there is tremendous opportunity for the FSFs to design more home loans and provide these services to customers to realize higher level of customers' satisfaction in terms of affordability of services of FSFs.

The GLS model was validated using holdout sample of 166 observations. The model performed quite well by classifying correctly both the satisfied and not-satisfied customers in the holdout sample across the three FSFs with a weighted average of 92 percent implying 92 percent reliability of the model on customers' confidence, 87 percent reliability in the model to explain attributes of Customers' convenience in FSFs, and 74 percent reliability in the model of to explain customers' value dimension of FSF services. This is considered quite reasonable classification percentages resulting in a high degree of confidence on the GLS specification in explaining the customers' decision-making process on the three FSF dimensions of confidence, convenience and affordability/value.

Strategic Implications

The study findings indicate that:

- Customers in the study are probably in the third stage of the customer life cycle, and need to be managed profitably by the FSFs using customer insight competency.
- FSFs could fully exploit production and/transaction processing competency for development of new financial services. By involving all stakeholders early, FSFs can find ways to design innovative products that the market embraces – and the ones that the FSFs can deliver.

Managerial Implications

Our findings imply that the core and relational dimensions of financial service quality are causal antecedents of customer satisfaction. The significance of the core dimension of service quality means that the management of FSFs has to make sure that things are done right the first time and they have to ensure that delivery promises to customers on financial services are kept. As far as the relational dimension is concerned, the bank management has to make sure that the employees are periodically trained so that the employees become not only more empathetic to customers to customers' expectations, but also are experts in their field so that they understand specific customer needs.

The study revealed that customer satisfaction has a direct bearing on value, quality of FSFs' service and loyalty. Given this finding, FSF managers should ensure that performance levels on all components of the service delivery system meet customer expectations of financial service. In effect, the FSF management and monitoring of financial service-encounters should lead to customer satisfaction. All staff must be trained and made to understand their role as relationship managers; and management, by continuously focusing on the importance of strong relationship marketing, should increase the probability of customer satisfaction and service loyalty. Moreover, to ensure customer satisfaction, staff should be empowered to deal effectively with problems should opportunities for financial service recovery arise. In this respect, customers should derive more value from the financial service experience.

The results also confirm our hypothesis that banking service quality leads to service value and favorable perceptions of FSFs' reputation. Based on this finding, FSF managers in conjunction with staff must set quality standards that guarantee both the functional and technical quality of financial services. Given that staffs are an important part of functional quality, i.e. the manner in which the service is provided to customers, internal marketing efforts must be directed at personnel to convince them that quality is part of their jobs. Indeed, the offering of friendly and reliable service to customers

over time should be a key objective of all the personnel at FSFs. Similarly, FSF managers in order to ensure prompt service must control the technical quality of services, i.e. what the customer gets because of his interactions with the FSF. In this instance, FSF managers should analyze every facet of the financial service delivery process and ensure that staff can offer good technical solutions to customers. Moreover, the process by which the financial services are offered to customers should continuously be monitored to guarantee that customers have access to financial services at all times.

Customers' assessment of service value was also found to impact on the FSFs' reputation. In the context of this study, customers believe that they are getting high value from home loan services. Given this finding, management should ensure the availability of home loans to different target to add further value. In addition, in order to position the FSF in the competitive environment, FSFs' managements should ensure that both the utilitarian and experiential benefits derived from financial service consumption are continuously promoted to customers. Indeed, convincing customers that they are getting high value from the financial institution should be a key advertising objective.
Customer satisfaction and overall core, tangible, relational and value dimension assessments were found to affect positively confidence, convenience and value functions of FSFs. The implication is that, in order to distinguish the offering from that of competitors, FSFs managements must view all financial service encounters as opportunities to provide superior service. The offering of reliable, error- free financial transactions should thus reinforce customers' confidence in the financial institution, and favorable attitude in the form of reputation assessments should motivate customers to resist competitive offerings. Consequently, marketing communications should stress the overall benefits provided by the FSFs.

Research Implications

The conceptual framework in the study used GLS system specification for modeling the customers' decision problem to explain the level of three dimensions of FSFs. Future research could explore the variants of systems approach by modeling the customers' decision framework as random utility model under the assumption that the individual customers make their choices to maximize their utility. These models take the form of general discrete choice such as multinomial probit, random parameters logit, nested logit etc. The attributes that describe each choice, i.e., the arguments that enter the utility functions, may be the same or different for all choices. Neural network models, which uses artificial intelligence framework, could also be investigated as alternative specification models for customers' decision problem to explain the significant attributes. All these models although are more complex in nature they are necessary as the customers have become more experienced, knowledgeable and their decision making is now more complex than ever.

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