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The Moderating Role of Knowledge Management on the Relationship between Employees' Commitment and Total Quality Management: A Study on the Public Healthcare Sector in Saudi Arabia

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ABSTRACT

This current study investigated the relationship between employees' commitment and total quality management (TQM) in the public healthcare sector of Saudi Arabia. Furthermore moderating effect of knowledge management (KM) on the relationship between employees' commitment and TQM has been examined. The core of the paper showed the effectiveness of public health sectors employee's commitment to improve the TQM. Quantitative methodology for data analyses were employed to test the hypothesized model. A total of 259 questionnaires were distributed among the respondents, out of which 165 questionnaires were returned and only 154 were found useful in sense of completeness and usefulness for further analysis. The results of the analyses confirmed that there is significant direct effect of employees' commitment to improve the TQM and KM moderates the relationship between employees' commitment and TQM.

Keywords: Total Quality Management, Employees' Commitment, Knowledge Management, Partial Least Squares, Public Healthcare
JEL Classifications: M1, M12

1. INTRODUCTION

All over the globe and in most countries whether developed countries or emerging countries, healthcare represented mainly by hospitals remains an important sector providing basic and advanced health services to the people (Al-Adham, 2004). Hospitals comprise the largest expenditure category of the health system in developing or emerging countries. Therefore, despite the idea that their roles are seen as integral part in the health system and these roles are very well-recognized, hospitals are often the target of improvement and reform in terms of quality, efficiency, equity and their service delivery to people (Santos et al., 2008). These factors led to an increase concern about the services delivered by the hospitals and more importantly the quality of the services offered.

Patel (2008) documented the fact that billions of dollars have been spent on the betterment of health sector worldwide. But irrespective of the money spent for improvement of the health it seems to be "ineffective, inefficient and inadequate." This urges a need to carry out paradigm shift in the quality of the health sector services delivery by monitoring and sustaining the delivery of quality health services. This study proposed that the those institution which are quality conscious and committed to provide quality services with continuous improvement expected to gain more acceptance from the customers and in turn flourish on the expense of others. Patel (2008) suggested that total quality management (TQM) which aimed on improved customer satisfaction is an effective tool to enhance the quality services and consequently prospect of increased market share and profitability. In line with the above,

health sector institution especially the government sector should on their TQM practices improvement.

TQM has appeared in many definitions although there seems to be consensus among researchers of TQM that it is not easy to introduce a single definition for the construct of TQM (Santos-Vijande and Alvarez-Gonzalez, 2007). The researchers further elaborate that since the 1980s, when the (TQM) concept was firstly defined, researchers and practitioners alike have broadly reported a positive relationship between the construct of TQM and the overall effectiveness and performance of firms worldwide whether these firms produce products or deliver services.

Furthermore, an important gap in the previous work on TQM practices in the healthcare sector is that most of the previous studies attempted to examine the impact of a number of determinants on the implementation of TQM practices. However, scarce research seems to have been conducted on examining the moderating impact of some other factors that may influence the relationship between the antecedent determinants and TQM practices (Sadikog and Zehir, 2010). One of the important moderating factors that have been hypothesised to influence the relationship between the antecedent determinants and TQM practices is the construct of knowledge management (KM).

Another factor that emerged in the literature as an influential factor that affects an effective implementation of TQM practices is the construct of employees' commitment. As far as healthcare is concerned, the availability of highly skilled doctors, nurses, administrators, and other staff is important in achieving outcomes of high quality (Argote et al., 2000). Brown and Duguid (2003) believe that hospitals ought to adopt policies which guarantee focus on recruiting and at the same time retaining top-level doctors and nurses. In the Saudi public hospitals, there seems to be a problem with the availability of highly skilled physicians, nurses, administrators, and ancillary staff keeping in mind that such skilled employees are mostly foreign workers who normally work in private hospitals (Bedu, 2008). In addition, when workers come from different countries and cultural backgrounds, this could affect the communication between these workers due to cultural and language barriers for example and this could in turn influence their service delivery to patients. This it is important that these workers receive good training on communication and cooperation. A recommendation to include employees' capacity and training as determinant of effective implementation of TQM practices was given by Mukhalalati (2009) who conducted the study on TQM in the Qatari Healthcare Sector. Finally, this study aims to answer these questions does employees' commitment affect TQM practices in the public hospitals in Saudi Arabia? And to what extent does KM moderate relationship between the employees' commitment, and TQM practices in the public hospitals in Saudi Arabia?

1.1. TQM

The concept of TQM is said to mean that organizations attempt to continuously strive to fulfill or surpass the desire and hopes of customer whether these customers are external or internal (Malek and Kanji, 2000; Oluwatoyin, 2008; Rönnbäck and Witell, 2008) in allm processes in which everyone is committed to their continuous improvement. The concept of TQM brings together the best features and traits of the of any organization and this is done through or by means of reducing fear and doing the service right at the first time. This can be done through removing error, and obtaining inventory control without waste. TQM was introduced as a means of fulfilling a purpose or a goal, which has been set at the strategic level of the organization.

Organizations worldwide strive to achieve their objectives so that they can improve their positions in the market. Keeping in mind that today's market is highly competitive in nature where multiple companies produce the same product or deliver the same service, organizations strive to improve the quality of their products and services as to secure a good competitive advantage (Zhou et al., 2005). The researchers further elaborate that failing to do so would mean that these organizations are on the diminish track and there is a possibility that they would no longer be able to compete with other competitors. A number of research have highlighted the importance of quality management believing that it is the way to improve the quality of products and services provided to consumers which would in turn ensures a good competitive advantage in the market. In this context, Alharbi (2014, p. 23) argues that gaining a competitive advantage which is a paramount goal of all organizations will be achieved "when the organization has the conviction that implementing quality management can lead to enhanced quality." From this basic principle appeared the concept of TQM.

From the principles of TQM, the successful implementation of TQM involves defining and deployment of several critical success factors (CSFs) (Seetharaman et al. 2006). Saraph et al. (1989) conducted one of the pioneer empirical study that attempts to identify TQM CSFs. Afterword, various studies have been conducted that analyses TQM CSFs that indicates those factors which are helpful in successful implementation of TQM practices. Among those factors top management commitment, training, supplier management, strategic quality planning, customer focus, employee involvement, product and service design, process management and quality culture are identified as more influential factors towards TQM. These factors are crucial to measures the TQM practices in an organization.

1.2. Employees' Commitment

Regardless of the type of organizations whether they produce products or deliver services, employees working in these organizations are regarded as their main resources and the roles these employees play is highly influential in achieving the objectives of the organizations they work in. A number of researchers support this view; Armstrong (2006) argues that employees who work in an organization are regarded as the organization's most valued assets believing that these employees are the ones who individually and collectively contribute to the achievement of its objectives. The researcher goes on to elaborates that since an organization consist of people, the acquisition of these people, their development of different skills, their motivation for higher levels of achievements, as well as ensuring that their level of commitment are well maintained are all very important activities that have direct influence on the performance of any organization.

Consequently, the commitment of these employees and their willingness to accept and strive to achieve the objectives of the organization and also work on a collaborative nature are essential elements that employees should have in any given organization (Munizu, 2013). Other earlier researchers seem to support what Armstrong and Munizu believed in about the influential roles of employees in healthcare sector. In this context, Plek (1998) argues that that if every hospital employee sees himself or herself as crucial to the quality of health service delivered the attitude of the health workers (employees) will change significantly which would in turn leave a great impact on carrying out the objectives of the hospital.

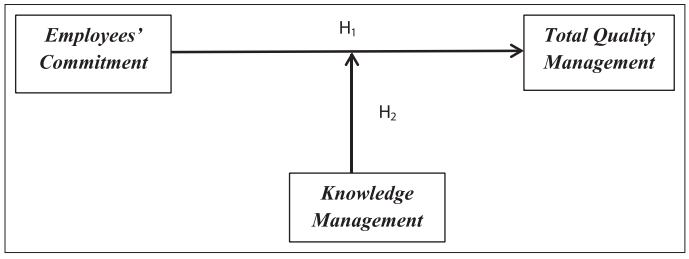
1.3. KM

KM is the methodology that refers to social affairs, controlling and communicating workers' learning capital through association. Learning in this way helps organizations to improve current authoritative business practices and procedures, bring efficient and more powerful procedures and methods to uproot excess methods. KM acts as an optimised and community oriented which synchronize the way of creation, foster the process of learning by effective utilization of an endeavour's learning resources. In organisation KM has become a standard need irrespective of size and growth. Catching an organization's most important knowledge (resource) and dispersing it viably over the undertaking is a business discriminating issue for some help work area, client backing and IT divisions. KM is not only defining knowledge technology aspects. KM act as a tool that empower and lead the resources to achieve business goals. The authoritative flotsam and jetsam from fizzled endeavors to force new specialized frameworks that are either improper to their workplaces, or where individuals are not eager to impart learning is adequate proof. Consequently the need of KM activity emerges to end up answer for such issues, which unites individuals, process and innovation and helps corporate to accomplish its objectives and vision. Information administration arrangements are presently the most imperative vital advancements for substantial organizations, as indicated by another report and overview of European officials by the Economist Intelligence Unit (EIU.com, 2005), supported by Tata Consultancy Services. In the study, 67% of organizations refer to information administration/business discernment arrangements as essential to accomplishing their key objectives throughout the following 3 years. KM used as moderation factor between employees commitment and TQM.

1.4. Research Framework and Hypothesis

Based on the literature review discussed in this paper, the model proposed for test in this study is presented in the Figure 1 below:

Figure 1: The research framework



Source : Ghamdi; et al.; (2016)

1.5. Employees' Commitment and TQM

TQM is a managerial philosophy and thus, its deployment does not only rely on the top management but also every employee of a firm (Hietschold et al. 2014). To that effect, commitment reflects the support and involvement of quality by individuals across all spectrum of an organisational hierarchy (Grover et al., 2006). That is to say, committed employees are thought to attain clear understanding of the organisational values, strategies, and policies. Additionally, they are believed to have clear vision regarding the utilisation of available resources, along the value chain Grover et al. 2006). Hence, employees' commitment fosters their involvement, eliciting quality culture as a determinant of strategic deployment of TQM (Nair, 2006). Guided by the previous discussion and in line with Barney's (1991) resources-based view, the research proposes the following hypothesis.

H_1: There is a positive significant effect of employees' commitment on total quality management.

1.6. The Moderating Influence of KM

KM, generally, is viewed in terms of process-oriented perspective; which in turn, is the manifestation of a set of strategies that are designated to create or acquire knowledge from internal and external sources; and then, access, assess, store, and share and apply that knowledge within the organisation (Lee and Choi, 2003; Alavi and Leidner, 2001; Sabatier, et al., 2005). In the pursuit of establishing the moderating role of KM over the previously outlined hypotheses and in line with Uhlaner et al. (2007) assessment, the current paper posit that KM the set of the aforementioned strategies and processes. To that effect, it is noteworthy that in reconciliation with resources-based view (Barney, 1991), it is believed that for a firm to improve the implementation of TQM, it needs to effectively manage acquired knowledge (Penrose, 1995). That said, theoretically, a firm might acquire such knowledge through internal and external sources. Hence, KM performance might improve both the levels of commitment and support of TQM practices through KM promotion of supportive activities in the pursuit of knowledge-sharing (Frank and Andreas, 2011). Motivating by this discussion, the following hypothesis is inferred.

H_2: KM has a moderating effect on the relationship between employees' commitment and TQM.

2. RESEARCH METHODOLOGY AND STATISTICAL DATA ANALYSIS

2.1. Measurement and Instrumentation

The measurement of the constructs were selected after review of extensive literature. Especifically, the scale of employees' commitment were taken from Albdour and Altarawneh (2014) as associated researches. Moreover, TQM measurements were taken from Demirbag et al. (2006). Finally, KM measurements adapted from Zheng et al. (2010) and Kamran and Sabir's (2012).

2.2. Population and Sample

The population of the current study consists of the total number of hospitals in Saudi Arabia were 259, Health Statistical Year

Book (2012). In order to test the proposed research model and hypothesized relationship, the data was obtained using a simple random sampling technique to select the hospital from the list of hospitals operating in Saudi Arabia. There were 259 questionnaire distributed among the respondent out of which 165 questionnaire were returned. After the screening process only 154 questionnaire were found useable for further analysis on the basis of completeness and usefulness. To test the empirical relationship of proposed research model, partial least squares structural equation modeling (PLS-SEM) was employed with the help of Smart PLS package 2.0. The detail of the analysis is given in the following section.

2.3. The Measurement Model

In the first step of the analysis, the validity and reliability of the measurement model was tested following prescribed ways of PLS-SEM and Smart PLS 2.0 package were used.

In order to test the hypothesis, the measurement model was assessed using PLS-SEM before actual hypothesis testing. In order to ensure goodness fit of the model, two steps were following. In this process, construct validity and discriminant validity was assessed. Construct validity includes factor loadings, composite reliability, Cronbach's alpha and convergent validity. Fornell and Larcker (1981) criterion was used to examined and confirm the discriminant validity.

2.3.1. Construct validity of the measurements

Construct validity is the ability of the items generated to measure some constructs appropriate enough to serve the purpose of measuring the concept for which it was designed (Hair et al., 2010). In addition to that, the items designed to measure specific construct should have higher loadings on their respective constructs rather than on other construct. In this current study to ensure that there should be no issue of validity, a comprehensive literature have been reviewed to select the item that have already tested and reported with high level of validity by previous researchers. The items were assigned correctly to their respective constructs on the basis of factor analysis results. The items of the constructs showing higher loadings on the specific constructs and all items were significantly loaded on their respective constructs (Chow and Chan, 2008).

2.3.2. Convergent validity of the measurements

Composite reliability of the constructs used in the current study are ranges from 0.944 to 0.817 (As showed in Figures 4 and 5). The values calculated in this current study are higher than recommended benchmark of 0.70 given by Fornell and Larcker (1981); Hair et al., (2010). The values of the average variance extracted (AVE) ranges between 0.809 and 0.535, which indicates a good and appropriate level of construct validity for the measures used in the current study (Barclay et al., 1995). The results of convergent validity of constructs in current study assures the convergent validity of the outer model. The details are shown in Table 1.

2.3.3. Discriminant validity of the measures

In order to test the discriminent validity for the measurement tool employed in this current study, method developed by Fornell and Larcker (1981) has been used. The square root of AVE of all constructs is placed on the diagonal of the correlation matrix. As the diagonal values of the elements were higher other elements in the rows and columns in which they are located, this process ensures that the discriminant validity of the outer model. The details of the AVE is given in Table 2 .

2.3.4. Prediction relevance of the model

The results that indicates the prediction ability of the tested model are given in Table 3, indicating that the cross-validated redundancy of TQM is 0.241 while the cross-validated community is 0.52. As per the criterion of Fornell and Cha (1994) the values >0 indicates that an adequate predictivity of the tested model.

2.3.5. Hypotheses testing

Hypothesized relationship were tested after assuring the goodness of fit of the model. The hypothesized model was tested using Smart PLS2.0 software and running PLS algorithm for empirical testing. The path coefficients were then generated, as illustrated in Figures 2 and 3.

As illustrated in Figures 2 and 3 and Table 4 the Employees' Commitment has a positive and significant effect on TQM at the 0.001 level of significance ($\beta = 0.473$, $t = 6.907$, $P < 0.001$) and KM has a positive and significant effect on TQM at the 0.001 level of significance ($\beta = 0.368$, $t = 5.120$, $P < 0.001$). Finally, KM has negative moderation effect on the relationship between employees' commitment and TQM at the 0.001 level of significance ($\beta = -124$, $t = 2.344$, $P < 0.01$). The results of the analysis of the collected data supports the proposed hypothesis H1, H_2 and H_3 of the current study. This finding indicated the importance of employees'

Figure 2: The research framework

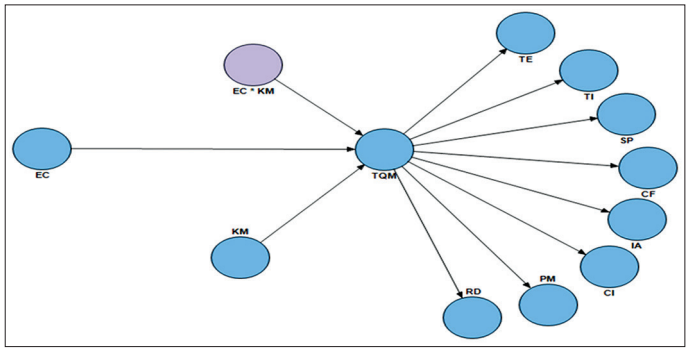


Figure 3: Path model results

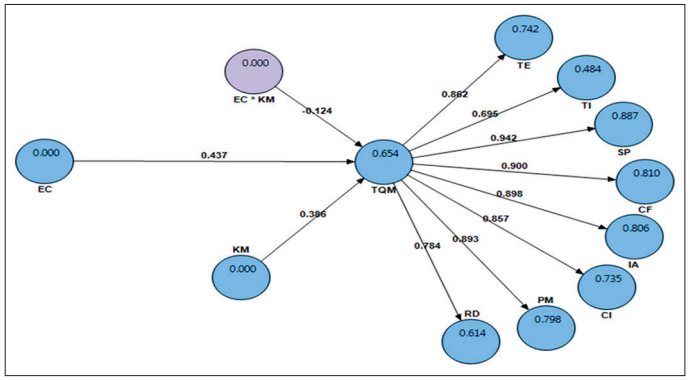


Table 1: Loading convergent validity

Variables	Items	Loading	AVE	Composite reliability	Cronbachs alpha
Customer focus	CF1	0.806	0.565	0.885	0.846
	CF2	0.681			
	CF3	0.646			
	CF4	0.754			
	CF5	0.802			
	CF6	0.803			
Continuous improvement	CI1	0.886	0.781	0.914	0.859
	CI2	0.893			
	CI3	0.871			
Employees' commitment	EC10	0.842	0.535	0.818	0.710
	EC3	0.553			
	EC8	0.740			
	EC9	0.760			
Information and analysis	IA1	0.836	0.701	0.933	0.914
	IA2	0.871			
	IA3	0.886			
	IA4	0.855			
	IA5	0.826			
	IA6	0.741			
Knowledge management	KM1	0.760	0.592	0.941	0.931
	KM10	0.707			
	KM11	0.767			
	KM2	0.803			
	KM3	0.741			
	KM4	0.756			
	KM5	0.761			
	KM6	0.762			
	KM7	0.740			
	KM8	0.766			
	KM9	0.886			
Process management	PM2	0.835	0.596	0.898	0.864
	PM3	0.774			
	PM4	0.784			
	PM5	0.659			
	PM6	0.771			
Role of the quality department	RD1	0.849	0.625	0.892	0.849
	RD2	0.860			
	RD4	0.821			
	RD5	0.758			
Strategic quality planning	SP1	0.796	0.622	0.919	0.896
	SP2	0.896			
	SP3	0.835			
	SP4	0.889			
	SP5	0.786			
	SP6	0.599			
	SP7	0.673			
Training and education	TE1	0.926	0.809	0.944	0.921
	TE2	0.890			
	TE3	0.908			
	TE4	0.872			
Teamwork and involvement	TI1	0.515	0.535	0.817	0.710
	TI2	0.813			
	TI3	0.764			
	TI4	0.794			

"[a]Composite reliability (CR) = (Σ factor loading)^2/{Σ (factor loading)^2+Σ (variance of error)}. [b]Average variance extracted (AVE) = Σ (factor loading)^2/{Σ (factor loading)^2+Σ (variance of error)}"

commitment and KM on TQM of the public healthcare sector in Saudi Arabia.

3. DISCUSSION AND CONCLUSIONS

The core aim of this study was to investigate the effects of employees' commitment on TQM of the public healthcare sector in Saudi as well as the moderation effect of KM in the mentioned direction.

The public healthcare sector in Saudi Arabia has been experiencing many challenges in the quality of the services provided. In this context, the RNCOS report (2009) stated that despite being amongst the most lucrative markets in the world, the Saudi

Table 2: Discriminant validity

Constructs	CF	CI	EC	IA	KM	PM	RD	SP	TE	TI
Customer Focus	0.751									
Continuous improvement	0.751	0.883								
Employees' commitment	0.664	0.705	0.732							
Information and analysis	0.766	0.737	0.588	0.837						
Knowledge management	0.662	0.707	0.644	0.574	0.769					
Process management	0.758	0.761	0.731	0.772	0.649	0.772				
Role of the quality department	0.682	0.620	0.644	0.637	0.583	0.761	0.790			
Strategic quality planning	0.812	0.797	0.693	0.825	0.645	0.800	0.661	0.789		
Training and education	0.703	0.714	0.606	0.742	0.634	0.751	0.531	0.853	0.899	
Teamwork and involvement	0.716	0.573	0.465	0.535	0.434	0.491	0.630	0.603	0.521	0.731

Table 3: Prediction relevance of the model

Constructs	R square	Cross-validated redundancy	Cross-validated communality
TQM	0.641	0.241	0.502

Table 4: Hypotheses testing

Hypotheses	Path coefficient	Standard error (STERR)	T value	P value	Decision
EC≥TQM	0.437	0.063	6.907	0.000	Support
KM≥TQM	0.386	0.075	5.120	0.000	Support
EC*KM≥TQM	−0.124	0.053	2.344	0.010	Support

Figure 4: Path model significance results

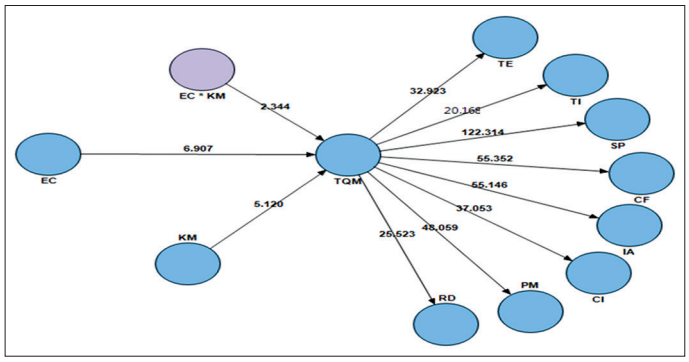
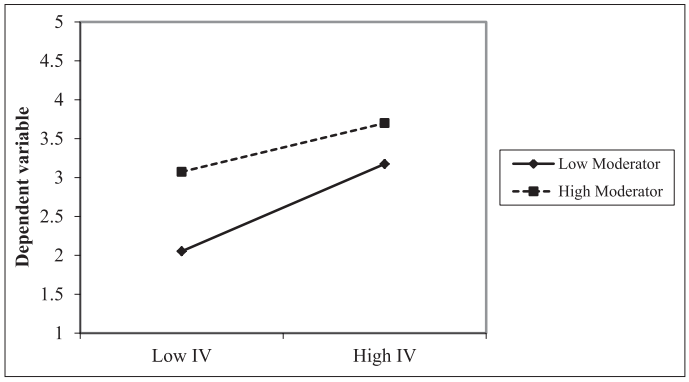


Figure 5: Moderating effect of knowledge management on the relationship between employees' commitment and total quality management



healthcare market faces a number of challenges. One of the biggest challenges is the lack of human resources. Around 80% physicians and more than 79% nurses working in the country are of foreign origin and have a very high turnover rate. The report also addressed other challenges that included the lack of skilled workers in the Saudi public healthcare sector, bureaucracy, being practiced in the Saudi public healthcare providers. Due to the importance of employees' commitment on TQM of the public healthcare sector in Saudi, hypothesis H_1 was tested and the results of analysis supported proposed hypothesis. These results clearly indicates the important of employees' commitment in the public healthcare sector in Saudi is considered to be one of the most factor determinants of TQM. It is noteworthy that findings of various studies that utilised different methodologies (e.g. Chen et al., 2002; Lakhal et al., 2006) suggest that employees' commitment is among the most critical forces for the implementation of TQM. The results of the current study are align with results of previous research studies such as, Zhang et al. (2000), Brah et al. (2002), (Nair, 2006). Hence, employees' commitment fosters their involvement, eliciting quality culture as a determinant of strategic deployment of TQM (Nair, 2006). Guided by the previous discussion and in line with Barney's (1991) resources-based view, the research proposes the following hypothesis.

The moderating effect of KM on the relationship between employees' commitments on TQM of the public healthcare sector in Saudi, the results supported the relationship proposed in H_2. KM strengthen the relationship between the two constructs (Rahman et al. 2013). Guided by this review and in line with the contingency theory (Schuler, 2000) and resources-based view (Barney, 1991). This result of the current study implied that in the situation of high level of KM lead to high level of employees' commitment then the TQM will be achieved.

The result of current study can be used by the academicians and public healthcare centres that aims to focus about compatibility and success of the healthcare sector and those factors that can be potential influence on the relationship between individual and partners.

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