Affecting Factors of Knowledge Sharing on CRM: An Empirical Investigation Using Structural Equation Modeling

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This study investigates the possible relationship between Knowledge Sharing (KS) strategies and CRM value strategies, where knowledge sharing dimensions i.e.,-leadership, trust and care, concept ba, knowledge culture and ergonomics role-affected on CRM value strategies-operational excellence, innovation process and customer intimacy-. It hypothesized a direct positive relationship between KS and CRM. Items representing the KS and CRM were developed from the findings of a wide review of literature that encouraging utilizes KS on CRM. To test this model we develop and validate a data collection instrument to capture the appropriate data, and then use SEM to examine the assertions of the model and suggest additional significant relationships among the factors of their model. The main findings suggested that companies under study should focus on and pay attention more to knowledge from customer to harvest CRM value.

Keywords: Knowledge management, Knowledge sharing strategies, CRM value strategies, structural equation modeling, Jordan.

1. Introduction

This study intended to identify the dimensions of knowledge sharing (KS) and CRM, and investigates the major determinants of CRM value strategy in the Jordan telecommunication. The major determinants identified, include leadership, trust and care, concept ba, knowledge culture and ergonomics role. This study utilized knowledge sharing strategies as the transferring of existing customer knowledge into\within organizations, employee and customer themselves based on Sveiby (2001) external structure theory to enhance customer relating capability of organizations. Sveiby (2001) defined external structure as "The structures are not objects; structures should be seen as constructed in a constant process by people interacting with each other". Accordingly, external structure is the process in which customer knowledge is collaborated and transferred from customer to customer, customer to employee and customer to organization, based on the accumulated customer's experience as a result of using products and\or services. In this study, the researcher conceptualized the utilization of knowledge sharing strategies in order to enhance the CRM value strategies which reflect overall on organization capability.

Recent researches suggest that Knowledge Management (KM) capabilities are the most significant critical success factor affecting Customer Relationship Management (CRM)

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impact (Salomann 2005). Choo (1996) emphasized on social construction of knowledge that leads to social networking process between organizations and customers also customers themselves. Customer Relationship Management (CRM) and Knowledge Management (KM) initiatives are directed the same goal "delivery of continuous improvement towards customers". Initiatives stemming from this goal have been labeled 'Customer Knowledge Management' (CKM) or 'knowledge-enabled CRM (Gibbert et al. 2002). However, due to a history of poor solutions coupled with CRM and KM integration, many organizations have a hard time justifying knowledge sharing initiatives in today's business world (Yu 2001). Many organizations have strived to enhance their customer-relating capability with knowledge management instruments to develop and understanding of evolving knowledge sharing enhancement to reflect on CRM value strategies -operational excellence, innovation process and customer intimacy-. This study aims to doing this to identify factors that influence for customer knowledge sharing activities in order to improve CRM. The research model and hypotheses was explained, followed by the research method, results and implications for practice and future research.

2. Literature Review and Hypothesis Development

In this study, the researcher explored empirically wide range dimensions of Knowledge Sharing (KS) strategies -i.e., leadership, knowledge culture, trust and care, concept ba and the role of ergonomics-. These dimensions are enabling sharing knowledge between customers and/or employee or each other. Also this study extended to which of these strategies are used to improve CRM value strategies. Ed-Peelenn (2005) mentioned "three value strategies disciplines: operational excellence, innovation process, and customer intimacy". This value can bring a whole set of tangible benefits. The variables and associated hypotheses are described below and presented in Fig. 1.

Leadership (LS): Organizations seek more innovative ways to compete; the ability of their leaders to generate new and valuable ideas becomes a fundamental survival skill. Considerable research has highlighted the importance of leader behaviors for team performance (Druskat and Wheeler 2003; Judge et al. 2004). The role of knowledge sharing in the empowering leadership-performance relationship is emergent. Knowledge sharing is a team process defined as team members sharing task-relevant ideas, information and suggestions with each other. Team efficacy is an emergent state that represents the belief of team members in their joint capability of executing certain behaviors necessary to attain a desired level of performance on specific tasks (Bandura 1997). The affect of leadership on knowledge sharing and team efficacy are both important determinants of team performance. Team process is a critical for knowledge sharing because if knowledge is not shared, the cognitive resources available within a team remain underutilized (Argote 1999). Knowledge sharing does not happen automatically in a team and the team's leader has an important role to play in making it come about. Empowering leadership can be contrasted with autocratic leadership and one of the central differences in the outcomes is that autocratic leadership inhibits knowledge sharing by team members (Yukl 2002). Thus, knowledge sharing is a potentially important benefit of empowering leadership. Yet, to the best of our

knowledge, this relationship has so far not been examined in any field study of teams. Consequently, supportive leader can be defined as someone who provides guidance to followers treats them fairly and recognizes their inputs as valuable. Accordingly, team members are likely to receive fair recognition by an empowering leader for their contribution of ideas and information, which motivates them to share their unique knowledge with one another. Hence, we hypothesize:

H1: Leadership is associated with knowledge sharing.

Trust and Care (TC): Trust is a multidimensional concept by nature. When mailing on 20 December 1999, Dr. Krogh differentiated between cognition-based and affect-based trust. Cognition-based trust is a rational view of trust and is associated with competence, ability, responsibility, integrity, credibility, reliability and dependability. Affect-based trust has more emotional connotations and related to issues like care, concern, benevolence, altruism, commitment, mutual respect. Further, there is distinction between calculative and non-calculative trust, calculative trust is based on the weights of the costs and benefits of certain actions and on a view of man as a rational actor. Non-calculative trust in turn is based on values and norms. Trust is an intangible factor that may either promote or inhibit knowledge sharing and there is no doubt that trust has positive aspect improve proper knowledge sharing process. In many organizations, informal networks are the primary means by which employees or customers find information, solve complex problems and learn how to do their work. Two forms of interpersonal trust-trust in a person's competence and in a person's benevolence-enable effective knowledge sharing in these networks. Yet, though conceptually appealing, trust is an elusive concept that is often difficult for managers to influence. Also Dr. Krogh stated that care is voluntary cooperation and voluntary giving, care extends far beyond trust. What I'm doing is simply looking at an instance of a process, mostly relationships among organizational members and inductively claiming something about what makes these relationships work more effectively, tacit knowledge-sharing is impossible without care, leadership is very strongly affected by caring but we need to find training programs for doing that for having that caring behavior in place. Hence, we hypothesize:

H2: Trust and care is associated with knowledge sharing.

Knowledge Culture (KC): Awad (2005) defined knowledge culture is usually embedded in organization core values, policies, mission, consistent behavior and treatment of employees. There are several dimensions of values and beliefs which making organizational knowledge culture "collaboration, commitment, competence, cooperation, creativity, motivation, participation, partnering, teams, truth and innovation" (Awad 2005). Thus, the researcher adopts these dimensions as a crucial for sharing customer knowledge. Culture is a reflection of the values and practices of the organization; it can serve to facilitate or restrict the flow of tacit knowledge can be benefitable in decisions, group learn quickly by observation what values and practices are acceptable, strategies for change need to be grounded in a clear understanding of the true organizational culture and the mental models that shape beliefs. A developmental culture and its values are consistent with opportunities and incentives for technology experimentation,

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the external environment and distributed decision-making, encourage learning meanwhile, monitoring and rewarding completed technology (Harrington and Guimaraes 2004). A culture supports participation and knowledge sharing should also be important in developing absorptive capacity. Harvey et al. (1998) stated that knowledge sharing across organizations is more of a cultural than a technical issue. Hence, we hypothesize:

H3: Knowledge culture is associated with knowledge sharing.

Concept ba (Cb): A strong group culture consistent would lead to success knowledge sharing atmosphere. Nonaka and Konno (1998) introduced 'ba' concept, mentioned that knowledge cannot be separated from the shared physical, virtual or mental space in which knowledge is created and used, this concept is necessary to specify the foundation required for knowledge management in teams. Eppler and Sukowski (2000) differentiate two basic layers of shared spaces that underpin successful knowledge work in teams. The first layer represents the communication infrastructure provided for teams, specifically a shared virtual and physical space, the second layer is comprised of shared norms and rules within a team; the shared 'mental space' as it is referred to by Nonaka and Konno (1998). Hence, we hypothesize:

H4: Concept ba is associated with knowledge sharing.

Ergonomics Role (ER): The ergonomist has several responsibilities in this area. These responsibilities are set against the background of understanding, supporting the productivity and profitability goals of the organization. This is in conjunction with the need to provide a safe and healthy work environment. Grossmith (2009) stated that "the ergonomist should determine whether there are stressors present in the task and environment, such as excessive force, high repetition and awkward postures that do not meet recommended ergonomics guidelines". The use of ER can increase worker productivity, quality and sharing knowledge. Employers and /or customers can implement a program that includes guidelines for employees to follow, contributes to an efficient work environment and transferring knowledge, prevents injuries and the development of chronic medical conditions and helps employees return to work after an injury has occurred (American OT Association 2009). This discipline aligns organization corporate, customer and governmental performance objectives into a holistic whole affect on environmental knowledge sharing. Hence, we hypothesize:

H5: Ergonomic role is associated with knowledge sharing.

Operational Excellence (OE): Employing operational excellence improves quality, effectiveness and frequent purchase that none of their competitors are capable of matching. OE affect on reduce cost, increase profitability, improve quality and more targeted customer communication. OE spend a great deal of time on innovate, or one-to-one relationships with customers. OE offer full guarantee low price and problem free services ensure production quality. OE composed of direct effects "savings relating to operational processes in direct marketing and data maintenance", indirect effects "fewer misses, greater productivity in sales", increased sales volume and additional business

which led to a ROI (Bligh and Turk 2004). The first goal of OE benefits strategy is cost saving, which reached for during CRM initiatives; the idea is that the technology will make it easier to reach customers, to sell to them and to service them (Shin 2006). Goals of management OE come in continuous improvement; continuous improvement is enabled via customer feedback, feedback gives the organization the opportunity to resolve complaints and improve day to day operations. Hence, we hypothesize:

H6: Operational excellence is associated with CRM.

Innovation Process (IP): Agile organization using innovation forum to gather insight and build perspective about improvements in relationship and marketing performance (Hippel 2005). Innovation led organization to create new products, new services and new markets. Hippel (1988) summarized that research have shown that many important industrial product and process innovations are developed within organizations where the product is used, rather than by organizations who manufacturer the product for sale to others. User innovation refers to innovations developed by consumers and end users, rather than manufacturers (Hippel 2005). The first stage in innovation is for someone to generate an idea, it is typically a technical insight into a product or process or thought about a service. Idea generation leads to opportunity recognition where someone can see an opportunity for developing the idea into a new product, process or service. The final stage of the innovation process is realization and in many cases exploitation where the customer makes the final evaluation. Hence, we hypothesize:

H7: Innovation process is associated with CRM.

Customer Intimacy (CI): Definition customer intimacy in simple words is dedication to customer; it can result in the solutions which exceed the immediate needs and demands of the customers. Customer intimacy developed strong and lasting relationships with customers to create innovative and unique solutions, by marrying their needs to organization capabilities. It's the largest source of growth, advantage and profit for both the organization and the customer. Customer satisfaction is a business term which is used to capture the idea of measuring how satisfied customer with organizations efforts in a marketplace or space (Hall 2004). According to Kotler (1997) "customer satisfaction and retaining has been labeled as defensive strategy. The goal of defensive strategy is the minimization of customer turnover (maximization of customer retention) through the protection of products and markets from competitive brands". Obviously, this trend is magnified by the rapid development of CRM systems and the adoption of the customer-centric orientation (Constantinos 2003). Hence, we hypothesize:

H8: Customer intimacy is associated with CRM.
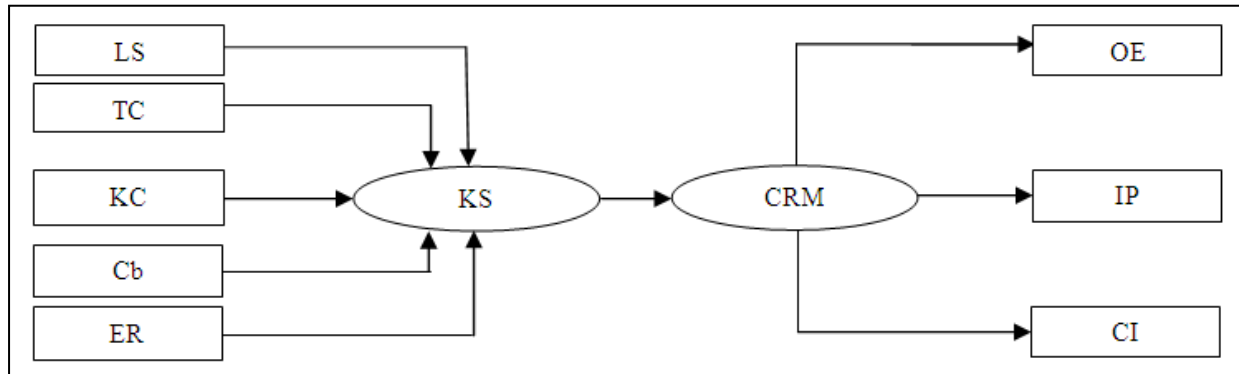
Fig. 1: The proposed model.

Figure 1 illustrated the relationship between knowledge sharing strategies and CRM strategies. Hence, we hypothesize:

H9: Knowledge sharing is associated with CRM.

The left rectangle of proposed model has shown an observed independent constructs affect on Knowledge Sharing (KS)"Leadership, trust and care, knowledge culture, ba concept and the role of ergonomics". The right rectangle of proposed model has shown an observed dependent constructs affected by applying CRM strategies "operational excellence, innovation process, customer intimacy". The oval shape Knowledge Sharing (KS) and Customer Relationship Management (CRM) considered latent variables. The sign represent hypotheses direct of the relationship between the independent and the dependent constructs. Some researchers have studied the impacts of one or some variables on knowledge sharing process. They adopted a micro-partial-view. In this study, a macro-systemic-view which takes into consideration the entire integrated knowledge sharing dimensions with CRM dimensions.

3. Materials and Methods

This section described the research instrument, sample and data collection strategy.

Research Instrument
To accomplish the objectives of this study, a quantitative approach was adopted. A questionnaire survey was developed based on the proposed model, extensive literature review, consideration of and comparison with existing validated survey instruments investigating similar issues. A 5-point likert scale was used to increase distinction between different levels. To test the questionnaire for clarity, evaluation and to provide a coherent research questionnaire, three academic reviewers specialized in MIS, CRM, and KM covers all the research constructs. The survey instrument was validated through a pilot test with a sample of 25 participants who were not included in the sample frame for the subsequent data collection. These provided insight into the formatting of items and indicated that acceptable levels of validity and reliability can be informative.

The Sample and Procedure

The segment of fixed and mobile telecommunications companies was the target of this study. The sense choice of single segment to the understanding of a phenomenon and over-generalization is avoided (Yin 1994). Thus, a single segment can add. Moreover, telecommunications companies can be characterized as knowledge organizations. These companies are: Jordan Telecom, Zain, Mobilecom, and Umniah. An average of 75 survey forms was sent to each company as a managerial stratified sample. This technique often used when dealing with med size samples. The strata sample was the departments and unit managers. 300 questionnaires were distributed. 208 questionnaires were returned within three months. All surveys were checked for quality. 10 Surveys were missing data and containing incompatible answers were excluded. The remaining (198) questionnaires were used in the statistical analysis. The response rate was (66%) and accepted for the research purposes (Sekaran 2003).Table 1 summarized the demographic characteristics of the respondents.

Table 1: Respondents demographics

Respondents demographics		Frequency	Percent
Level of education	Secondary school or less	3	1.5
	College	33	16.6
	Bachelors	150	75.7
	Higher education	12	6.2
	Total	**198**	**100**
Managerial level	Top management	28	14.2
	Middle management	98	49.5
	Operational management	72	36.3
	Total	**198**	**100**
Age	more than 50	7	3.5
	41-50	18	9.1
	31-40	54	27.2
	30 years or less	119	60.2
	Total	**198**	**100**
Gender	Male	124	62.6
	Female	74	37.4
	Total	**198**	**100**
Experience	5 years or less	102	51.5
	6-10 years	66	33.3
	11 or more	30	15.2
	Total	**198**	**100**

4. Model Analysis

Based on the nature of the research subject and its objectives, selected statistical analysis methods were used. So, in this study the data was analyzed in two stages. First, using SPSS17 package was undertaken to analyze the measurement scales. The factor analysis (Varimax method of orthogonal rotation) was also used to validate the scales and confirm the factors researched. Two criteria were applied in the data reduction process: Significance of factor representations and significance of item loading. According to the first criteria, eigenvalues were examined in order to determine the number of factors largely responsible for variation in the data, only factors with an

eigenvalue (or the total variance explained by the factor) greater than 1.00 was accepted. The second criteria, only those items with a loading of at least 0.50 on any of their associated factors were retained. Summated scale technique was utilized in order to merge several individual variables-loading significantly on a factor-into a single composite measure (Hair et al. 1998). Second, smart PLS 2.0 M3 was undertaken to test the research model. PLS does not provide summary statistics to assess the overall "fit" of the model. However, the variance explained by the path model (multiple R^2 for the endogenous construct) and the sign and significance of path coefficients are typically used to assess model fit. Therefore, researcher was able to evaluate the propositions and the measurements for the model in question simultaneously (Jarvenpa and Staples 2000).

Assessing the Measurement Model

The adequacy of the measurement model is determined by examining internal consistency, convergent and discriminant validities (Hulland 1999). Internal consistency is assessed by examining the loadings of the measures with their respective constructs. A generally accepted rule of thumb is to accept items with loadings of 0.70 or above, which suggests that there exists more shared variance between the construct and its measures than error variance (Hair et al. 1998). As shown in the in Table 2, all measures of reliability exceed 0.70 and thus deemed to be reliable. In Table 2, the diagonal values represent the square root of the Average Variance Explained (AVE), providing a measure of the variance shared between a construct and its indicators, or convergent validity. Hence, convergent validity is established since each construct has an AVE of at least 0.5 (Hulland 1999). For assessing discriminant validity, each within construct item must load highly on the construct it is intended to measure and cross-loadings need to be lower than the within-construct item loadings. All constructs meet this requirement. When assessing discriminant validity, items not loading highly on their own constructs, but instead loading on other constructs, were deleted (Table 2). Revised scales were subjected to the same validation process until acceptable psychometric properties were displayed.

Table 2: Questionnaire items

Items wording	Factor loading
Leadership My leaders support the processes of acquiring and disseminating of customer knowledge when needed.	0.74
My leaders encourage generation of new ideas and\or suggestions comes from customer.	0.86
My leader always celebrates distinguished achievements and announces them to all customers by organized meetings and a big celebration.	0.78
My leaders provide transparency and openness about ongoing activities to activate customers' participation in decision making.	0.73
Trust and care My organization takes advantage of customer competence, ability, responsibility, integrity, credibility reliability and dependability.	0.60
My organization takes advantage of emotional concept like customer care dimension.	0.74
My organization nurturing customer cooperation.	0.80
My organization considers trust and care factor increase knowledge sharing.	0.81
My organization offers mutual trust environment between employees and customers.	0.77

Knowledge culture	
Helpful books, manuals and online documents were available when customer had problems.	0.69
In my organization management encourages employees to learn from customers.	0.63
In my organization management supports values and norms.	0.65
My organization hires for openness of ideas.	0.66
In my organization management evaluate individual's performance and provide incentives based on sharing knowledge.	0.63
My organization encourages a nonhierarchical approach to knowledge. i.e., knowledge is appreciated no matter the hierarchical-level of the source.	0.69
Concept ba	
My organization provides right context physically.	0.78
My organization provides right context mentally.	0.83
My organization provides communication infrastructure necessary to share knowledge physically or mentally.	0.76
My organization facilitates"talk room, conference reports" to share knowledge.	0.78
My organization available space that support knowledge sharing outside.	0.83
My organization available time that support knowledge sharing outside.	0.61
Ergonomics role	
My organization provides a safe and healthy work environment.	0.60
The engineering and/or administrative dept. upgrades the furniture.	0.66
The engineering and/or administrative dept. considers the stressors associated with cumulative trauma disorders.	0.68
My organization designing highest person's environment.	0.72
My organization implement a program that includes guidelines for person to follow, contributes to an efficient work environment and transferring knowledge.	0.71
Operational excellence	
I think the CRM return on cost saving perspective.	0.69
I think the CRM in decreases profitability scales through cross-up or re selling (reverse).	0.83
I am happy the CRM in my organization improves efficiency and effectiveness.	0.73
I belief that CRM in my organization improves quality.	0.63
I think the CRM in my organization waste time (reverse).	0.50
Innovation process	
Employees alleged that CRM accelerates new services.	0.78
Employees perceived that CRM penetrates new markets.	0.77
Employees perceived that CRM assists on solving problems.	0.71
Employees seeming that CRM improves decrease complaints (reverse).	0.68
Employees supposed that CRM encourages customer communities.	0.64
Customer intimacy	
Applying CRM optimizes customer satisfaction and exceeds his expectation.	0.69
Applying CRM optimizing customer loyalty and retention.	0.72
Applying CRM optimizing word of mouth and viral marketing.	0.85
Applying CRM increases re-purchase and cross buying process.	0.81
KS and CRM	
My organization promoting an incorporated approach to sharing customers' idea.	0.73
We have systems that make it easy to find out lessons learned elsewhere in the customers.	0.67
When we solve interesting problems we share what happened with customers who might benefit.	0.80
We find customers feedback can be useful source of information, resources and support.	0.84
My organization really inspires the best in customers in the way of CRM performance.	0.88

*Extraction Method: Principal Component Analysis, **Rotation Method: Varimax with Kaiser Normalization

Table 2 illustrated that factor analysis have clear discriminant validity since all items-representing each of the previous constructs-are loaded on one factor. The factors both loadings and cross-loadings which established to measure discriminant validity are greater than the recommended level of 0.5. As can be seen from Table 3 Examine Kaiser-Meyer-Olkin measure of overall sampling adequacy (KMO) for each variable provides a means to assess the extent, to which the indicators of a construct belong together, i.e., a measure of the homogeneity of variables was taken and accepted. Because multiple items were utilized to measure each construct a summed variable was derived for the items representing each construct to represent the intended variable.

Table 3: Results of validity and reliability

Items frequency	AVE (%)	Cronbach's a	KMO
Leadership (LS)	59.1	0.78	0.86
Trust and Care (TC)	64.1	0.76	0.68
Knowledge Culture (KC)	61.9	0.74	0.71
Concept ba (Cb)	68.5	0.87	0.75
Ergonomics Role (ER)	70.0	0.70	0.72
Operational Excellence (OE)	47.1	0.71	0.70
Innovation Process (IP)	52.3	0.77	0.68
Customer Intimacy (CI)	60.1	0.77	0.73

Although many studies used 0.5 as the threshold reliability of the measures, 0.7 is a recommended value for a reliable construct. In addition, the weights and loadings of the measures in research model were accepted. As expected, all measures are significant on their path loadings at the level of 0.01. Each of the research constructs was tested for reliability and validity using Cronbach's (minimum 0.70).

Assessing the Structural Model
Assessment structural model was done in two steps. The predictive power of the model was assessed first, followed by an analysis of the hypothesized relationships among the constructs. The results are summarized in Fig. 2 and Table 4. Partial Least Squares (PLS) was chosen for analyzing the research model. PLS is a technique that uses a combination of principal components analysis, path analysis and regression to simultaneously evaluate theory and data (Wold 1985). The path coefficients in a PLS structural model are standardized regression coefficients. PLS is ideally suited to the early stages of theory development and testing- as is the case here-and has been used by a growing number of researchers from a variety of disciplines (Green et al. 1995; Higgins et al. 1992). The explanatory power of the model is tested by examining the size, sign and statistical significance of the path coefficients between constructs in the model. The predictive capacity of a PLS model can also be evaluated by examining the variance explained (i.e., R^2) in the dependent (or endogenous) constructs. The objective of a PLS analysis is to explain variance in the endogenous constructs, rather than to replicate the observed covariance matrix as is the case with covariance structure techniques (Hulland 1999). Assessment of the structural model involves estimating the path coefficients and the R^2 value. Path coefficients indicate the strengths of the relationships between the independent and dependent variables, whereas the R^2 value is a measure of the predictive power of a model for the dependent variables.

Researcher used a bootstrap re-sampling method (500 re-samples) to determine the significance of the paths within the structural model.

Fig. 2: Testing the research model
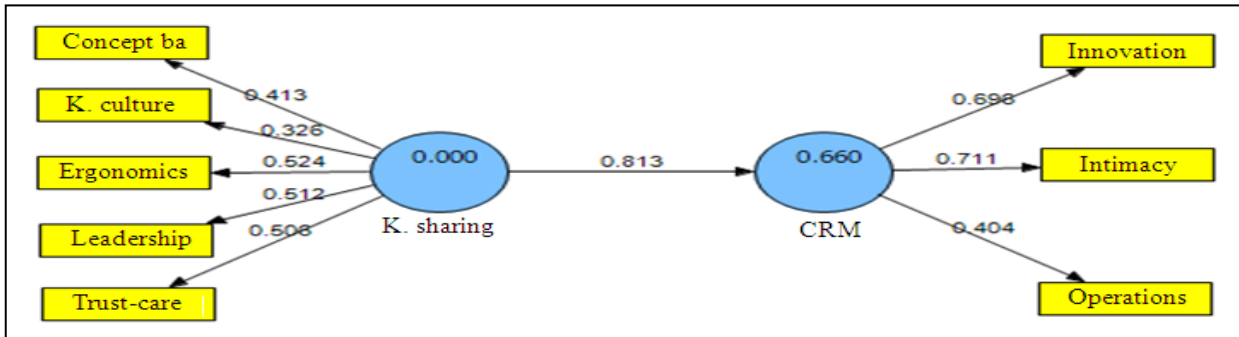
The overall results of the analysis are shown in Fig. 2. As hypothesized, knowledge sharing is significantly associated with CRM (path coefficient = 0.813, p<0.05), concept ba (path coefficient = 0.413, p<0.05), knowledge culture (path coefficient = 0.326, p<0.05), ergonomics role (path coefficient = 0.524, p<0.05), leadership (path coefficient = 0.512, p<0.05), trust and care (path coefficient = 0.508, p<0.05), innovation process (path coefficient = 0.698, p<0.05), customer intimacy (path coefficient = 0.711, p<0.05),and operational excellence (path coefficient = 0.404, p<0.05). Therefore, all nine hypotheses are supported.

5. Results

Table 4 provided a detailed summary of all the hypotheses test results. As shown in Fig. 2. Approximately the model explained 66% of the variance in CRM construct. Overall, the amount of variance explained by the model appeared reasonable. The exogenous (KS) variables would likely be only some of many things affecting the endogenous (CRM) construct, resulting in the relatively modest R^2 value. The standardized path coefficients ranged from 0.326-0.813, nine paths exceeding the suggested minimum value of significance at 0.20 (Chin 1998). Thus, the fit of the overall model is good. All significant constructs display strong positive loadings and high levels of statistical significance for all items. The results showed that all loadings in the model were significant (t-value >1.96) and the indicators loaded very well on their respective factors. Since all items were loaded on their designated factors and were substantially explained by latent factors, it was concluded that the relationships between the attributes and the latent factors "KS, CRM" were confirmed by the data.

Table 4: Results of testing hypotheses

Hypothesis	T value for path	Standardized path coefficient (direct effect)	R-Squared	Results
H1. LS→ KS	2.87*	0.51	N\A	Supported
H2. TC→ KS	3.29*	0.50	N\A	Supported
H3. KC→ KS	3.12*	0.32	N\A	Supported
H4. CB→ KS	2.94*	0.41	N\A	Supported
H5. ER→ KS	2.22*	0.52	N\A	Supported
H6. CRM→ OE	3.19*	0.40	N\A	Supported
H7. CRM→ IP	2.90*	0.69	N\A	Supported
H8. CRM→ CI	2.70*	0.71	N\A	Supported
H9. KS→ CRM	3.56*	0.81	0.66	Supported

*Significant at the 0.05 level

6. Discussion

This study explored what influences the use of knowledge sharing dimensions as an external structure in improving CRM value strategies. We will discuss the findings related to each hypothesis in turn.

Hypothesis 1: We had hypothesized that leadership would be positively associated with knowledge sharing. This finding are consistent with Locke et al. (1997) study which concluded that when a leader models and engages in participative decision making, there are more opportunities for team members to share their ideas. For example, a leader may give team members a chance to voice their opinions and encourage them to express suggestions. Under such circumstances, the odds are higher that the input of team members will actually influence decision making and team members might therefore find their knowledge sharing practically relevant. The evidence for the direct relationship between leadership "measured through a different source" and knowledge sharing is an important finding and it is consistent with research by Bunderson and Sutcliffe (2002) and Argote (1999). Our findings highlight the importance of leadership for knowledge sharing. Further, this finding consistent with Srivastava et al. (2006) and (Yukl 2002) results showed that empowering leadership was positively related to both knowledge sharing and team efficacy, which, in turn, were both positively related to performance.

Hypothesis 2: As hypothesized, strong feelings of creating trust and care were associated to share knowledge more. This finding was as we expected that the customer competence, ability, responsibility, integrity, credibility, reliability, dependability and emotional attitudes are conceptually similar and reinforcing. Two forms of interpersonal trust-trust in a person's competence and in a person's emotion-enable effective knowledge sharing. Yet, though conceptually appealing, trust is an elusive concept that is often difficult for organizations to influence. Encouraging building relationships and trust through face-to-face meetings and supporting establishing common ground through education, discussion and publication, teaming, bring to view the role of trust and care concept in constitute knowledge transfer. This findings in line

with the beliefs revealed in the literature of Davenport and Prusak (1998); Nonaka and Takeuchi (1995; 1996).

Hypothesis 3: The higher creating knowledge culture, the more sharing knowledge. Management allows employee and customer to exchange information and knowledge in both structured and ad hoc fashion. This indicates that management evaluating individual's performance and provides incentives based on sharing knowledge, educating employees for flexibility, encouraging a non-hierarchical approach to knowledge. i.e., knowledge is appreciated no matter the hierarchical-level of the source, conveying the vision regarding what kind of knowledge should be developed, hiring for openness of ideas has an effects on knowledge sharing. This findings are consistent with the literature of Davenport and Prusak (1998); Nonaka (1991); Nonaka and Takeuchi (1995; 1996); Harvey et al. (1998) and Harrington and Guimaraes (2004).

Hypothesis 4: The hypothesized relationship between concept ba and the endogenous variable was supported. The path from this concept to available of time, space, place and communication infrastructure for sharing knowledge was positive and statistically significant. This implies that having adequate time, space, place and infrastructure for face to face meeting is important to facilitate knowledge sharing and communication mentally or physically. This is assent with Eppler and Sukowski (2000) and Nonaka and Konno (1998).

Hypothesis 5: This hypothesis was strongly supported. As shown in Fig. 2. ER has the highest path coefficient ($\beta = 0.52$) affecting on KS. This indicates that management concerned with safe and healthy, upgrades the furniture work environment and implements a guidelines for people to follow, contributes to an efficient work environment and transferring knowledge more about the others variables.

Hypotheses 6, 7, and 8: The hypothesized relationship between CRM and operational excellence, innovation process and customer intimacy variables was supported. The results showed that CRM value contribute to organizations performance significantly. The results indicate that when organizations deploy CRM strategies they can generate significant economic returns "OE", this consistent with Shin (2006) study. The results showed that CRM value contribute to customer innovation significantly, this assent with Hippel (1998; 2005) studies. The results showed highest that deploying CRM value contribute to customer satisfaction and loyalty significantly, Organizations utilize CRM to optimize word of mouth and viral marketing, Cross selling and up-selling more than the others variables.

Hypothesis 9: The hypothesized relationship between knowledge sharing and CRM was supported. As shown in Fig. 2. The path coefficient ($\beta = 0.52$), that's mean organization should pay attention capturing knowledge from customers that comes from social interactions with employees. This consistent with Plessis and Boon (2004) they concluded that CRM cannot take place without KS to enabling organizations to become more efficient and effective in delivering products and/or services to customers, thus creating customer satisfaction and loyalty. The knowledge from customers must be

managed to ensure that the services organizations provide are those that will address customer needs. Knowledge sharing activities are, therefore, an integral part of CRM (Plessis and Boon 2004). Anne et al. (2001) case illustrated the effective, integrated use of information technologies to improve the performance of both customers and IBM's human experts by providing knowledge access and availability, acquiring and assembling knowledge and disseminating knowledge to those who need to apply it. This agrees with Stefanou et al. (2003); Salomann (2005) and Gibbert et al. (2002).

7. Conclusion

This study examined the relationship between knowledge sharing and CRM in the fixed and mobile telecommunications companies using an integrated theory that posits five sets of factors-leadership, trust and care, concept ba, ergonomics role and knowledge culture-influence Knowledge Sharing (KS) and posits three sets outcomes of CRM value strategy-operational excellence, innovation process and customer intimacy-;last posits Knowledge Sharing (KS) as an observed factor influence CRM as an latent variable. To conclude, it was found that there is a direct positive relationship between Knowledge Sharing (KS) and CRM. This study contributes to theory and practice in the CRM domain by focusing on knowledge sharing as the crucial aspect of achieving CRM strategies. Future study can expand the current framework model by integrating new constructs from other fields. For example, one might incorporate motivational factors, absorptive capacity, organizational structure, communication factors and mass customization into the existing framework.

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