



Linking Cooperative Health Insurance Service Characteristics to Expatriates' Satisfaction: Mediating Role of Customer Knowledge

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Abstract

Extant empirical research has established a significant and positive relationship between Cooperative Health Insurance (CHI) service characteristics and expatriates' satisfaction. This study contributes in the existing literature by investigating the psychological mechanism underlying these relationships. Specifically, we incorporated customer knowledge as a mediating variable between CHI service characteristics and expatriates' satisfaction. A self-report survey-based was used to collect data from 384 expatriates employed by both service and manufacturing organizations located in five main regions of Saudi Arabia, representing Central region, the Eastern region, the Western region, the Northern region and the Southern region. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), we found a significant positive relationship between availability of CHI service is positively related to expatriates' satisfaction. Similarly, the results indicated that perceived service quality of CHI had a significant positive relationship with expatriates' satisfaction. As expected, customer knowledge was found to mediate the relationship between availability of CHI service and expatriates' satisfaction. In addition, we also found customer knowledge to be a significant mediating variable between perceived service quality of CHI and expatriates' satisfaction. Implications of the study in the Saudi Arabian context have been discussed.

Keywords:Product characteristics, Service characteristics, Perceivedservice quality, Customer Knowledge, Expatriates' satisfaction.

1. Introduction

Over the past three decades, rising costs of health care has become a major concern for employers around the world. For example, In New York's health care spending overall and per capita are among the highest in the nation has accelerated over time and is projected to increase to more than \$300 billion by 2020 (Rodin and Meyer, 2014). In the same vein, there has been an increase in employer health insurance premiums in the United States (US) between 2010 and 2013 (Schoen *et al.*, 2015). Specifically, in 2013, the annual total costs of employer-sponsored family premiums have skyrocketed in five states of US with the lowest costs (Alabama, Arkansas, Idaho, Mississippi, Hawaii) to \$17,262 to \$20,715 in the four highest-cost states (New Jersey, Massachusetts, New York, Alaska) and the District of Columbia (Schoen *et al.*, 2015). In Saudi Arabia, it was reported that over the past few years, medical insurance costs in Saudi Arabia have risen at around 15% per year, which posed significant challenge to most organizations, including those in the construction industry in terms of caring effectively for employees and containing benefit costs (Marsh Saudi Arabia, 2015).

In an attempt to spread the amounts that paid for an employee's medical expenses, many organisations around the world, including Saudi Arabia have decided to depart from the centralised and integrated model of health service delivery and financing in favour of Cooperative Health Insurance (Carrin *et al.*, 2005; Fotaki, 2006). CHI, also known as community-based health insurance refers to the "insurance coverage for those who are unable to benefit immediately from either a social or private health insurance plan. It is a variant of private health insurance that is community-run, but the contributions are not risk-related" (Shafie and Hassali, 2013). A further concern regarding this kind of community-based health insurance is clients' satisfaction. Clients' satisfaction "It is analogous to 'customer satisfaction' or patient satisfaction in healthcare delivery system (Faezipour and Ferreira, 2013). Because there is limited number of established studies on expatriates' satisfaction with CHI, a vast majority of literature for this study would be drawn from customer satisfaction literature in the marketing field.

Researchers have conducted numerous studies in the search for the underlying determinants of clients' satisfaction with health services (e.g., community-based health insurance services). To date, among the factors that have been found to be related to clients' satisfaction with CHI include

attitudes of CHI staff toward clients (Peprah, 2014) CHIs' service orientation (Andaleeb *et al.*, 2007) perceived value (Allahham, 2013) trust (Nogami, 2009) and word of mouth (Brown *et al.*, 2005; Naidu, 2009; Huppertz and Carlson, 2010). Despite the aforementioned empirical studies, there remain some key important factors that are yet to be investigated by the researchers (Germain, 2013). In this study, we sought to contribute to the existing literature by replicating and extending prior research that examined the direct relationships among two of these key factors (i.e., availability and service quality) and expatriates' satisfaction with community-based health insurance in Saudi Arabia. Specifically, besides considering the direct linkage of CHI service characteristics and expatriates' satisfaction, we also investigated the psychological mechanism underlying these relationships by proposing customer knowledge as a mediating variable.

2. Theory and Hypotheses

2.1. Availability of CHI Service and Expatriates' Satisfaction

Festinger (1957) dissonance theory postulates that consumers make some kind of cognitive comparison between expectations about the product and the perceived product performance (Peyton *et al.*, 2003). This view of the consumer post-usage evaluation was introduced into the satisfaction literature in the form of assimilation theory. According to Andersen and Newman (1973) consumers seek to avoid dissonance by adjusting perceptions about a given product to bring it more in line with expectations. Consumers can also reduce the tension resulting from a discrepancy between expectations and product performance either by distorting expectations so that they coincide with perceived product performance or by raising the level of satisfaction by minimizing the relative importance of the disconfirmation experienced (Olson and Dover, 1979).

From empirical research perspective, Sharif (2012) conducted a study to explore the link between category management practices (i.e., product assortment, product pricing, product presentation, product promotion, product availability and customer service) and their influence on customer satisfaction among 309 Kuwaiti grocery customers. They found that customer satisfaction was largely driven by product availability. In Malaysian context, Azhar *et al.* (2012) conducted a study among 387 hypermarket fresh food customers and found that product availability has a significant and positive relationship with customer satisfaction. The aforementioned contributions, lead to the following hypotheses:

Hypothesis 1: Availability of CHI service is positively related to expatriates' satisfaction.

2.2. Perceived Service Quality of CHI and Expatriates' Satisfaction

Prior research supports a positive relationship between perceived service quality and customer satisfaction (Chen, 2008; Chang *et al.*, 2009; Kuo *et al.*, 2009; Zhao *et al.*, 2012). In particular, Kuo *et al.* (2009) found that service quality significantly and positively influences customer satisfaction in Taiwan context. Using web-based survey, Chang *et al.* (2009) examined the interrelationships between the perception of e-service quality and customer satisfaction. Results showed a significant and positive relationship between perceived e-service quality and customer satisfaction. Zhao *et al.* (2012) assessed the effects of service quality on customer satisfaction among the users of mobile value-added services in China. They found a significant and positive relationship between service quality and customer satisfaction. Other recent empirical studies that demonstrated a significant and positive relationship between service quality and customer satisfaction include Izogo and Ogba (2015); Narteh and Kuada (2014); Paparoidamis *et al.*, 2015) and Bansal and Taylor (2015) among others. Therefore, the following hypotheses are advanced:

Hypothesis 2: Perceived service quality of CHI is positively related to expatriates' satisfaction.

2.3. Mediating Role of Customer Knowledge

As noted at the outset, besides examining the direct linkage between CHI service characteristics and expatriates' satisfaction, we are also interested in exploring the causal mechanisms behind this relationship. The research question is that: Why might CHI service characteristics be associated with expatriates' satisfaction? One plausible answer to this research question lies in the domain of customer knowledge. Previous studies on customer satisfaction with health insurance aimed at examining customers' perceptions in relation to a number of antecedent factors or determinants and the way these determinants relate to their satisfaction. However, limited research aimed at investigating the mediating variable underlying the relationship between the antecedent determinants and customer satisfaction (Velnampy and Sivesan, 2012). Hence, this represents one of the theoretical gaps in the literature. We therefore attempt to fill this void by examining the psychological mechanism of customer knowledge between CHI service characteristics and expatriates' satisfaction.

Velnampy and Sivesan (2012) believe that sufficient knowledge and awareness regarding CHI plans plays an important role in an effective wide-spread implementation of governance activities imposed by law makers. In addition, lack of awareness, knowledge and understanding of health insurance plans, rules and regulations concerning CHI has the potential to undermine the effectiveness of these initiatives, together with the overall quality and abundance of care that is received by the people living in the country, whether the nation's citizens or foreign workers who are working in these countries. Believing in the critical role the construct of knowledge plays in an effective implementation of CHI, Velnampy and Sivesan (2012) recommended that this construct be included in future work studies on service quality and customer satisfaction. As such, based on this argument, the following hypothesis can be proposed.

Hypothesis 3: Customer knowledge mediates the relationship between Availability of CHI service and expatriates' satisfaction.

Hypothesis 4: Customer knowledge mediates the relationship between perceived service quality of CHI and expatriates' satisfaction.

Based on the aforementioned theory and empirical research, a conceptual model for this study is has been developed as depicted in Figure 1. Specially, conceptual model shows direct effect of availability of CHI and perceived service quality of CHI (i.e., independent variables) on expatriates' satisfaction (i.e. dependent variable). The conceptual model further proposed that the links between availability of CHI, perceived service quality of CHI and expatriates' satisfaction might be mediated by customer knowledge.

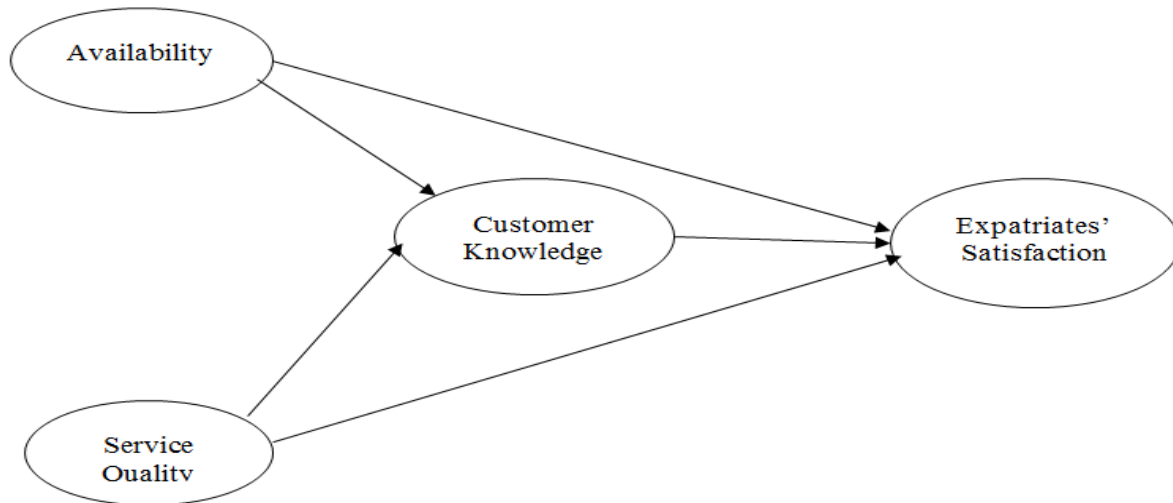


Figure-1. Conceptual model

3. Method

3.1. Participants and Procedure

Participants were 384 expatriates employed by both service and manufacturing organizations located in five main regions of Saudi Arabia, representing Central region, the Eastern region, the Western region, the Northern region and the Southern region. These organizations had implemented the Cooperative Health Insurance initiative. Specifically, we initially distributed 750 self-administered to the participants, and consequently 392 were completed and returned. Of the 392 questionnaires, only 8 were not usable. Hence, the remaining 384 usable questionnaires were used for the analysis of data. This study obtained a response rate of 53%. The participants' demographic characteristics are presented in Table 1. As shown in Table 1, the participants had diversified characteristics in terms of gender, age, marital status, educational background, citizenship, and length of service, among others.

3.2. Measures

3.2.1. Availability of CHI Service

Following comprehensive review of literature, we adapted eight items from extant research (McDonald and Kennedy, 2004; Coughlin *et al.*, 2008) to assess perceptions of availability of CHI service. An example item is, "CHI services are always made available to clients by the service providers," on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.2.2. Perceived Service Quality of CHI

Six items were drawn from Akter *et al.* (2013) user perceived service quality of mHealth scale to assess perceived service quality of CHI. An example item is, "The CHI providers are competent in providing service," rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.2.3. Customer Knowledge

We adapted eleven items from the work of Ensign and Gittelsohn (1988) to measure customer knowledge. Expatriates indicated the extent to which they agreed with each statement on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). An example item is, "People typically purchase health insurance as a 'guarantee' rather than an investment."

3.2.4. Expatriates' Satisfaction

We adapted six items from Tjihuis *et al.* (2003) to assess expatriates' satisfaction with CHI. An example item is, "the CHI providers knew a great deal about community-based health insurance," on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.2.5. Demographic Variables

Demographic variables such as gender, age, marital status job tenure, educational qualifications, and worker region were also incorporated into the questionnaire. Gender was measured as a nominal variable, while age and job tenure were treated as continuous variables.

Gender was coded using dummy variables with value “1” for male and “2” for female. The participants were asked to indicate their educational qualification. As such, educational qualification was also coded using dummy variables with “1” = “Artisan Certificate”, “2” = “Professional Certificate”, “3” = “Diploma”, “4” = “Bachelor Degree”, “5” = “Masters”, and “6” = “PhD”, Age was also denoted using dummy variables with “1” = 18-35 years, “2” = 36-50 years, “3” = 51-65 years, and “4” = 66 years and above. A similar coding system was applied to job tenure with “1” = Less than 1 year, “2” = 1-5 years, “3” = 6-9 years, and “4” = 10 years and above. Marital status was coded using dummy variables with “1” = Married, “2” = Single, “3” = Single, “4” = Divorced, “5” = Widow/Widower. Demographic variables are classified as in Table 1.

Table-1. Demographic variables

Characteristic	Category	Frequency	Percentage
Gender	Male	255	66.4
	Female	129	33.6
	Total	384	100
Age	18-35	88	22.9
	36-50	141	36.7
	51-65	143	37.2
	66 and above	12	3.1
	Total	384	100
Marital status	Single	51	13.3
	Married	236	61.4
	Divorced	76	19.8
	Widow/Widower	21	5.5
	Total	384	100
Education background	Artisan Cert	37	9.6
	Professional Cert	34	8.9
	Diploma	130	33.9
	Degree	76	19.8
	Masters	101	26.3
	PhD	6	1.6
	Total	384	100
Citizenship	African	46	12
	Asian	164	42.7
	Middle East	156	40.6
	EU and South America	18	4.7
	Total	384	100
Length of service	Less than 1 year	24	6.3
	1-May	122	31.8
	6-Sep	190	49.5
	10 Above	48	12.5
	Total	384	100
Category of occupation	Leadership	61	15.9
	Specialist	116	30.2
	Technician	95	24.7
	Labour	112	29.2
	Total	384	100

4. Analysis and Results

Before performing the main analysis, key multivariate assumptions, such as linearity, normality, and multicollinearity were checked and satisfied (Field, 2009; Hair *et al.*, 2010). Following these preliminary analyses, we employed partial least square (PLS) path modelling (Wold, 1974; Chin *et al.*, 2003) using Smart PLS 3.0 software (Ringle *et al.*, 2015) to test the proposed research model. We consider PLS path modelling as the most suitable technique in present study due to the following reasons. First, while PLS path modelling has the advantage of estimating the relationships between constructs (theory) and the relationships between indicators and their corresponding latent constructs (data) simultaneously (Henseler *et al.*, 2009; Hair *et al.*, 2011a; Hair *et al.*, 2011b; Hair *et al.*, 2013). Second, PLS path modelling has been established as a useful and preferred multivariate analysis technique in social and psychological research, including marketing, accounting, management, information systems, and operations management, among others (Hair *et al.*, 2011a; Hair *et al.*, 2011b; Henseler *et al.*, 2012; Hair *et al.*, 2013).

4.1. Measurement Model Results

To assess the psychometric properties of the scales adopted in the present study, individual indicator reliability, internal consistency reliability and discriminant validity were established. First, individual item reliability was assessed by examining the outer loadings of each construct's measure (Henseler *et al.*, 2009; Henseler *et al.*, 2012; Hair *et al.*, 2014) Following the rule of thumb for retaining items with loadings below 0.40 we deleted, which left us with 14 items out of 26 items. Thus, the retained items have loadings between .749 and .897 as presented in Table 2.

Table-2. Measurement Model

Construct/Indicator	Loadings	Composite Reliability	Average Variance Extracted
Availability of CHI service		0.875	0.638
CHISAVA1	0.749		
CHISAVA2	0.837		
CHISAVA3	0.807		
CHISAVA4	0.798		
Perceived service quality of CHI		0.887	0.723
CHISQ2	0.852		
CHISQ4	0.844		
CHISQ6	0.855		
Customer knowledge		0.898	0.688
CK3	0.763		
CK4	0.869		
CK5	0.878		
CK6	0.802		
Expatriates' satisfaction		0.919	0.790
FWS1	0.887		
FWS2	0.897		
FWS3	0.883		

We then established the internal consistency reliability of measures by checking the composite reliability coefficient was used to ascertain the. We followed the rule of thumb provided by [Bagozzi and Yi \(1988\)](#) that internal consistency reliability is achieved when composite reliability coefficient is 0.70 or more. As presented in Table 3, the composite reliability coefficient of each latent construct ranged from 0.875 to .919. Since composite reliability coefficient for each latent construct has exceeded the minimum acceptable level of 0.70, it can be concluded that the measurement model in this study has adequate internal consistency reliability ([Bagozzi and Yi, 1988](#)). Finally, we ascertained the discriminant validity of the measurement model by comparing the correlations among the latent constructs with square roots of average variance extracted ([Fornell and Larcker, 1981](#)). Following this rule of thumb, it can be seen in Table 3 that the square roots of the average variances extracted (values in bold face) were all greater than the correlations among latent constructs. Hence adequate discriminant validity is established.

Table-3. Discriminant Validity

Latent variables		1	2	3	4
1	Availability of CHI service	0.799			
2	Customer Knowledge	0.692	0.829		
3	Expatriates' Satisfaction with CHI	0.708	0.821	0.889	
4	Perceived service quality of CHI	0.734	0.758	0.833	0.850

Note. Entries shown in bold face represent the square root of the average variance extracted.

4.2. Structural Model Results

To assess significance of the path coefficients for the main model, we applied a standard bootstrapping procedure with a number of 5000 bootstrap samples ([Hair et al., 2014](#)). Additionally, test the hypotheses regarding indirect effect of availability of CHI service and perceived service quality of CHI on Expatriates' satisfaction through customer knowledge; we followed new procedures for estimating indirect effects in simple mediation models. ([Preacher and Hayes, 2004](#); [Preacher and Hayes, 2008](#)). This technique demonstrates high statistical power compared to the classical approach introduced by ([Baron and Kenny, 1986](#)). Consistent with the new procedures for estimating indirect effects in simple mediation models, two structural models were evaluated: (1) direct effect model, and (2) indirect effect model. Figure 2 present the significant paths for the direct effect model, which does not include a mediator variable. As shown in Figure 2, both availability of CHI service and perceptions of service quality were significantly and positively related to expatriates' satisfaction with CHI ($\beta = 0.197$, $p < 0.01$) and ($\beta = 0.698$, $p < 0.01$) respectively. As such, Hypothesis 1 and 2 are supported. Furthermore, the direct effect model indicated R^2 value of .0728 and Q^2 value of .559. This suggests that the direct effect model explains 72.8% of the total variance in expatriates' satisfaction with CHI. Hence, following [Falk and Miller \(1992\)](#) criteria, the construct expatriates' satisfaction demonstrated acceptable levels of R-squared values, since it has exceeded 10%. Furthermore, regarding the Q^2 value, the results in Figure 2 suggest that the direct effect model has predictive relevance, because the Q^2 value is greater than zero ([Henseler et al., 2009](#)).

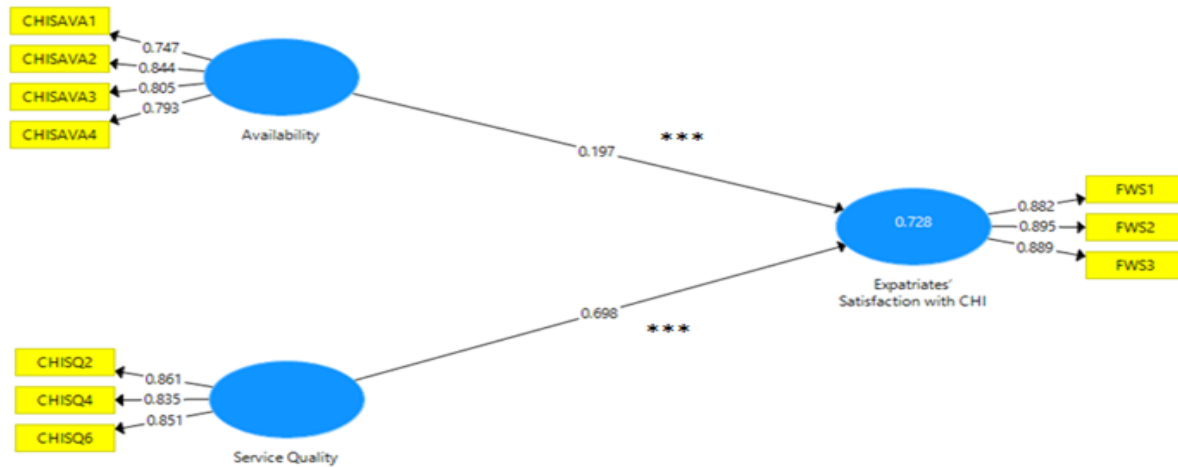


Figure-2. Direct effect model

Note. $R^2 = .0728$; $Q^2 = .559$

Following the testing of the direct effect model, we present the results of the mediating effect (Table 4). To establish mediating effect, the bootstrapped confidence interval values must be significant different from zero and the t-value must also be significant. As shown in Table 4, customer knowledge mediated the relationship between availability of CHI service and expatriates' satisfaction with CHI ($t = 5.125$; [.076; .171]). Hence, Hypothesis 3 is strongly supported. Similar results were obtained regarding Hypothesis 4, which predicted that customer knowledge mediate the relationship between perceptions of service quality and expatriates' satisfaction with CHI ($t = 9.089$; [.178; .276]).

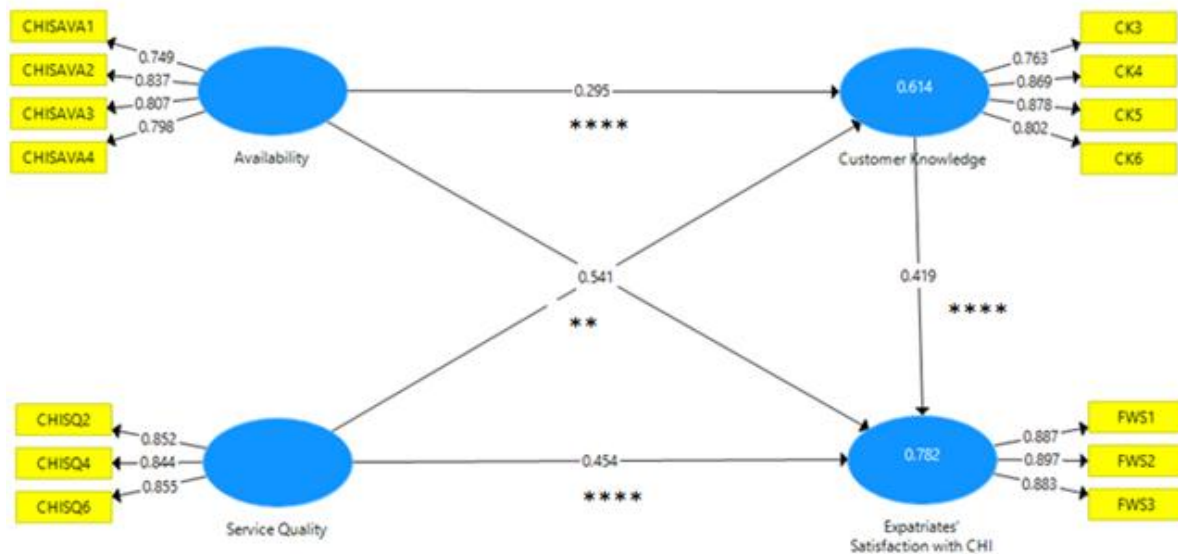


Figure-3. Indirect effect model

Note. $R^2 = .0782$; $Q^2 = .608$

Table-4. Results of the Mediating Effect

Hypotheses	Path a	Path b	Indirect Effect	SE	t-value	Bootstrapped Confidence Interval	
						95% LL	95% UL
H3	.295	.419	.124	.024	5.125	.076	.171
H4	.541	.419	.227	.025	9.089	.178	.276

5. Discussion

The main goal of this study was to examine the fundamental explanation why availability of CHI service and service quality are related to organisational commitment expatriates' satisfaction with CHI. More specifically, the present study investigated customer knowledge as a psychological mechanism underlying these relationships. The key hypothesis advanced in this study is that customer knowledge mediates the relationship between CHI service characteristics and expatriates' satisfaction. Before testing this hypothesis, the present study also examined the direct effect of availability of CHI service and expatriates' satisfaction, as well as the link between perceived service quality of CHI and expatriates' satisfaction with CHI. More specifically, the results from the direct effect hypotheses demonstrated that availability of CHI service is positively related to expatriates' satisfaction with CHI. This finding is not surprising because prior studies suggested that availability of CHI service is an important consideration in explaining customer satisfaction (Azhar et al., 2012; Sharif, 2012). As expected, the results further indicated that perceived service quality of CHI had a significant positive relationship with expatriates' satisfaction. The significant and positive relationship between perceived service quality and expatriates' satisfaction is also consistent with prior research indicating that perceptions of client's service quality is an important factor that influence expatriates' satisfaction with service provided to him/her (Chen, 2008; Chang et al., 2009; Kuo et al., 2009; Zhao et al., 2012).

We also found that customer knowledge mediated the relationship between availability of CHI service and expatriates' satisfaction, as well as link between perceived service quality of CHI and expatriates' satisfaction. This finding is congruent with [Velnamby and Sivesan \(2012\)](#) who believe that sufficient knowledge and awareness regarding CHI plans plays an important role in an effective wide-spread implementation of governance activities imposed by law makers. In particular, this finding suggests that cooperative health insurance service characteristics affect customer knowledge, which, in turn, is directly related to expatriates' satisfaction with CHI.

Although the present study makes important contributions regarding the mediating role of customer knowledge, however, it also has a number of limitations that suggest caution while drawing conclusion from the results. Firstly, the effect of common method bias is the most important limitation of the current study because all constructs were measured from single source and it is possible that common method bias is a major concern. Therefore, address this limitation; future research could measure the exogenous latent variables, endogenous latent variable and the mediating variable at different points in time. Secondly, The present study also offers quite limited generalizability as it focused mainly on workers employed in the five main regions in Saudi Arabia, namely the Central region, the Eastern region, the Western region, the Northern region and the Southern region. Consequently, future research could include local employees from various organisations (both public and private) in order to generalize the findings. Foreign workers should be studied and compared with local employees. Thirdly, the present study adopts a cross-sectional design which does not allow causal inferences to be made from the population. Hence, a longitudinal design in future needs to be considered to measure the theoretical constructs at different points in time to confirm the findings of the present study. Regarding the practical implication of the study, the results implies that CHI Providers should manage quality and customer satisfaction effectively by continuously redesigning a process of customer-focused culture and strategies that will meet environmental constraints of normal situation, peak demand, and emergencies ([Owusu-Frimpong et al., 2010](#)) This will go along in increasing the availability and quality of CHI service.

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