

Exploring critical factors for choice of Mobile service providers and its effectiveness on Malaysian Consumers

¹Ahasanul Haque; ²Ismail Sayyed Ahmed and ³Sabbir Rahman

From the late 1990 to till now the growth rate of Malaysian telecommunication sector is remarkable manner. Under this circumstances new players to these businesses soaring dramatic business competition. Nowadays they are trying to attract customers by offering aggressive marketing strategy for instance: price promotion. As competition is looming among the companies, it deems a necessity for them to learn the consumers' inherent perceptions that can play significant factors in terms of choosing the tele-service providers. The aim of this study was to find out what were the factors that may have played significant role to select the telecommunication service providers. To accomplish the objectives, this research explains the related concepts and theories; revealed and synchronized literature on consumer perception. In general this research has an intention to develop a research framework grounded on a strong theoretical and literature review background. The survey instruments employed on Malaysian consumers included demographic background, price, service quality, product quality and availability, and promotional offers for consumer perception. Thus the structural equation modeling approach was necessary in order to examine the variables. The data analysis was conducted using SPSS and AMOS (Analysis of Moment Structure) with the software package for windows. From the result it is revealed that paths are related to the casual processes significantly. Among all the significant variables, from our result, Price is the most important among our respondents followed by Service quality, product quality and promotion. However, the findings of this study may provide needed feedback and contribute to the improvement of players' strategy and their marketing program.

Keywords: Mobile Telekom service provider, Consumer perception, price, service quality, and promotional offers for consumer perception.

Introduction

The growth rate in the use of telecommunication facilities has increased dramatically, especially in the rank of increasing number of telephone subscribers. The number of telephones for every 100 persons increased from 6.5 in 1985 to 12 in 1993 (Government Report, 1995). The fixed line penetration ratio had risen to 16.6 per 100 population and 21.0 per 100 populations respectively by 1995 and 2000 (Lee, 2001). Now Government of Malaysia plans to have a telephony penetration rate of 50% for the whole country and 25% for the rural areas by year 2020 (State of Hawaii Government, 2002).

1Faculty of Economics and Management Sciences, International Islamic University Malaysia, Box No. 10, 50728 Kuala Lumpur, Malaysia

2Management Center, International Islamic University Malaysia, Box No. 10, 50728 Kuala Lumpur, Malaysia

3Faculty of Economics and Management Sciences, International Islamic University Malaysia, Box No. 10, 50728 Kuala Lumpur, Malaysia

Therefore, the success of telecommunication industry depends on prudent efforts and feasible investments. In a competitive market, service providers are expected to compete on both price and quality of services and also it is necessary for the service providers to meet the consumers' requirements and expectations in price and service quality (Melody, 2001). Telephone, for example, provides ubiquitous social interactions between and among individuals, groups, organizations, and the governments alike and that subsequently makes and operates a broadly networked international environment tying nations, cultures, casts, creeds, national identities and businesses. Deutsch (1953) states this trend as "a web of nations". Today's development of communication technology ignores the global border and makes the world as "global village" (McLuhan, 1964). This reform of the communication technology since been expanded to include the transformation of the traditional voice telecom network into an expanded and enhanced information infrastructure, which is capable of communicating all forms of information content (Melody, 2003). The telecommunication system has been a fastest growing medium of communication rejuvenating global interface interactions. Since, currently telecommunication sector is experiencing phenomenal global change with the liberalization and privatization of the sector (Beard and Hartmann, 1999), which in turn, widens a fierce competition. The system has opened an ocean of opportunities for the potential consumers to enjoy versatile choices among the service providers. Now days, due to breathtaking competition, the telecommunication service providers tend to offer innovative services as well as competitive prices just to attract handful magnitude of customers. The nature of the competition today in the global telecommunications industry seems to centre on market activities that aim at gaining competitive advantages through strategic combinations of resources and presences in multiple products and geographical areas (Chan-Olmsted and Jamison, 2001).

Worth noting is that the telecommunication industry in Malaysia has also been a fastest growing sector keeping appropriate pace with global advancements, especially the mobile telecom market. This development has become a catalyst for the growth of the nation's commercial and industrial sectors. This telecommunication sector contributed much to the nation's economic growth and development which is consistent with the national vision 2020. The growth rate in the use of telecommunication facilities has increased dramatically, especially in the rank of increasing number of telephone subscribers. The number of telephones for every 100 persons increased from 6.5 in 1985 to 12 in 1993 (Government Report, 1995). The fixed line penetration ratio had risen to 16.6 per 100 population and 21.0 per 100 populations respectively by 1995 and 2000 (Lee, 2001). Now Government of Malaysia plans to have a telephony penetration rate of 50% for the whole country and 25% for the rural areas by year 2020 (State of Hawaii Government, 2002).

Scrutinizing the background of Malaysian telecommunication sector, competition can be seen as main factor by the telecommunication service provider companies. Companies like Sapura Digital Sdn. Bhd., Celcom and Mobikom Berhad have gone through a market evaluation stating the fact that their companies either should be merged with giant and more competitive companies or to be gone through potential bankruptcies. This reflects a fact as how the market is being penetrated and flooded by the competitors. Only Telekom Malaysia (TM) Sdn. Bhd., with its TM Touch services has managed to maintain its credible presence in the industry. TM has been ranked as one of the leading

telecommunication service providers in the entire Asia with significant investments in overseas. Beside TM, three other major companies have been operating in Malaysia namely Celcom, Digi and Maxis. These three service providers usually cover the following segments of the Malaysian telecommunication market traditional telecommunications, IP services, wireless and mobile markets and technologies, broadband markets and technologies. They also provide most sophisticated mobile services with an expanding number of value added services such as Short Message Service (SMS), Wireless Application Protocol (WAP), subscription services (SS), General Packet Radio Services, and Third Generation services. To modernize and to enhance telecommunications service growth rate, a competitive element was introduced in stages. The first step involved the incorporation of Telekom Malaysia (TM) in 1987 as a government-owned company. Later, new companies were licensed to provide certain services such as mobile cellular telephones, pagers, trunked radio, two-way radio system and other value-added services (Government Report, 1995).

The success of telecommunication industry depends on prudent efforts and feasible investments. In a competitive market, service providers are expected to compete on both price and quality of services and also it is necessary for the service providers to meet the consumers' requirements and expectations in price and service quality (Melody, 2001). Malaysian population, which is our group of consumers in this study, generally seeks some fundamental information about the mobile telecommunication service providers. Thus, it seems extremely important that a company competing in the sector must recognize the needs, wants, tastes, fashion criteria and the perceptions of their consumers in the first place. As competition has been escalating among the corporations, it is ardently necessary for them to learn about the consumers' perception about the price, promotion, product, service quality and other important factors that may have been playing a vital role in selecting the telecommunication service providers. Therefore, the major objective of this study is to cautiously examine the factors that have been affecting the consumers' perception to select mobile telecommunication service, particularly in the context of Malaysian. Malaysia has been among the most modern telecommunications networks in the region with fiber optic trunks in Peninsular Malaysia, satellite, VSAT (Very Small Aperture Terminal) and ISDN (Integrated Subscriber Digital Network) services. The digitization of the network is far advanced covering about 80 percent of the transmission lines with over 96 percent of the main lines connected to the digital exchanges (Sectoral Studies Report, 1999). This physical and structural transformation has gone through during the past fifteen years. The penetration rate of telephone in Malaysia rose up to 540 percent between 1985 and 2000 (Lee, 2001). Particularly, privatization and liberalization of the sector greatly helped the nation to reform the telecommunication and ancillary sectors and also admirably increased its competition among the service providers. Especially, in today's market, the mobile technology has been extremely competitive and service providers are moving aggressively to attract versatile customers by offering some meaningfully attractive promotions and services. In this turnaround situation, it is therefore, notably important to know the consumers' overall perceptions about the service providers on which future service delivery would largely depend. In this study we have tried to pin down the consumers' perceptions and their rejuvenating ideologies about the mobile telecommunication service providers and

their services. The outcome of the study would deliberately assist the future service providers to take passionate actions towards enriching customers' service experience.

Literature Review

The telecommunication has been part of a larger class of industries, public utilities, with similar technological, economic and public service characteristics by tradition. According to Melody (2001) public utilities is derived from the law in any country. Where the demand for a good or service is considered a common necessity for the public at large and the supply conditions are such that the public may not be provided with reasonable service at reasonable prices. This is a condition that a government takes state initiative to make smooth supply and delivery of utilities under the public overhead expenditure schemes just to provide an example of government's sympathy toward common citizen.

Service and Services Quality:

Service is a form of attitude which is related to satisfaction and also leads to consumer loyalty (Johnson and Sirikit, 2002) and future purchase. In particular consumers prefer service quality when the price and other cost elements are held constant (Boyer and Hult, 2005). It has become a distinct and important aspect of the product and service offering (Wal et al., 2002). According to Leisen and Vance (2001) service quality helps to create the necessary competitive advantage by being an effective differentiating factor. Service quality was initiated in the 1980s as the worldwide trend when marketers realized that only a quality product could not be guaranteed to maintain competitive advantage (Wal et al., 2002). Competitive advantage is a value-creating strategy, simultaneously which is not implemented by any existing or potential competitors (Barney, 1991). Moreover, according to them, a competitive advantage also sustained when other companies are unable to duplicate the benefits of this strategy. Service quality is essential and important for a telecommunication service provider company to ensure the quality service for establishing and maintaining loyal and profitable customer (Zeithaml, 2000; Leisen and Vance, 2001). Conversely, Johnson and Sirikit (2002) state as service delivery systems have the ability to allow managers of company to identify the real customer feedback and satisfaction on their telecommunication service. Since, quality reflects the customers' expectations about a product or service. Lovelock (1996) stated that this customer driven quality replaced the traditional marketing philosophies which was based on products and process. Service quality is different from the quality of goods. Since, services are intangible, perishable, produced and consumed simultaneously and heterogeneously (Zeithaml and Bitner, 2000). So, it sounds a major problem for the telecommunication service providers, especially for the mobile telecommunication service providers to deliver quality service consistently as changes in market compositions and competing characteristics have been surfacing incessantly. According to Wang and Lo (2002), marketing and economics quality often depends on the level of product attributes. They also state that there are two primary dimensions for quality in operations management. At first, fitness of use, which refers to product or services that is supposed to do and possess features to meet the customer needs. The other one is reliability, which represents the product that is free from deficiencies. Accordingly, it is important for a company to understand how customers perceive their service quality. Consequently, Rust and Oliver

(1994) pointed out that companies need to measure consumers' satisfaction with their products and services. Generally, service and product quality always lies in the minds of the consumers depending on individual buying capacity, buying behavior, demand, taste, and fashion criteria and obviously the competitive markets that provide significant differentiation strategies. Therefore, it seems a downright necessity for the mobile telecommunication service provider to communicate directly with the potential consumers for measuring possible quality attributes. According to Wal et al., (2002), quality reflects the extent to which a product or service meets or exceeds consumers' expectations. Wang and Lo (2002) studied on comprehensive integrated framework for service quality, customer value, and customer satisfaction and behavioral intentions of customers in China's mobile phone sector. They conceptualized factors with service quality as antecedents to customers' overall evaluation of service quality rather than dimensions or components of the construct. Herein, they found that the competition between two mobile phone service providers is more intense than ever. This competition is not only in ensuring network quality by a large amount of investment in network extension and upgrading but also in customer acquisition and retention by direct and indirect price reduction efforts.

H₁: Service quality has a significant influence on consumer perception in selecting mobile telecommunication service provider.

Price:

Price plays a vital role in telecommunication market especially for the mobile telecommunication service providers (Kollmann, 2000). It includes not only the buying price but also the call and rental charges. Generally, a price-dominated mass market leads to customers having more choices and opportunities to compare the pricing structures of diverse service providers. A company that offers lower charges would be able to attract more customers committing themselves to the telephone networks, and hence, significant number of "call minutes" might be achieved. According to Kollmann (2000), income from the number of call minutes determine the basic commercial success for the network providers. He also added that the success of the telecommunication sector in a market place largely depends on continuing usage and pricing policies, which need to be considered on several levels. Draganska and Jain, 2003 states that a common strategy for a company extending their product or service is to differentiate their offerings vertically. In this era of information age, price competition has become cutthroat in mobile telecommunication industry. Trebing (2001) mentioned that there are three sets of strategies for pricing behavior. The first is limit entry pricing, which is used for protection of the market position of the firm; second is the high access charges for new entrants, and the third one is tie-in sales to write off old plant or standard investment against captive customers. According to the author, limit entry pricing involves setting low prices in highly elastic markets to attract or retain large customers with monopolistic buying power, while maintaining high prices in inelastic markets.

H₂: Price has a significant influence on consumer perception in selecting mobile telecommunication service provider.

Product Quality and Availability:

Consumer's perception of product quality is always an important aspect of a purchasing decision and market behavior. Consumers regularly face the task of estimating product quality under conditions of imperfect knowledge about the underlying attributes of the various product offers with the aid of personal, self-perceived quality criteria (Bedeian, 1971 adapted by Sjolander, 1992). According to Sjolander (1992) the consumer behavior in modern market is different from the theoretical case of consumer decision making in free markets. Generally, free and competitive markets are composed of buyers and sellers each of whom must possess perfect information about all possible products and their respective utilities; a well defined and explicit set of performances; the ability to determine optimal combination of various products given their budget constraints; a knowledge of prices, which does not affect the subjective wants or satisfaction of the consumer. (Monroe and Petrosius, 1973 adapted by Sjolander, 1992). Notwithstanding the facts, it is necessary to define quality in the first place before it can be measured. Although, there is no global definition of quality exists (Sebastianelli and Tamimi, 2002), it can be defined in a varieties of ways. Yoon and Kijewski (1997) pointed out that quality can be categorized into two perspectives. One is the marketer's perspective, which is typically product-based or manufacturing-based and the other one is consumer's perspective, which is typically user-based or value-based. Generally, product quality from the marketer's perspective is associated with specific feature, function or performance of a product. On the other hand, product quality from the consumer's perspective is associated with the capacity of a product to satisfy consumer needs (Archibald et al., 1983). According to Lambert (1980), consumers often attribute quality to branded products on the basis of price, brand reputation, store image, market share, product features and country of manufacture. So, price is an indicator to measure the product quality, which is based on the theory that quality is a measure of the utility, or the want-satisfying capacity of products (Sjolander, 1992). The author has also added that the more the quality a product possesses, the more the utility it contains, and the higher the price it will obtain in an open market exchange. This means that similar products offered to the market at different prices, contain different amounts of utility, and that there is a direct relationship between quality and price. The actual price-quality relationship is a complex interaction between price, brand name, store image, product features, and brand awareness (Lambert, 1980; Gerstner, 1985).

Overall, the quality of a product is also related to the availability of the product's main functional features on one hand and the consumer's experience-in-use of the other auxiliary features on the other hand (Yoon and Kijewski, 1997). A product's main functional features are the sources of the primary benefits that the consumers expect to obtain when purchasing a product. In general, consumers' evaluations of a product's overall quality are related to the availability of these features in comparison with the competition (Lambert, 1980; Nowlis and Simonson, 1996). Hence, it is necessary for the telecommunication service providers to effectively communicate with the consumers for measuring the quality. Quality reflects the extent to which a product or service meets or exceeds consumers' expectations (Wal et al. 2002). Therefore, the success of the telecommunication sector in the market place significantly depends on product quality and availability.

H₃: Product quality and availability has a significant influence on consumer perception in selecting mobile telecommunication service provider.

Promotion:

Promotion is one of the medium which is used by organization to communicate with consumers with respect to their product offerings (Rowley, 1998). It is an important part for all companies, especially when penetrating new markets and making more or new customers (Kotler et al., 1999). The authors also state that promotion is the activities that communicate about the products or services and its potential merits to the target customers and eventually persuade them to buy. Generally, promotion is concerned with ensuring that consumers are aware about the company/firm and its products that the organization makes available to those consumers (Root, 1994). More specifically, the objectives of any promotional strategy are: increase sales; maintain or improve market share; create or improve brand recognition; create a favorable climate for future sales; inform and educate the market; create a competitive advantage, relative to competitor's products or market position; improve promotional efficiency. (Rowley, 1998). According to Alvarez and Casielles (2005), promotion is a set of stimuli that are offered sporadically, and it reinforces publicity actions to promote the purchasing of a certain product. Promotional offer consists of several different objects to create a better sale impact, for example, coupons, samples, premiums, discounts, contests, point-of-purchase displays and frequent-buyer programs. Each of the promotion techniques is intended to have a direct impact on buying behavior and perception about the company or service providers. The objectives of promotion will be reached to a greater extent when it is done sporadically, when the consumer does not expect it. Promotional actions must be well planned, systematically organized, and commonly integrated into the subject corporation's strategic marketing plan.

H₄: Promotion has a significant influence on consumer perception in selecting mobile telecommunication services provider.

Methodology

Since the major purpose of the study is to learn the consumers' perceptions to select the mobile telecommunication service provider in Malaysia, a self-structured questionnaire was developed to collect the required primary data from the consumers. The survey questionnaire consists of 5 distinct sections, each of which contains relevant questions pertaining different parts of the study. Questionnaires were systematically distributed utilizing a non-probability convenience sampling from walk-in customers at market places, educational institutions, pedestrians' walk-ways (footpaths), government and private institutions. Data collection process went through rigorous real-life impediments in view of time and cost constraints, and of course a large number of populations of mobile telecommunication services users in the country. Even though the sampling method adopted in this study contains limitations in terms of generalisability as compared to other probability methods of sampling, it was logically assumed that the sample represented the whole population of mobile telecommunication services users in Malaysia. There is enough similarity amongst the elements within the population to conclude that a few of the elements (the sample) will adequately represent the characteristics of the total population (Page and Meyer, 2000). Primary data was collected randomly from the consumers as a convenience sample from Kuala Lumpur, Gombak, Cyberjaya, Purrjaya, Serdang, Subangjaya, Penang, Johor, Melaka, Pahang, and Perlis. The survey was conducted mainly via face-to-face customer survey. Apart from the ability to reach a large number of respondents

and an inexpensive way to conduct the survey, the survey through e-mailing process also enabled us to collect the data, despite insignificant responses. Respondents were asked to assess the items on different constructs such as factors viewed as antecedents of service quality, price, and product quality in terms of their perceptions based on five-point scales. The descriptors range from strongly disagree, disagree, neither agree/nor disagree, agree and strongly agree. Data was collected from existing customers who had previously used mobile telecommunication services at least for a day.

A total of 670-sample sizes had been found to be valid and eventually distributed among the potential respondents for this study, of which 615 questionnaires were received. Each of the response received was systematically screened for errors, incomplete and missing responses. In some cases where respondents provided their identities, efforts were also taken to contact the subject respondents through e-mail for clarification and corrections, especially for missing or blanks responses. However, those responses that still contained questions in the survey questionnaire that had been remained unanswered or left incorrectly answered were finally discarded from data analysis in order to establish a rationality of analysis through proper representation. After having the screening process completed, only 583 responses were considered complete and valid for data analysis. This represents a success rate of 94%, which is considered to be extremely good in view of time, cost, certainty and geographical constraints. Factor analysis is used in the study to identify the salient attributes that have impact on consumers' perception to evaluate the mobile telecommunication services providers. Since, Factor analysis represents an analytical process of transforming statistical data (as measurements) into linear combinations of variables, it is a meaningful statistical method used for combining a large number of data into a considerably smaller number of factors with a minimum loss of information (Hair, et al., 1992). In addition, SEM (structural Educational Modeling) has been carried out to investigate the relationship among the variables which influence the consumers' perception choice in selecting the telecommunication services providers.

Results and Discussion

Reliability Coefficient

Reliability coefficient tested by using Cronbach's alpha (α) analysis. In order to measure the reliability for a set of two or more constructs, Cronbach alpha is a commonly used method where alpha coefficient values range between 0 and 1 with higher values indicating higher reliability among the indicators (Hair, et al., 1992). Hence, 1 is the highest value that can be achieved (Table 1). In accordance with the Cronbach alpha test, the total scale of reliability for this study varies from .9778 to .9974, indicating an overall higher reliability factors. The reliability of this study is substantial in every perspective, as the highest reliability value that can be achieved is 1.0.

Table 1: Reliability Analysis

	Mean	Std. Deviation
Service Quality (Alpha = .9778)		
Tangibles	3.36	1.04
Reliability	3.27	1.05
Responsiveness	3.30	1.07
Assurance	3.30	.96
Empathy	3.38	1.00
Price (Alpha = .9902)		
Satisfactory Price Charge	3.73	1.34
Price does not has impact	3.73	1.32
Services are desirable than price	3.76	1.29
Price plays vital role	3.77	1.27
Product Quality and Availability (Alpha = .9846)		
Product outlets available	2.44	1.42
Product outlets hardly reachable	2.55	1.43
Product offer best solution to need	2.55	1.46
Product offer best technology	2.53	1.38
Promotion (Alpha = .9974)		
Attractive promotional offer	3.60	1.18
Promotional offer does not attract	3.54	1.22
Real need than promotional offer	3.55	1.22
Consider services at the time of same promotional offer	3.58	1.18

Factor Analysis

The results obtained from 583 respondents have been thoroughly analyzed and the outputs of the results have been clearly explained in this section. Applying SPSS, the principal component analysis (PCA) was carried out to explore the underlying factors associated with 20 items. The constructs validity was tested applying Bartlett's Test of Sphericity and The Kaiser–Mayer–Olkin Measure of Sampling adequacy analyzing the strength of association among variables. The Kaiser–Mayer–Olkin measures of sampling adequacy (KMO) was first computed to determine the suitability of using factor analysis. It helps to predict whether data are suitable to perform factor analysis. KMO is used to assess which variables to drop from the model due to multicollinearity problem. The value of KMO varies from 0 to 1, and KMO overall should be 0.60 or higher to perform factor analysis. If this does not have achieved, then it is necessary to drop the variables with lowest anti image value until KMO overall rises above .60. Result for the Bartlett's Test of Sphericity and the KMO reveal that both were highly significant and eventually concluded that this variable was suitable for the factor analysis (Table 2).

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.911
Bartlett's Test of Sphericity	Approx. Chi-Square	10043.963
	df	349
	Sig.	.000

Deciding upon the number of factors that can be retained is difficult but initial runs-based on eignenvalues showed 4 factors. To determine the minimum loading necessary to include an item in its respective constructs, Hair et al. (1992) suggested that variables

with loading greater than 0.30 is considered significant, loading greater than 0.40 more important, and loading 0.50 or greater are very significant. For this study, the general criteria were accepted items with loading of 0.60 or greater. Not a single factor had been dropped out under this circumstance which means the factor analysis ran on an ultimate success. The result showed in table 3.

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Loadings		Sums of Squared
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.539	53.848	53.848	14.539	53.848	53.848
2	4.084	15.125	68.973	4.084	15.125	68.973
3	3.558	13.179	82.152	3.558	13.179	82.152
4	1.002	3.711	97.443	1.002	3.711	97.443
5	.146	.540	97.983			
6	.112	.415	98.398			
7	.068	.251	98.671			
8	.046	.223	98.923			
9	.022	.172	99.146			
10	.011	.123	99.318			
11	.009	.102	99.441			
12	.007	.080	99.543			
13	.006	.032	99.623			
14	.004	.022	99.936			
15	.004	.015	99.959			
16	.002	.008	99.988			
17	.001	.004	100.000			

The values of the following Table 4 indicate the affiliation of the items to a factor. Generally, the factor is the natural affinity of an item for a group. The higher loading (factor) indicates the stronger affiliation of an item to a specific factor. The findings of this study indicate that each of the four dimensions (Service quality, Price, Product quality, and Promotion) was homogeneously loaded to the different factors. That means each of the five dimensions that loaded into four different factors, all have proven as significantly related to the consumers' need.

Table 4: Factor Loading Matrices Following Oblique Rotation of Five-factor Solutions

Descriptions	F1	F2	F3	F4
Service Quality				
Tangibles		90		
Reliability		83		
Responsiveness		81		
Assurance		85		
Empathy				
Price				
Satisfactory Price Charge			71	

Price	11.48	2	0.00	0.98	0.85	0.99	0.02		0.99
P1								0.87	
P2								0.88	
P3								0.89	
P4								0.83	
Product Quality	6.32	2	0.04	0.98	0.93	0.99	0.04		0.98
PQ1								0.78	
PQ2								0.97	
PQ3								0.80	
PQ4								0.77	
Promotion	7.54	2	0.02	0.99	0.91	0.98	0.04		0.99
PRO1								0.93	
PRO2								0.80	
PRO3								0.72	
PRO4								0.65	
Perception	6.33	2	0.04	0.98	0.92	0.98	0.05		0.78
PER1								0.59	
PER2								0.79	
PER3								0.84	
PER4								0.53	

Parameter estimates. Table 5 shows that all the parameter estimates (i.e. factor loadings) are statistically significant and range from 0.53 to 0.97. Reliability. The degree of consistency of a measure is referred to as its reliability or internal consistency. The reliability coefficient, Cronbach's α (Cronbach, 1951), is generally used to test the reliability of a scale. α values of 0.70 or greater are deemed to be indicative of good scale reliability (O'Leary-Kelly and Vokurka, 1998). The Cronbach's α for the five factors range from 0.78 to 0.99, suggesting that they are all reliable. Content (internal) validity. Content validity depends on how well the researcher created measurement items using the relevant literature to cover the content domain of the variable that is being measured (Bohrnstedt, 1983). The selection of items in this study was based on an extensive review of the literature, giving a strong content validity to the variables being measured. Convergent validity. The Bentler-Bonett Normed Fit Index (NFI) obtained from CFA can be used to assess convergent validity. This index measures the extent to which different approaches to measuring a construct produces the same results (Ahire et al., 1996). According to a rule of thumb, NFI values of 0.90 or greater indicate an adequate model fit (Bentler, 1995).

GFI: The goodness of fit index, tells you what proportion of the variance in the sample variance-covariance matrix is accounted for by the model. This should exceed 0.9 for a good model. AGFI: Adjusted GFI is an alternate GFI index in which the value of the index is adjusted for the number of parameters in the model. Few numbers of parameters in the model relative to the number of data points.

Table 6: Fit Measures

Fit Measures	Main Model
X ²	8.922
Degree of Freedom (df)	10
Root mean square residual (RMR)	0.022
Goodness-of-fit index (GFI)	0.987
Adjusted Goodness-of-fit index (AGFI)	0.957
Comparative Fit Index	.990

Table 7: Standard Estimation of the Main Model

Standardized regression weight			S.E.	C.R.	P value	
H 1	Service Quality	Perception	0.362	0.077	4.698	0.000
H2	Price	Perception	0.458	0.072	6.326	0.000
H3	Product Quality	Perception	0.224	0.063	3.254	0.002
H4	Promotion	Perception	0.175	0.056	3.142	0.002

Hypotheses Testing:

The structural equation model was examined to test the relationship among constructs. Goodness-of-fit indicators for this model were chi-square/df = 0.892, GFI = 0.987, AGFI = 0.957, CFI = 0.990, RMR = 0.022. Figure 1.1 depicts the full model. Of the 4 paths hypothesized in the model, all the paths were significant at $p < 0.05$. Service Quality directly affects customers' perceptions in selecting mobile telecom. Therefore H1 is not rejected at 0.5 level of significance $p > 0.000$. Regarding the H2: Price has the direct effect on customers' selection process in telecom service. Our results also revealed that factor Price has positive effect on consumer perception in selecting telecom service. Therefore, this hypothesis is accepted at $p < 0.000$. The result showed that Product quality emerges as the important factor which affects customers' perception in selecting telecom service. The study shows the Product quality has positive impact on the customers' perceptions. Therefore, H3 is accepted as $p > 0.000$. Result indicated for H4: Promotion affects customers' intention in buying telecom service and this study shows the Promotion has positive impact on the customers' perceptions thus H4 is also accepted where $p > 0.002$. Among all the significant variables, from our result, Price is the most important among our respondents followed by Service quality, product quality and promotion. As a point of relevance, we see that a study by Wal et al. (2002) measured service quality at cellular retail outlets in the South African environment. The authors categorically focused on perception and expectation of service quality from the consumer's perspective. Results in that study also showed a significant relationship exists between the importance of a dimension to the customers and the perception about the service quality. So, based on this positive coefficient of the service quality, our study unanimously concludes that there is a significant positive effect of customization on the brand building process.

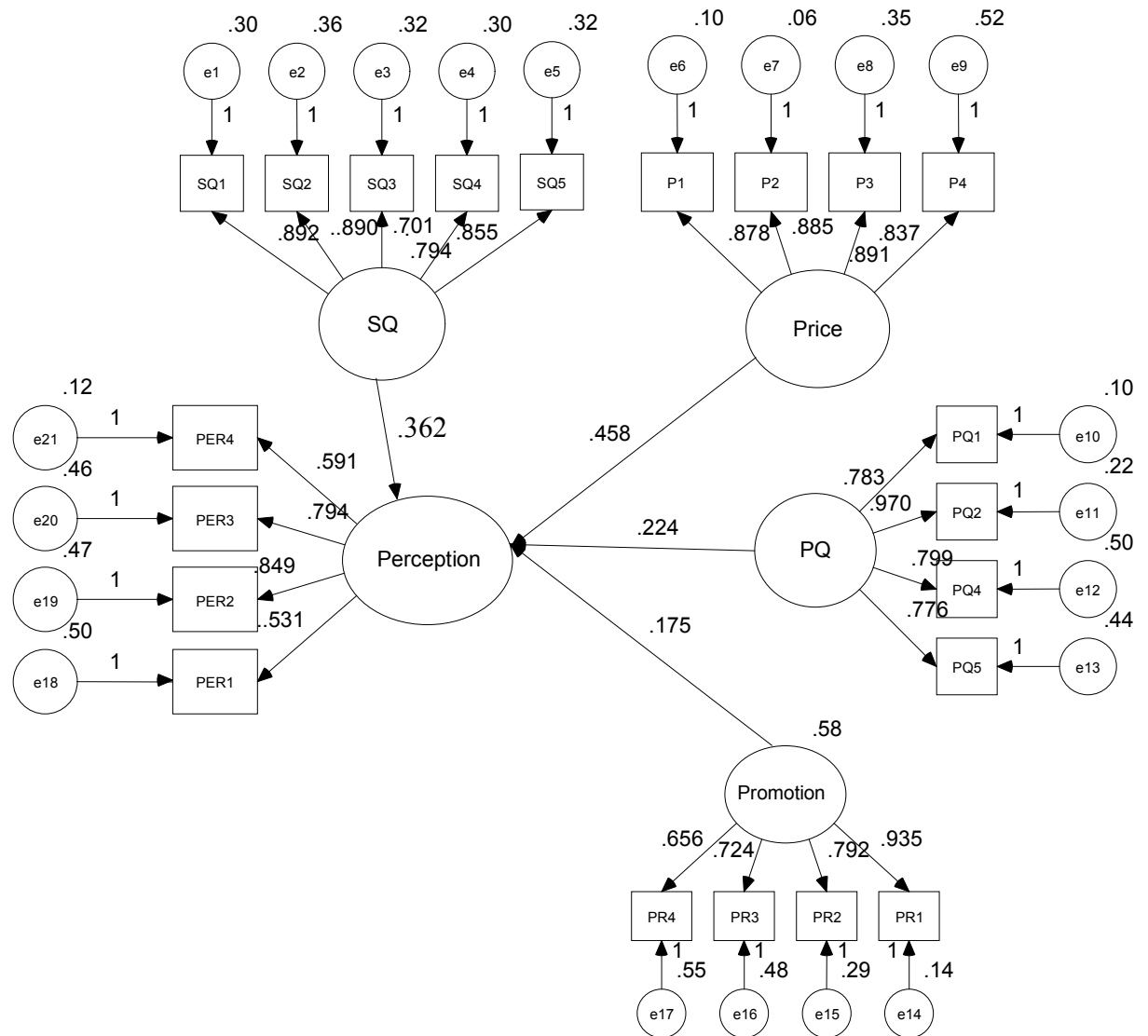


Figure 1.1: Degree of Relationship between Consumer Perceptions towards Service Quality (SQ), Price, Product Quality (PQ), Promotion

Success in the telecommunication industry depends not only on sales, purchase price, but also on call and rental charges. The special significance of the price for the decision to purchase is as undisputed in the telecommunications sector as it is elsewhere. This is particularly true in the mobile telecommunication sector as available studies suggest. Here, the choice of the telecommunication service provider is often connected with purchasing a new end-user set, for example, consumers consider the fixed connection costs and variable call charges (Kollmann, 2000). Hence, from the result of our study, we can deliberately conclude that price has significant positive impact on consumer perception choice in selecting telecommunication service provider in Malaysia. Hence,

product quality from the marketer's perspective is associated with specification, feature, function, or performance of a product. In general, consumer's post-purchase or after-use evaluation of a product's overall quality is positively related to the availability of the product's main functional features on one hand and the consumer's experience-in-use of other auxiliary features on the other hand. A product's main functional features are the sources of the primary benefits that the consumers expect to obtain when purchasing a product. (Yoon and Kijewski 1997) According to Quelch and Hoff (1986), consumer response to product quality also changes dynamically as experience builds up, information accumulates, and the cost of quality changes. Moreover, Nowlis and Simonson (1996) and Zeithaml (1988) show the consumers' evaluations of a product's overall quality are related to the availability of these features in comparison with the competition. However, our study shows that product quality and availability has a significant impact on consumer perception choice in selecting mobile telecommunication service provider and supported. Promotion has significant impact on consumer perception choice in selecting mobile telecommunication service provider since; it is used to communicate with the consumers with respect to product offerings. Promotion possesses a significant key role in determining profitability and market success. According to the study of Alvarez and Casielles (2005), promotional offer of a product states at the moment of purchase as an explanatory element of the process. Promotion is a tool that can help manufacturers and/or retailers in the achievement of their objectives (try the brand, help to decide what brand to buy, etc.). Immediate price reduction is a desirable technique that wields greatest influence on the brand choice process.

Conclusion and Implementation

This study was undertaken to examine and understand the consumers' behavioral perception choice in selecting mobile telecommunication service providers. As a general notion, consumers' perception is widely varied in accordance with the service quality, price, availability of product, and promotion, etc. Hence the service provider companies are characterized by the engagement in competition with each other to attract and acquire the potential consumers. Historically, the competition among the mobile phone service providers in Malaysia is more intense now than ever before. They compete not only for networking quality by a large amount of investment in network quality, network extension and upgrading, but also for the acquisition of new customers and retention of old customers by direct and indirect price reduction. Network quality is one of the important factors of overall service quality. According to our study, product quality, availability, and promotion are also significantly important factors to influence the consumers in Malaysia's vast mobile phone market.

Limitation of the Study and Direction to Future Research

The outcome of this research shows a comprehensively integrated framework for us to understand the vibrant relationships among several dimensions of service quality, price, product quality and availability, and promotion to have handful ideas on the consumers' perception. However, we still predict that further research efforts are being needed to examine these factors in Malaysia with additional samples before generalization can be made. Moreover, it is also needed to extend full-scale behavioral intensions of consumers upon mobile telecommunication service providers in order to match consumers' overall

behavioral patterns with the decision making criteria of the mobile telecommunication services providers.

Reference:

Alvarez, Begoña Alvarez and Casielles, Rodolfo Vázquez (2005), “Consumer Evaluations of Sales Promotion: The Effect on Brand Choice”, *European Journal of Marketing*, Vol. 39, No. ½, pp. 54-70.

Archibald, R.B., Haulman, C.A. and Moody, C.E. Jr (1983), “Quality, price, advertising, and published quality ratings,” *Journal of Consumer Research*, Vol. 9, March, pp. 347-56.

Barny, J. B. (1991), “Firm Resources and Sustained Competitive Advantage”, *Journal of Management*, Vol. 17, March, pp. 99-120.

Beard, Colin and Hartmann, Rainer (1999), “European and Asian Telecoms – Their Role in Global Sustainable Development”, *European Business Review*, Vol. 99, No. 1, pp. 42-54.

Bedeian, A. G. (1971), “Consumer Perception of Price as an Indicator of Product Quality”, *MSU Business Topics*, Summer, pp. 59-65, adapted by Sjolander, Richard (1992), “Cross-cultural Effects of Price on Perceived Product Quality”, *European Journal of Marketing*, Vol. 26, No. 7, pp. 34-44.

Boyer, Kenneth K. and Hult, G. Tomas (2005), “Customer Behavior in an Online Ordering Application: A Decision Scoring Model”, *Decision Sciences*, Vol. 36, No. 4, pp. 569-598.

Chan-Olmsted, Sylvia and Jamison, Mark (2001), “Rivalry Through Alliances: Competitive Strategy in the Global Telecommunications Market”, *European Management Journal*, Vol. 19, No. 3, pp. 317-331.

Deutsch, K. (1953), *Nationalism and Social Communication: An Inquiry into the Foundations of Nationality*, Cambridge: MIT Press.

Draganska, Michaela and Jain, Dipak C. (2003), “Consumer Preferences and Product-line Pricing Strategies: An Empirical Analysis”, Conference Paper, Marketing Science Conference, Maryland, Available at: http://faculty-gsb.stanford.edu/draganska/PDF_Files/1linelength_FL61.pdf, Accessed on 28 January 2005.

Gerstner, E. (1985), “Do higher prices signal higher quality?,” *Journal of Marketing Research*, Vol. 22, May, pp. 209-15.

Government Report (1995), “The National Telecommunication Policy of Malaysia (1994-2020)”, Report by Malaysian Government, Available at: <http://www.smpke.jpm.my>, Accessed on 12 December 2000.

- Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1992), *Multivariate Data Analysis*, 3rd Edition, Macmillan, New York.
- Johnson, William C. and Sirikit, Anuchit (2002), "Service Quality in the Thai Telecommunication Industry: A Tool for Achieving a Sustainable Competitive Advantage", *Management Decision*, Vol. 40, No. 7, pp. 693-701.
- Kollmann, Tobias (2000), "The Price/Acceptance Function: Perspectives of a Pricing Policy in European Telecommunication Markets", *European Journal of Innovation Management*, Vol. 3, No. 1, pp. 7-14.
- Kotler, P., Armstrong, G., Saunders, J., Wong, V., (1999), *Principles of Marketing*, Second Edition, Prentice Hall Inc. New York.
- Lambert, D.R. (1980), "Price as a quality signal: the tip of the iceberg," *Economic Inquiry*, Vol. 18, January, pp. 144-50.
- Lee, Cassey (2001), "Telecommunications Reforms in Malaysia", A research paper supported by the Centre on Regulation and Competition at the Institute for Development Policy and Management, University of Manchester, Available at: <http://www.cassey.com/fea2001-6.pdf>, Accessed on: 26 December 2004.
- Leisen, B. and Vance. C. (2001), "Cross-national Assessment of Service Quality in the Telecommunication Industry: Evidence from the USA and Germany", *Managing Service Quality*, Vol. 11, No. 5. pp. 307-317.
- Lovelock, C. H. (1996), *Services Marketing*, 3rd Edition, Prentice-Hall, Upper Saddle River, NJ.
- McLuhan, M. (1964), *Understanding Media: The Extensions of Man*, New York: Mentor in Levinson, Paul (2000), "McLuhan and Media Ecology", *Proceedings of Media Ecology Association*, Vol. 1, Available at: <http://www.media-ecology.org/publications/proceedings/v1/levinson01.pdf>, Accessed on: 12 December 2003.
- Melody, William H. (2001), "Introduction", *Telecom Reform Principles, Policies and Regulatory Practices*, Chapter 1, Edited by William H. Melody, Den Private Ingeniorfond, Technical University of Denmark, Lyngby.
- Melody, William H. (2001), " Policy Objectives and Models of Regulation", *Telecom Reform Principles, Policies and Regulatory Practices*, Chapter 2, Edited by William H. Melody, Den Private Ingeniorfond, Technical University of Denmark, Lyngby.

- Melody, William H. (2003), "Preparing the Information Infrastructure for the Network Economy", *World Telecommunications Markets: International Handbook of Telecommunications Economics*, Volume III, Editor: Edward Elgar, P. 27.
- Monroe, K. B. and Petroshtus, S. M. (1973), "Buyers' Perceptions of Price: An Update of the Evidence", *Journal of Marketing Research*, Vol. 10, February, pp. 70-80
- Sjolander, Richard (1992), "Cross-cultural Effects of Price on Perceived Product Quality", *European Journal of Marketing*, Vol. 26, No. 7, pp. 34-44.
- Nowlis, S.M. and Simonson, I. (1996), "The Effect of New Product Features on Brand Choice," *Journal of Marketing Research*, Vol. 33, February, pp. 36-46.
- Page, C. and Meyer, D. (2000), *Applied Research Design for Business and Management*, McGraw-Hill, Sydney.
- Quelch, J.A. and Hoff, E.J. (1986), "Customizing global marketing," *Harvard Business Review*, Vol. 64, May-June, pp. 59-68.
- Root, R. R. (1994), *Entry Strategies for International Markets*, Mcmillan Inc. New York.
- Rowley, Jennifer (1998), "Promotion and Marketing Communications in the Information Marketplace", *Library Review*, Vol. 47, No. 8, pp. 383-387.
- Rust, R. T. and Oliver, R. L. (1994) "Service Quality: Insight and Managerial Implications from the Frontier", *Service Quality: New Directions in Theory and Practice*, Sage Publications, London.
- Sebastianelli, Rose and Tamimi, Wabil (2002), "How Product Quality Dimensions Relate to Defining Quality", *International Journal of Quality and Reliability Management*, Vol. 19, No. 4, pp. 442-453.
- Sectoral Studies Report (1999), "Teleworking & Development in Malaysia", An UNU/INTECH Policy Research Project in Partnership with MIMOS Bhd. And UNDP, April, Vol. II, p. 1-37, Available at: <http://www.intech.unu.edu/research/past-research/Earlier%20projects/teleworking-malaysia-444/telecom.pdf>, Accessed on: 04 April 2004.
- Sjolander, Richard (1992), "Cross-cultural Effects of Price on Perceived Product Quality", *European Journal of Marketing*, Vol. 26, No. 7, pp. 34-44.
- State of Hawaii Government (2002), "Country Profile: Malaysia", Online Publications, Presentations, and Proceedings, Available at: <http://www.hawaii.gov/dbedt/ert/cp/malay.html>, Accessed on: 26 December 2004.

- Trebing, Harry M. (2001), "Emerging Market Structures and Options for Regulatory Reform in Public Utility Industries", *Telecom Reform: Principles, Policies and Regulatory Practices*, Editor William H. Melody, Reprint 2001, Schultz DocuCenter, Denmark.
- Wal, R. W. E., Van der, Pampallis, A. and Bond, C. (2002), "Service Quality in a Cellular Telecommunications Company: A South African Experience", *Managing Service Quality*, Vol. 12, No. 5, pp. 323-335.
- Wang, Yonggui and Lo, Hing-Po (2002), "Service Quality, Customer Satisfaction and Behavior Intentions: Evidence from China's Telecommunication Industry", *Info*, Vol. 4, No. 6, pp. 50-60.
- Yoon, Eunsang and Kijewski, Valerie (1997), "Dynamics of the Relationship Between Product Features, Quality Evaluation, and Pricing", *Pricing Strategy & Practice*, Vol. 5, No. 2, pp. 45-60.
- Zeithaml, V.A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, Vol. 52, July, pp. 2-22.
- Zeithaml, V.A. (2000), "Service Quality, Probability and the Economic Worth of Customers: What We Know, and What We Need to Learn", *Journal of the Academy Marketing Science*, Vol. 28, No. 1, pp. 67-85.
- Zeithaml, V. A. and Bitner, M. J. (2000), *Services Marketing: Integrating Customer Focus Across the Firm*, 2nd Edition, McGraw Hill, New York, NY.
- Anderson, J.C. and Gerbing, D.W. (1982), "Some methods for respecifying measurement models to obtain unidimensional construct measurement", *Journal of Marketing Research*, Vol. 19 No. 4, pp. 453-60.
- Bentler, P.M. (1992), "On the fit of models to covariances and methodology to the bulletin", *Psychological Bulletin*, Vol. 112 No. 3, pp. 400-4.
- Raykov, T. and Marcoulides, G.A. (2000), *A First Course in Structural Equation Modeling*, Lawrence Erlbaum Associates, Mahwah, NJ.
- Ahire, S.L., Golhar, D.Y. and Waller, M.A. (1996), "Development and validation of TQM implementation constructs", *Decision Sciences*, Vol. 27 No. 1, pp. 23-56.
- Cronbach, L. (1951), "Coefficient alpha and the internal structure of tests", *Psychometrika*, Vol. 16 No. 3, pp. 297-334.
- O'Leary-Kelly, S.W. and Vokurka, R.J. (1998), "The empirical assessment of construct validity", *Journal of Operations Management*, Vol. 16 No. 4, pp. 387-405

- Bentler, P.M. (1995), EQS Structural Equation Program Manual, Multivariate Software Inc., Encino, CA.
- Bohrnstedt, G. (1983), "Measurement", in Rossi, P., Wright, J. and Anderson, A. (Eds), A Handbook of Survey Research, Academy Press, San Diego, CA
- Venkatraman, N. (1989), "Strategic orientation of business enterprises: the construct, dimensionality and measurement", Management Science, Vol. 35 No. 8, pp. 942-62.