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# TYPES OF HUMAN NEEDS THAT MOTIVATE KNOWLEDGE SHARING IN ORGANIZATIONS: A COMPREHENSIVE EMPIRICAL STUDY BASED ON THE ERG THEORY

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## ABSTRACT

In today's knowledge intensive economy, the ability of the organization to leverage and maximize the value of knowledge is central for its survival and for gaining sustainable competitive advantage. As such, many organizations are increasingly employing capable knowledge management systems (KMSs) to support knowledge management (KM) practices. However, despite the remarkable advancements in KMS in lowering temporal and spatial barriers and enhancing KM processes, practical implementations have found that KMS adoption alone cannot guarantee the success of KM. While the research has linked the success of KMS to knowledge sharing (KS) behaviors, critical antecedents to KS have not been fully explored yet. This paper aims to develop a need-based perspective and sets out to examine the influence of need satisfaction as proposed by Alderfer's existence, relatedness, and growth (ERG) theory on knowledge sharing behaviors of employees in the organizational context. Empirical results show that the needs for existence and relatedness exert a strong positive influence on the attitude towards knowledge sharing. These and other findings offer important guidelines for theory and practice. From a pragmatic perspective, we discuss the implications of the study findings for developing strategies that promote knowledge sharing in the organization.

**Keywords:** Knowledge Management, Knowledge Management System, Knowledge Sharing, Need Satisfaction, ERG Theory

## INTRODUCTION

Despite the growing significance of knowledge as an asset for gaining sustainable competitive advantage [25], [26], very few organizations are able to manage it successfully. Today, organizations are increasingly turning to knowledge management systems (KMS) [2] for supporting knowledge capture and exchange. Document and content management systems, electronic knowledge repositories, people-finder systems, expert networks, knowledge portals, and social network-based systems, are just a few examples of KMS that are being implemented to make the knowledge housed in only few individuals more widely available [53]. The information systems (IS) and KM literature is replete with many such examples of innovative approaches to creating, capturing, storing and disseminating knowledge [8], [24], [36], [38], [41],[42],[70],[76],[81]. Organizations want to ensure that invested KMS are utilized to the maximum extent so that

benefits are reaped thoroughly and knowledge is managed effectively. Although KMS significantly lowers temporal and spatial barriers between people and enhance knowledge management (KM) processes [76], practical implementations have found that KMS adoption alone cannot guarantee the success of knowledge actualization [7], [22]. Successful implementation of KMS depends on employee behaviors within the organization [14], [62], [75], particularly on knowledge sharing (KS) behaviors [31]. KS behavior is the degree to which members in the organization share their knowledge with their co-workers. Increasingly, for many organizations, the sustainable competitive advantage lies in their ability to manage organizational knowledge effectively and make it widely available to their employees for future use. KS has a positive impact on knowledge application, innovation, and ultimately on a firm's competitive advantage [39]. One of the key factors of successful KM is sharing of tacit knowledge [31]. When employees share knowledge with each other and across the business units, the costs of redundant learning are greatly reduced and the organizational effectiveness and responsiveness is increased. KS fosters collaboration, discovery of experiential knowledge and opportunities for mutual learning, facilitates the knowledge creation and reuse, reduces production costs, enhances firm's innovation capabilities, organizational performance and sustains competitive advantages [4], [5], [13], [21], [35], [39], [18], [56], [58], [63], [66]. Nonetheless, successful KS is rarely achieved and even achieving relative success can be difficult. One of the major challenges is fostering individual's willingness to share knowledge with co-workers [12], [17], [46]. KS behaviors are regarded as largely discretionary and the employees often view KS as a burden which does not provide them any advantage. Many issues and barriers that hinder KS have been identified [4], [22], [10], [3], [43]. In recent decades, studies on KS focused on technological factors [8], [24], [38], [41], [36], [42], [70], [78], [81] organizational factors including leadership, culture [40], [42], [51], [54], new product creativity [80], and psychological factors such as beliefs and attitudes [44], trust [42] etc. Even though, some progress has indeed been made on KS research, a careful review of KS literature shows that important factors that influence KS behaviors have not been fully researched yet. In particular, the relationship between need satisfaction of employees and KS behaviors has not received due attention. Empirical results are still scarce. As needs are often embedded in the social identities, beliefs and attitudes, need satisfaction has the potential to predict KS behaviors in organizational context. Therefore, understanding what needs motivate employees to engage in KS and how these needs are satisfied is crucial for strengthening KS behaviors. Drawing on literature from multiple streams of research including social psychology, organizational learning and KM, we develop an integrated theoretical model and uncover three sets of critical needs that are believed to influence KS behaviors. We draw upon Alderfer's existence, relatedness, and growth (ERG) theory of human needs [1] to propose, operationalize and validate our research model. Study results provide significant statistical support for the research model accounting for about 54% of the variance in the attitude and 57% of the variance in the intention to share knowledge. 3 of the 4 hypothesized relationships were supported. Our study contributes to the existing literature in two ways. First, it establishes a research framework for deepening our understanding of the essential role of need satisfaction in promoting KS behaviors. To our knowledge, very few studies [9] have investigated the role of need satisfaction in KS context. The empirical evidence is still sparse. Second, our empirical results reveal the relative importance among different types of needs, and highlight the interplay between the need satisfaction and KS behaviors.

The rest of the paper proceeds as follows. We will first review the literature on Alderfer's ERG theory [1] that facilitates the development of research model and hypotheses in this study. Next, we will present the research model and a list of testable hypothesis which identifies a set of important human needs that are believed to influence KS behaviors. In the subsequent sections, research methodology and the study results will be described. This will be followed by a discussion on major findings and a summary of research implications. The last section concludes by discussing the research limitations and avenues for future research.

# LITERATURE REVIEW

The need theories posit that humans are motivated by unsatisfied needs and attempt to explain needs as a source of motivation. The need theories have gained much attention in the research on human motivation and personal development. One of the most widely known is that of Maslow's hierarchy of needs theory [59]. Maslow [59] contends that humans have five basic categories of needs: physiological, safety, belongingness, esteem, and self-actualization needs which are ranked and satisfied in order of importance. The hierarchy is typically represented as a pyramid, as shown in Figure 1, with the base of the pyramid comprising the most primitive needs: physiological and safety needs followed by belongingness, esteem and self-actualization needs. Maslow postulated that only when the lower needs are met, the higher needs become motivational. For example, the physiological needs, which are regarded as the most basic in all human beings,

must be satisfied first. They are then followed by safety and security needs, affiliation or love needs, esteem needs and self-actualization needs respectively. Although, Maslow's hierarchy of needs theory is highly popular, various criticisms have been directed towards it [20], [47], [73] and it was not fully supported by empirical research.

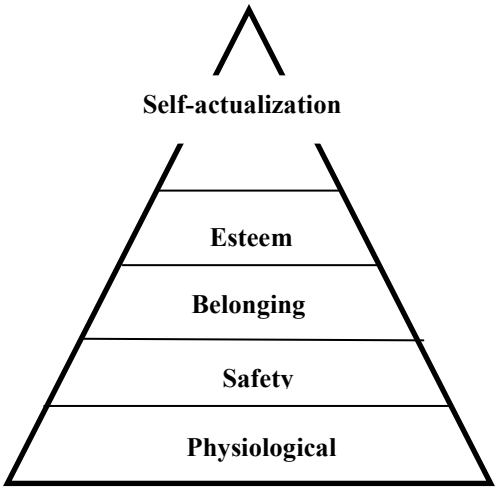


Figure 1: Maslow's Hierarchy of Needs

To give more utility to Maslow's hierarchy of needs, Alderfer [1] added a new perspective and concluded that the five categories of Maslow's hierarchy of needs can be collapsed into three groups of core needs, also ordered hierarchically: Existence, Relatedness and Growth (ERG). The existence needs include the basic needs necessary for existence i.e., all forms of material, physiological and safety needs such as food, shelter, job etc. Relatedness needs include all needs that involve individuals' desire to maintain satisfactory relations with others. Growth needs involve individuals need to grow, develop competence and realize full potential through self-actualization. Unlike Maslow's theory, the ERG theory, however, does not assume rigid hierarchy among the three core needs. In other words, meeting the higher needs doesn't require that lower needs be met. Furthermore, the theory posits that individuals can have more than one need operative at the same time. Alderfer [1] claims that focusing exclusively on one need at a time does not effectively motivate changes in human behavior. He also added a principle called frustration-regression to this theory. This principle states that when higher order needs are not fulfilled, individuals may regress to increase the satisfaction of lower-order needs which seems like easy to satisfy. Frustration-regression principle influences work place motivation. For instance, if employees are deprived of growth opportunities, they tend to regress to lower order needs such as existence or relatedness needs.

## RESEARCH MODEL AND HYPOTHESIS

ERG theory is a well-researched social-psychological theory used to understand the specific needs that motivate an individual in many applied settings, particularly business settings. Understanding what needs motivate employees to engage in KS and how these needs are satisfied is crucial for strengthening KS behaviors in organization. The ERG theory appears to be useful in understanding the role of need satisfaction in the success of KS. Employees may share knowledge to safeguard their jobs, to support their relations with others, to increase their reputation, status and power, and to strengthen their own knowledge and abilities. Figure 2 presents employee needs affecting KS in the organizational context and maps them to corresponding existence, relatedness and growth needs of the ERG theory.

To assess the influence of need satisfaction on KS behaviors, we selected Alderfer's ERG theory of human needs [1] as theoretical framework and developed a comprehensive, yet parsimonious research model that includes a set of important antecedents to KS behaviors. Figure 3 presents our research model. We chose ERG theory over Maslow's hierarchy of needs because it is considered as a more valid version of the need hierarchy theory [69]. Moreover, ERG theory is flexible in accounting for differences in needs for different people and allows wider range of observed behaviors.

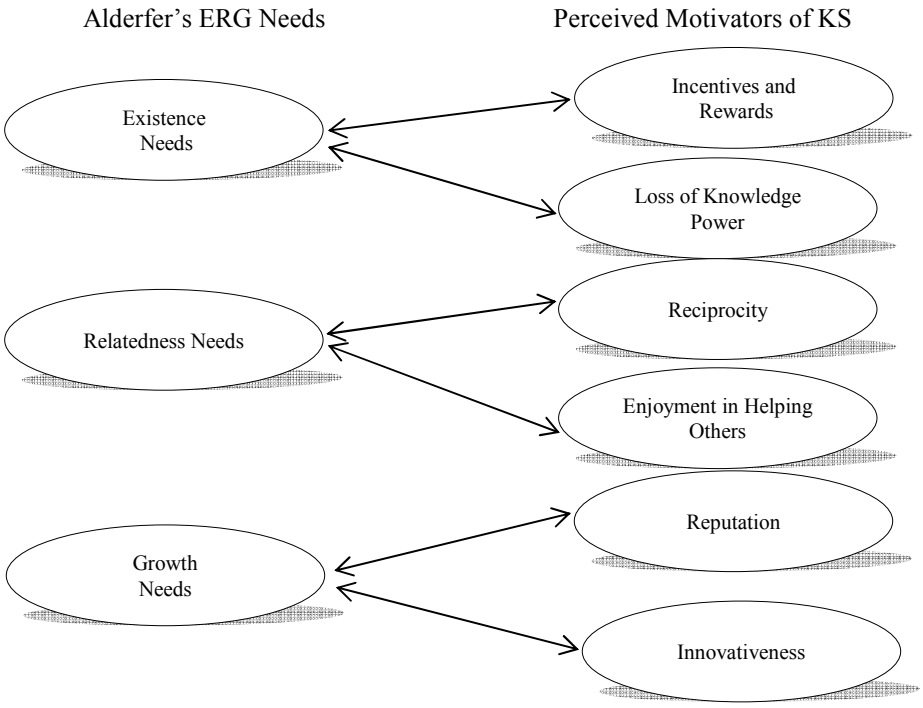


Figure 2: Mapping of Alderfer's ERG needs to perceived motivators of KS

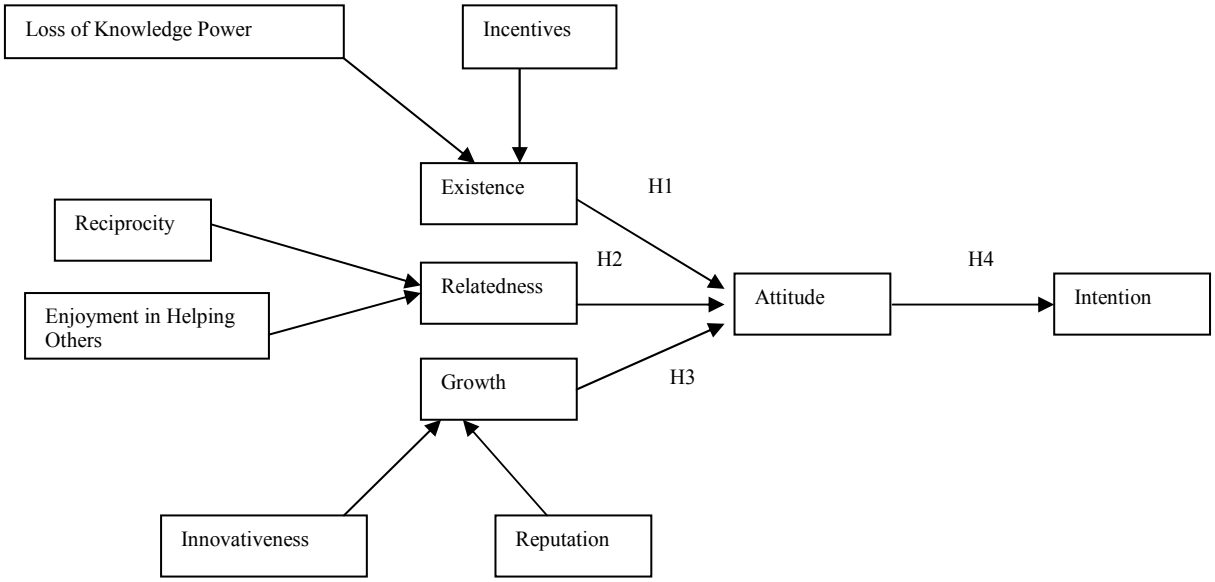


Figure 3: Research Model

The theoretical underpinnings for the hypothesis in our research model are discussed below. There are three levels of elements in KS. The first level deals with existence needs, such as those related to basic physiological and security needs. These needs address material issues such as fringe benefits, pay increases, bonus, career advancement and job security. Research has shown that lack of incentives can be a major barrier to KS across cultures [82]. Employees often view KS as a burden as it costs them time, energy and potential loss of ownership to knowledge and power [67]. To counterbalance these costs, research suggests that employees should be rewarded with incentives and job security for actively engaging in KS activities [6], [10], [11], [32], [48], [65]. Employees are motivated to engage in KS behaviors because of the less fear of losing a job [11], [32], [37] or because of the expectation to receive incentives and monetary rewards [6], [48], [65]. In this context, as presented by the research model in Figure 3, we hypothesize H1 as:

*H1: Existence needs characterized by incentives and less fear for the loss of knowledge power have positive effect on the employee's attitude towards KS*

The second level deals with relatedness issues. Relatedness contains belongingness needs like the sense of belonging, the sense of being accepted and not being alienated and the desire to maintain interpersonal relationships. The process of reaching relatedness end states involves social exchanges such as two or more people mutually sharing their thoughts, feelings and /or helping each other. According to social exchange theory, social reciprocity is required to collaborate with co-workers. Employees engage in social exchanges with the expectation that their engagement will result in reciprocal returns in the future, an expectation regulated by feelings of personal obligation, gratitude and trust. Reciprocity is often cited as a key motivator for individuals' willingness to contribute knowledge to the discretionary databases, electronic knowledge repositories, to maintain reciprocal relationships and to share knowledge in electronic communities of practice [17], [8], [42], [77]. Research also suggests that individuals participating in KS activities had increased feelings of intrinsic joy, internal satisfaction, perceived obligation to reciprocate the gain they received and advance the community [51], [77], [78]. Thus, we posit that employees engage in KS behaviors in order to establish relationships, and enjoy helping others.

*H2: Relatedness needs characterized by reciprocity and enjoyment in helping others, have positive effect on the employee's attitude towards KS*

The third level deals with growth issues. Growth refers to an innate desire for developing competence, recognition, attaining respect from superiors and peers, achievement, high social status and realizing full potential through self-actualization. Employees share their expertise with others because that behavior allows them to grow and develop their abilities and to enhance their reputation [35], [42], [45]. Employees may also engage in KS as a way to develop themselves. Innovation is essential for organizations to grow [55]. The ability of the organization to create new products and services, apply appropriate technologies to create these products and services and respond in a timely fashion to the opportunities in the market place is crucial for both survival as well as to gain sustainable competitive edge. Organizational culture that stresses innovation has been found to lessen the influence of perceived costs of engaging in KS activities and more likely to promote KS [8], [71]. Innovation capabilities require employees to develop skills and competence by acquiring existing knowledge and sharing this knowledge with co-workers. Organization's innovation capabilities are directly related to KS [8], [18]. Hence, we propose our next hypothesis:

*H3: Growth needs characterized by reputation and innovativeness, have positive effect on the employee's attitude towards KS*

According to the theory of reasoned action (TRA), attitude is formed from a collection of behavioral beliefs about the expected outcomes of a behavior and the favorable or unfavorable evaluation of these outcomes. Research shows that attitude influences intention to engage in a behavior [27], [8], [51], [72], [74]. Higher attitudinal disposition towards KS should increase KS intention. Thus, it is theorized that:

*H4: A favorable attitude toward KS has positive effect on the employee's intention to share knowledge.*

# RESEARCH METHODOLOGY

The survey method was used to collect data for testing the research hypothesis. The questionnaire was administered to working professionals who were taking either MBA or senior level classes at a large state university in the Southwest United States. A total of 180 useable responses were collected. Among these, 55% were males and 45%, females. The organization tenure ranged from less than 2 years to over 30 years. 38.33% had been with the organization for 2 years or less, 30% for 3 to 5 years, 23.89% for 5 to 10 years, 6.11% for 11 to 20 years, 1.11% for 21 to 30 years and 0.56% over 30 years. The category of job positions shows that 22.22% are from management (managers, executive, directors and vice president). The remainder 77.78% represented themselves as professionals, consisting of analysts, engineers, specialists, scientists and a variety of other knowledge workers. The respondents came from diverse industries: manufacturing (13.97%), IT/telecommunications (12.85%),

banking/insurance/financial service (11.73%), consulting/business service (6.15%), health care (13.41%), hotel/entertainment/service industry (5.59%), constructions/architecture/engineering (6.70%), government, including military (3.91%), education (3.91%), transportation (3.35%), retail (7.26%) and others (11.17%). We also measured respondents usage of the variety of tools and technology such as knowledge repositories, corporate portals, computerized directory on experts desktop conferencing, video conferencing, email, discussion forum etc. in sharing knowledge with their co-workers. Results show that the respondents used face-to-face communication the most (mean = 6.12), followed by email (mean = 5.08), and other technologies.

## Measures

We drew the measures to operationalize the research constructs from the extant literature and adapted them to the KS context. The scale items for attitude were derived from the validated scales developed by Morris et al. [60] and Bock et al. [8]. We assessed KS intention using the scale developed by Bock et al. [8]. The scale items for incentives and loss of knowledge power were adapted from Kankanhalli et al. [42] while the items for reciprocity, reputation and enjoyment in helping others were adapted from Kankanhalli et al. [42] and Wasko et al. [78]. Innovativeness is developed using the scale developed by Bock et al. [8]. Each item in our model is measured on a seven-point Likert scale, with anchors ranging from 1 'Strongly Disagree' to 7 'Strongly Agree'. Multiple items and reverse-coded items were used in order to improve the reliability and validity. A rigorous pretest was conducted with a group of faculty, doctoral students and experienced knowledge workers for the purpose of detecting content and item wording problems. Participants recommendations were thoroughly evaluated and the survey instrument was further refined. Table 1 lists the construct and the measurement items used in the research.

Table 1: Constructs and Measurements

| Variables and Related literature | Item No. | Measurement Item |
|---|---|---|
| Incentives: Kankanhalli et al.[42] | Inc1 | Sharing knowledge with my co-workers improves the likelihood of getting a better work assignment for me. |
| | Inc2 | Sharing knowledge with my co-workers improves the likelihood of getting a promotion for me. |
| | Inc3 | Sharing knowledge with my co-workers improves the likelihood of getting a higher salary for me. |
| | Inc4 | Sharing knowledge with my co-workers improves the likelihood of getting a bonus for me. |
| | Inc5 | I expect to get more job security when I share knowledge with my co-workers |
| Loss of Knowledge Power: Kankanhalli et al.[42] | Lkp1 | Sharing knowledge with my co-workers makes me lose my unique value in the organization. |
| | Lkp2 | Sharing knowledge with my co-workers makes me lose my power base in the organization. |
| | Lkp3 | When I share knowledge with my co-workers, I believe I will lose my knowledge that no one else has. |
| | Lkp4 | Sharing knowledge with my co-workers makes me lose my knowledge that makes me stand out with respect to others. |
| Reciprocity: Wasko et al. [78], Kankanhalli et al. [42] | Rec1 | When I share knowledge with my co-workers, I expect them to respond to my knowledge needs. |
| | Rec2 | When I share knowledge with my co-workers, I believe that my queries for knowledge will be answered in the future. |
| | Rec3 | I know that my co-workers help me, so it is only fair to help them out when they are in need of knowledge. |
| Enjoyment in Helping Others: Wasko et al. [78], Kankanhalli et al. [42] | Enj1 | I enjoy sharing knowledge with my co-workers. |
| | Enj2 | I enjoy helping my coworkers by sharing knowledge. |
| | Enj3 | It feels good to help my co-workers solve their work related problems. |
| | Enj4 | Sharing knowledge with my co-workers gives me pleasure. |
| Innovativeness: Bock et al.[8] | Inn1 | Our department encourages suggesting ideas for new opportunities. |
| | Inn2 | Our department puts much value on taking risks even if that turns out to be a failure. |
| | Inn3 | Our department encourages finding new methods to perform a task. |
| Reputation: Wasko et al.[78], Kankanhalli et al.,[39] | Rep1 | My co-workers respect me, when I share knowledge with them. |
| | Rep2 | Sharing knowledge with my co-workers improves others recognition of me. |
| | Rep3 | My superiors praise me when I share knowledge with my coworkers. |
| | Rep4 | I believe my status in the organization improves, when I share knowledge with my co-workers. |
| | Rep5 | Organizational members who share knowledge with others have more prestige. |
| | *Rep6 | I share my knowledge to improve my reputation in the organization. |
| Attitude: Morris et al., [60]; Bock et al.[8] | Att1 | To me, sharing knowledge with my co-workers is harmful. |
| | Att2 | To me, sharing knowledge with my co-workers is good. |
| | Att3 | To me, sharing knowledge with my co-workers is pleasant. |
| | Att4 | To me, sharing knowledge with my co-workers is worthless. |
| | Att5 | To me, sharing knowledge with my co-workers is wise. |
| Intention: Bock et al.[8] | Int1 | If given opportunity, I would share factual knowledge (know-what) from work with my co-workers. |
| | Int2 | If given opportunity, I would share business knowledge about the customers, products, suppliers and competitors with my co-workers. |
| | Int3* | If given opportunity, I would share internal reports and other official documents with my co-workers. |
| | Int4 | If given opportunity, I would share work experiences with my co-workers. |
| | Int5 | If given opportunity, I would share know-how or tricks of the trade from work with my co-workers. |
| | Int6 | If given opportunity, I would share expertise from education or training with my co-workers. |
| | Int7 | If given opportunity, I would share know-why knowledge from work with my co-workers |

* Items dropped from the model.

# STUDY RESULTS

We employed the partial least squares (PLS) method of structural equation modeling, for testing the research model in view of PLS method's ability to model latent constructs as formative as well as reflective [16], allow simultaneous assessment of both the measurement model and the structural model [57] and place minimal restrictions on sample size [15]. We employed SmartPLS2.0 to analyze measurement and structural models [68].

## Measurement Model

As per the guidelines in IS research by Petter et al. [64], we separated latent constructs into formative or reflective, as the tests conducted on formative constructs are different. We handled existence, relatedness and growth constructs as formative based on the causal priority [23]. Since existence, relatedness and growth are second-order constructs in our model, we also created superordinate second-order constructs for them. Remaining constructs were treated as reflective with multiple indicators for each. We validated our measurement model by assessing the reliability of individual items, internal consistency between items and by undertaking validity assessments for both convergent and discriminant validities.

In assessing the measurement model, we set the acceptance level for path loading to 0.7, the acceptance level for composite reliability [79] to 0.70 [33], and the acceptance level for average variance extracted (AVE) [30] to 0.50 [15]. Table 2 lists composite reliability, AVE and correlations between the constructs. For formative constructs, the composite reliability and AVE are not applicable [15]. As shown in Table 2, the composite reliability values of all of the constructs ranged from 0.85 to 0.96, with a majority of them over and above 0.90, thus indicating very good internal consistency [61]. AVE was found to be between 0.62 and 0.85, again exceeding the recommended values. Thus, convergent validity of the measurement model was supported. Comparisons of the square root of the AVE (bold figures on the diagonal) with the correlations among constructs shows that each latent construct is more related to its own measures than to those of other latent constructs, thus demonstrating adequate discriminant validity.

Table 3 presents the loadings and cross loadings for all the measurement items in the model. The loadings for all the measurement items are well over the recommended level of 0.70. Also, each block of measurement items loaded highly on its own latent construct than on any other unrelated constructs.

Table 2: Composite Reliability, Average Variance Extracted and Correlation among the Constructs

| | **CR** | **AVE** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|---|
| Incentives (1) | 0.94 | 0.75 | **0.87** | | | | | | | |
| Loss of Knowledge Power (2) | 0.96 | 0.85 | 0.09 | **0.92** | | | | | | |
| Reciprocity (3) | 0.85 | 0.65 | 0.37 | 0.13 | **0.81** | | | | | |
| Enjoyment in Helping Others (4) | 0.95 | 0.84 | 0.26 | 0.44 | 0.44 | **0.92** | | | | |
| Innovativeness (5) | 0.88 | 0.72 | 0.28 | -0.01 | 0.23 | 0.17 | **0.85** | | | |
| Reputation (6) | 0.91 | 0.66 | 0.57 | 0.21 | 0.53 | 0.42 | 0.39 | **0.81** | | |
| Attitude (7) | 0.90 | 0.65 | 0.26 | 0.50 | 0.41 | 0.70 | 0.23 | 0.41 | **0.80** | |
| Intention (8) | 0.91 | 0.62 | 0.20 | 0.44 | 0.40 | 0.61 | 0.07 | 0.39 | 0.75 | **0.79** |
| Note: CR: Composite Reliability; AVE: Average Variance Extracted; Boldface numbers on the diagonal are the square roots of the AVE values. | | | | | | | | | | |

Table 3: Correlations of individual items to constructs

| | Incentives | Loss of Knowledge Power | Reciprocity | Enjoyment in Helping Others | Innovative-Ness | Reputation | Attitude | Intention |
|---|---|---|---|---|---|---|---|---|
| Inc1 | **0.81** | 0.04 | 0.33 | 0.23 | 0.30 | 0.51 | 0.22 | 0.14 |
| Inc2 | **0.92** | 0.04 | 0.30 | 0.18 | 0.26 | 0.48 | 0.19 | 0.15 |
| Inc3 | **0.93** | 0.06 | 0.33 | 0.23 | 0.21 | 0.47 | 0.21 | 0.18 |
| Inc4 | **0.83** | 0.06 | 0.29 | 0.14 | 0.16 | 0.43 | 0.19 | 0.15 |
| Inc5 | **0.83** | 0.19 | 0.37 | 0.31 | 0.29 | 0.58 | 0.32 | 0.21 |
| Lkp1 | 0.08 | **0.91** | 0.09 | 0.36 | 0.04 | 0.22 | 0.47 | 0.41 |
| Lkp2 | 0.09 | **0.95** | 0.18 | 0.45 | -0.01 | 0.21 | 0.54 | 0.46 |
| Lkp3 | 0.07 | **0.93** | 0.14 | 0.42 | -0.03 | 0.17 | 0.48 | 0.39 |
| Lkp4 | 0.11 | **0.89** | 0.06 | 0.37 | -0.04 | 0.17 | 0.36 | 0.35 |
| Rec1 | 0.34 | -0.04 | **0.76** | 0.25 | 0.13 | 0.35 | 0.23 | 0.19 |
| Rec2 | 0.29 | 0.05 | **0.87** | 0.32 | 0.22 | 0.43 | 0.31 | 0.24 |
| Rec3 | 0.29 | 0.26 | **0.80** | 0.46 | 0.19 | 0.47 | 0.43 | 0.50 |
| Enj1 | 0.22 | 0.46 | 0.39 | **0.91** | 0.09 | 0.40 | 0.68 | 0.60 |
| Enj2 | 0.21 | 0.43 | 0.42 | **0.94** | 0.14 | 0.41 | 0.66 | 0.58 |
| Enj3 | 0.23 | 0.32 | 0.42 | **0.90** | 0.20 | 0.36 | 0.60 | 0.55 |
| Enj4 | 0.29 | 0.38 | 0.39 | **0.91** | 0.17 | 0.37 | 0.62 | 0.50 |
| Inn1 | 0.26 | 0.07 | 0.21 | 0.18 | **0.88** | 0.40 | 0.26 | 0.12 |
| Inn2 | 0.20 | -0.15 | 0.14 | 0.05 | **0.79** | 0.24 | 0.10 | -0.06 |
| Inn3 | 0.26 | 0.02 | 0.21 | 0.18 | **0.87** | 0.33 | 0.22 | 0.10 |
| Rep1 | 0.33 | 0.28 | 0.49 | 0.49 | 0.26 | **0.70** | 0.51 | 0.45 |
| Rep2 | 0.46 | 0.12 | 0.45 | 0.32 | 0.27 | **0.82** | 0.31 | 0.34 |
| Rep3 | 0.46 | 0.11 | 0.39 | 0.28 | 0.45 | **0.84** | 0.29 | 0.28 |
| Rep4 | 0.52 | 0.21 | 0.42 | 0.38 | 0.30 | **0.87** | 0.36 | 0.32 |
| Rep5 | 0.56 | 0.15 | 0.41 | 0.26 | 0.29 | **0.83** | 0.24 | 0.20 |
| Att1 | 0.17 | 0.45 | 0.24 | 0.51 | 0.19 | 0.28 | **0.81** | 0.59 |
| Att2 | 0.26 | 0.44 | 0.42 | 0.70 | 0.21 | 0.37 | **0.88** | 0.71 |
| Att3 | 0.23 | 0.38 | 0.33 | 0.56 | 0.20 | 0.29 | **0.78** | 0.57 |
| Att4 | 0.19 | 0.33 | 0.30 | 0.44 | 0.23 | 0.34 | **0.76** | 0.50 |
| Att5 | 0.21 | 0.43 | 0.35 | 0.58 | 0.13 | 0.37 | **0.80** | 0.65 |
| Int1 | 0.09 | 0.32 | 0.28 | 0.55 | 0.10 | 0.30 | 0.68 | **0.76** |
| Int2 | 0.13 | 0.32 | 0.32 | 0.45 | 0.05 | 0.28 | 0.52 | **0.71** |
| Int4 | 0.14 | 0.37 | 0.35 | 0.34 | 0.09 | 0.29 | 0.49 | **0.73** |
| Int5 | 0.20 | 0.35 | 0.24 | 0.42 | -0.01 | 0.26 | 0.56 | **0.82** |
| Int6 | 0.18 | 0.35 | 0.35 | 0.53 | 0.04 | 0.33 | 0.62 | **0.83** |
| Int7 | 0.20 | 0.37 | 0.37 | 0.55 | 0.08 | 0.35 | 0.65 | **0.86** |

## Structural Model

We tested the structural model by estimating the path coefficients and R-square values. Path coefficients determine the strength of the relationships between independent and dependent variables while R-square indicates the amount of variance explained by the independent variables. Collectively, path coefficients and R-square denote how well the data support the research model. Figure 4 presents the results of the structural model. As can be seen, the model has high explanatory power and demonstrates a good fit. It explains approximately 57% of the variance in the intention to share knowledge. The existence, relatedness and growth needs collectively explain 54% of the variance in the attitude towards KS.

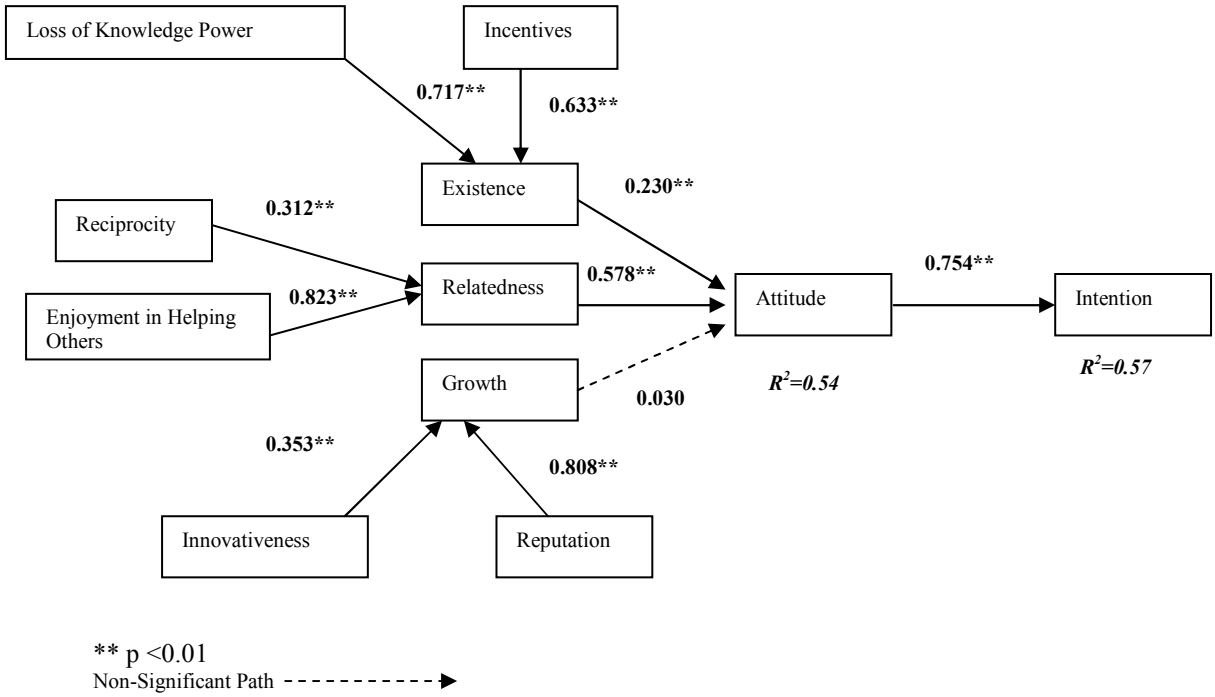


Figure 4: Structural Model Analysis Results

The results of the hypothesis tests provide strong support for three of the four research hypothesis with the path coefficients statistically significant at level 0.01. As hypothesized in H1, the satisfaction of existence needs (0.230, $p < 0.01$) is positively correlated with KS attitude. Similarly, the satisfaction of relatedness needs (0.578, $p < 0.01$) also significantly influenced KS attitude. However, against expectations, as shown by the dotted line in Figure 4, the satisfaction of growth needs (path coefficient is 0.030) have no significant effects on KS attitude. KS attitude (0.754, $p<0.01$) had a significant positive effect on the employees' intention to share knowledge. Table 4 presents the results of the hypothesis testing.

Table 4: Results of Hypothesis Testing

| No. | Hypothesis | Dir | Coeff. | Result |
|---|---|---|---|---|
| H1 | Existence needs characterized by incentives and less fear for the loss of knowledge power have positive effect on the employee's attitude towards KS | + | 0.230** | Supported |
| H2 | Relatedness needs characterized by reciprocity and enjoyment in helping others have positive effect on the employee's attitude towards KS | + | 0.578** | Supported |
| H3 | Growth needs characterized by reputation and innovativeness have positive effect on the employee's attitude towards KS | + | 0.030 | Not Supported |
| H4 | A favorable attitude toward KS has positive effect on the employee's attitude towards KS<br>Intention | + | 0.754** | Supported |
| ** significant at 0.01 level | | | | |

# DISCUSSION OF RESULTS

This research study aims to provide a theoretical framework for investigating the essential role of need satisfaction in promoting KS behaviors. In particular, the study sought to identify the influence of need satisfaction as proposed by Alderfer's existence, relatedness, and growth (ERG) theory on knowledge sharing behaviors of employees in the organizational context. Our results show that existence and relatedness needs have a direct positive relationship on employee's attitude towards KS. Among the three needs, relatedness needs were found to more important with a path coefficient of 0.578, followed by existence needs (0.230). The results suggest that KS behaviors of employees can be increased by strengthening their positive attitude through the satisfaction of the existence and relatedness needs. To enhance the satisfaction of the relatedness needs, the level of belongingness in the organization should be raised by establishing knowledge networks and by encouraging employees to help their co-workers with their knowledge needs. The satisfaction of the existence needs can be enhanced by implementing initiatives that create a positive work place culture and promote incentives such as pay increases, bonuses, career advancement and job security.

Against our expectations, the satisfaction of growth needs had no significant effect on employees' attitude towards KS. One possible explanation for this interesting finding is that KS is a social phenomenon and KS behaviors are innately relational in nature. The relation models theory [28], [29] states that people are fundamentally sociable. Individuals pursue, sustain and repair their social relationships because these relations are important, meaningful and fulfilling. Sharing is inherently social and KS is a social exchange. KS involves a relationship between participants which is often established when individuals come together to share knowledge with one another. These ongoing social relationships provide opportunities as well as constraints for further exchange of knowledge. Therefore, in KS context, employees favored the satisfaction of related needs over the growth needs. Another possible explanation can be found in the frustration – regression notion of Alderfer's ERG theory. Frustration – regression principle states that if higher order needs remain unfulfilled, individuals may regress to increase the satisfaction of lower-order needs which appears easy to satisfy. Failure to satisfy a need for growth, for example, might increase the desire for receiving more monetary rewards or securing the job or improve the relationships with co-workers which seem easy to achieve. So frustration in attempting to satisfy a higher need can lead to regression to a lower need. Research has shown that frustration-regression principle influences work place motivation. If KM practitioners can recognize the circumstances that frustrate the need satisfaction of employees, then they can take appropriate measures in a timely fashion to alleviate the circumstances that lead to regression of employee lower level need satisfaction and create more opportunities for their growth. Results also show that employees' favorable attitudinal disposition towards KS significantly influences their intentions to share knowledge. This finding is consistent with the prior research on TRA [8], [27], [51], [72].

# CONCLUSIONS

## Research Contributions

This study provides a number of unique contributions to KM discipline. First, it advances theoretical developments in the area of KS by developing an integrated theoretical framework for examining the essential role of need satisfaction in promoting KS behaviors. In particular, our study sought to identify the influence of need satisfaction as proposed by Alderfer's existence, relatedness, and growth (ERG) theory on knowledge sharing behaviors of employees in the organizational context. To our knowledge, very few studies [9] have investigated the role of need satisfaction in KS context. The empirical evidence is still scarce. Accordingly, the theoretical model proposed in this study bridges the research gap in the area of KS. Most importantly, our findings reveal the significant effects of need satisfaction on KS and provide empirical support for a new approach to comprehending the KS behaviors. The study highlights the importance of satisfying needs in shaping employees' attitude towards KS. Given the importance of KS behaviors in the organizational context, our model is useful for practical evaluation by KM practitioners.

## Implications for Practice

From a pragmatic perspective, the empirical findings suggest some managerial implications. Study results show that among the three sets of needs, relatedness needs have the strongest effect on employees' KS attitude. Sharing is social and KS is a social exchange. KM practitioners and management should explore different ways of raising the level of social relationships and belongingness among the employees in the organization. They should establish knowledge networks, implement technologies that promote KS and encourage their employees to help the co-workers with their knowledge needs. Our findings reveal that employees also satisfy their relatedness needs through enjoyment in helping others. To increase the satisfaction of this need, management should promote pro-social and organizational citizenship behaviors. They should share positive impacts of KS with employees. Incentives and rewards should be linked to KS. For example, management can introduce appropriate incentives and rewards such as pay increases, bonus, career advancement etc. to promote more favorable attitudes towards KS. They should address the employees' fear of losing job or power by providing job security and by restoring their confidence in their position, power and status in the organization. Our findings also reveal the possibility that when higher order growth needs are frustrated, employees increasingly seek to intensify the satisfaction of their lower-order needs. KM practitioners should, therefore promptly recognize the circumstances that frustrate the need satisfaction of employees and take appropriate measures to mitigate the circumstances that leads to regression of lower level need satisfaction in employees. In this regard, it is important that management provide growth opportunities to employees through KS. Opportunities for attaining high social status, recognition by superiors and peers, personal development and realization of full potential should be offered. Organizational culture that emphasizes innovation is more likely to promote KS. Therefore, management should create a supportive environment that encourages innovativeness.

## Research Limitations and Future Directions

We conclude by noting some potential limitations of this study. These limitations are not substantive concerns, but none the less valuable and should be taken into account for future research. First, the research setting for the current study was an educational institution. Respondents were limited to working professionals who were taking either MBA or senior level business classes at a large state university in the Southwest United States. Typically, the criticism directed at the usage of students as respondents posits that students' perceptions differ from general population perceptions in regards to the theoretical phenomenon of interest. This may be true in situations where students have unclear position. In this study, however, respondents are working professionals, with a majority of them coming from professional ranks. As such, the study findings can be considered as being representative of the general work force. Future research, however, will certainly benefit from replicating this research in other professional work groups and work environments. Second, the study findings rely on cross- sectional data which limits the extent to which causality can be inferred on the relationship between constructs. However, in this research, the posited causal relationships are well grounded in theory and practice and therefore have theoretical support for the direction. Never the less, future research should attempt to replicate this research by collecting longitudinal data to make the findings more robust.

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