Goal Orientations and Their Impacts on Advice Ties and Employee Outcomes: A Longitudinal Field Study of an Enterprise System Implementation

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Abstract
This research seeks to understand the impact of a user’s goal orientations as antecedents of workplace advice ties which have been shown to be an effective support structure for the implementation of enterprise systems (Sykes 2015). Building upon prior work, we seek to show, in the context of an ES implementation, how an individual’s goal-orientation affects their advice ties, and their use of the system. The proposed model was tested in a field study conducted in the HR business unit of a large multinational telecommunications organization over the course of a year (N=161). Results indicate that different goal orientations have differing impacts on advice networks and system use. This study has both theoretical and practical implications.

Keywords
Enterprise systems, system use, job performance, goal orientations, advice networks.

Introduction
The implementation of enterprise systems is one of the most prevalent organizational change activities. These enterprise-wide information technologies such as enterprise resource planning (ERP) systems bring major changes in the organization. “(ERP) system is a packaged business software system that enables a company to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a total, integrated solution for the organization’s information-processing needs” (Nah et al. 2001). ES systems not only include changes in software and hardware that employees are expected to use, but also changes in business processes and workflows (Morris and Venkatesh 2010). People form the culture and the structure of the organization (Rosario 2000). Thus, people have an important role to play in the ES lifecycle and their attitude towards learning will help decide the success or failure of the enterprise system. For change management, which is one of the critical success factors for ES implementation, training and education of the users for understanding the system is very important (Bingi et al. 1999). ES spending worldwide is projected to reach $387B worldwide in 2018, a growth rate of 9.4% over 2017 (Gartner 2017). Average training expenditures for enterprise systems for large companies in the US increased from $12.9 million in 2015 to $14.3 million in 2016. Despite the potential benefits, 50-75% of ES implementations are considered some amount of failure (Sykes et al. 2014). New ES implementations can be accompanied by uncertainty and structural realignments which creates pressure for sources of information, during the shakedown phase (Morris and Venkatesh 2010; Sykes et al. 2014). This pressure can become one of the reasons for employees to show resistance towards the new enterprise system leading ERP failure.

Enterprise systems work by closely linking and integrating different business functions (Stefanou 1999) and thus close cooperation is required for these business functions to work together. Workflow advice networks can play a role in this situation (Sparrowe et al. 2001, Sykes 2015). Workflow advice networks can also help employees understand new business processes, which are introduced in ES implementation (Burkhardt and Brass 1990). In this study, we examine how goal orientations of an individual can have an effect on advice ties. According to Goal-setting theory, human behavior is purposeful and regulated by an
individual’s goals (Locke and Latham 1990). Carol Dweck, who coined the construct goal orientation, proposed that individuals have goal orientation preferences in achievement situations (Dweck 1986). She identified two major classes of goal orientations: (a) a learning goal orientation, which is to develop competence through expanding one’s capabilities by mastering challenging situations, and (b) performance goal orientation, which is to demonstrate and validate one’s competence by seeking favorable judgments and avoiding negative judgments. Later VandeWalle (1997), divided performance goal orientation into proving goal orientation and avoiding goal orientation taking support from the definition of Heyman and Dweck (1992). According to the definition, performance goal orientation encompasses both the desire to gain favorable judgments about one’s ability and the desire to avoid unfavorable judgments about one’s ability. Goal orientation may affect the employee’s level of motivation to participate in the training program as well as performance in the program, and the degree to which the trained knowledge and skills are transferred to the job setting. Accordingly, this main purpose of the study is to understand the following:

- In the context of an ES implementation, how does an individual’s goal-orientation affect their advice ties and their use of the system?
- How do goal orientation constructs (learning, prove performance, avoid performance) influence downstream outcomes (system use and job performance)?

**Theory Development**

In this section, we first discuss goal orientation and its different types. Thereafter, we discuss advice networks and their importance in the context of an ES implementation. We then develop hypotheses relating different goal orientations to work-related get-advice ties and downstream outcomes like system use. The hypothesis will also reflect on the moderating role of work-related get-advice ties on the relation between system use and job performance.

**Goal Orientation and its Different Types**

Dweck (1986) defined goal orientation as individual differences in goal preferences in achievement situations. Dweck and Leggett (1988) referred to goal orientation in terms of learning goal orientation and performance goal orientation. Learning goal orientation is associated with incremental theory and is defined as the belief that ability can be developed and that effort is an effective strategy for developing the ability needed for successful task performance. Performance goal orientation is associated with an entity theory and is defined as the belief that ability is difficult to develop and that successful task performance is primarily based on possessing the requisite innate ability. Initially, goal orientation was conceptualized using only two dimensions: Learning goal orientation and Performance goal orientation (Button et al 1996). Over time, some studies saw nonsignificant or negative relationships of performance goal orientation with task performance (Fisher and Ford 1998). This situation directed the researchers to conceptualize goal orientation as a three-factor model. VandeWalle (1997) bifurcated performance orientation into a performance-approach orientation and a performance-avoidance orientation. VandeWalle (1997) defined goal orientation as a three-factor model by building on the definition of performance goal orientation given by Heyman and Dweck (1992). They defined performance goal orientation as encompassing both desire to gain favorable judgments about one’s ability, and the desire to avoid unfavorable judgments about one’s inability.

Thus, VandeWalle (1997) defined the three dimensions of goal orientation as follows:

1. A learning goal orientation: a desire to develop the self by acquiring new skills, mastering new situations, and improving one’s competence.
2. Prove (performance) goal orientation: the desire to prove one’s competence and to gain favorable judgments about it.
3. Avoid (performance) goal orientation: the desire to avoid the disproving of one’s competence and to avoid negative judgments about it.

**Advice Networks**

Workplace advice networks comprise employees in a defined workplace setting (e.g., business unit) who seek and provide information, assistance, and expert knowledge to and from one another in order to
perform their jobs (Sparrowe et al. 2001). Workflow advice can help an employee understand the new business processes (Burkhardt and Brass 1990). Workflow advice networks also serve as coping mechanisms during an organizational change event (Beaudry and Pinsonneault 2005) by helping employees acclimatize to the new norms brought about by the ES implementation (Coleman 1988). Since we would particularly be dealing with work-related get advice ties, it is important to define what get-advice mechanism would be. Get-advice is a mechanism through which employees acquire knowledge by asking others who they feel have more knowledge than they do. The nature of human cognition is such that no one employee can know everything (Brandon and Hollingshead 2004). However, employees can create links to other employees in order to access diverse information that they do not possess (Hollingshead 1998). An employee with more expansive get-advice ties can leverage those ties to get access to the right information in a timely manner (Burt 1992). Getting advice specifically related to workflows will lead to greater breadth and depth of knowledge about the new environment.

**Job Performance**

Job performance relates to how well one does one’s job. Sykes et al. (2014) argued that advice networks like workflow networks and software networks and their interactions have an effect on job performance after the implementation of ES systems. Peer advice ties have shown to have an impact on job performance of employees and peer advice ties are a stronger support structure as compared to other traditional support structures required in the context of ES implementation (Sykes 2015). These studies reflect the importance of advice ties and their role in job performance after the implementation of ES systems. In our study job performance was evaluated by supervisor-rated performance obtained from the organization’s employee record archives (annual job evaluations) and measured using the job effectiveness scale related specifically to the job (as compared to career or innovation) (Welbourne et al. 1998). In our research model (Figure 1), we try to understand the impact of the different goal orientation dimensions on work-related advice ties and the moderating effect of these advice ties on the relationship between system use and job performance.

![Diagram](figure1)

**Figure 1**

**Hypothesis Development**

Avoid performance goal orientation was positively related to anxiety (Button et al. 1996) but is negatively related to optimism and the desire to work hard (VandeWalle 1997). Some studies also suggest that avoidance goal orientation are unproductive for enhancing performance. Emmons (1996) compared the influence of prove performance and avoid performance goals. He reported that individuals who focused on avoiding negative outcomes had higher levels of psychological distress and anxiety. Given that anxiety is associated with being off-task (Kanfer and Heggestad 1997), avoidance content goals may also be unproductive for performance. Since avoid goal performance is shown to be associated with anxiety.
whereas learning goal orientation and prove performance goal orientation has been associated with self-development, thus people with different goal orientations will have a different impact on system use in an organization.

Thus, we hypothesize:

H1 (a): An individual’s learning goal orientation will positively influence his/her system use.

H1 (b): An individual’s prove performance goal orientation will positively influence his/her system use.

H1(c): An individual’s avoid performance goal orientation will negatively influence his/her system use.

Advice networks (Sparrowe et al. 2001), which comprise of employees who seek and provide information, assistance, and expert knowledge to and from one another in order to perform their jobs, play a major role in connecting a positive goal oriented individual towards a better job performance. Workflow advice networks help employees understand new business processes, which are introduced in ES implementation (Burkhardt and Brass 1990). Goal orientation influences the interpretation of advice given. Individuals with learning goal orientation are positively related to optimism (VandeWalle et al. 1999). An individual with a positive attitude would always be interested in taking advice from others for their development. On the contrary, individuals with prove performance goal orientation are interested in gaining favorable judgments from others. Thus, such individuals look at advice, which reflects their weakness as a threat to their ability. The different interpretations of advice lead us to the opinion that learning goal orientation would be more interested in taking advice in comparison to proving or avoid performance goal orientation.

Thus, we hypothesize:

H2 (a): An individual’s learning goal orientation will positively influence their work related get advice ties.

H2 (b): An individual’s prove performance goal orientation will negatively influence their work related get advice ties.

H2 (c): An individual’s avoid performance goal orientation will negatively influence their work related get advice ties.

System use is defined as the behavior of using the system (Seddon 1997). This construct has played a critical role in the information systems literature. It is the ultimate dependent variable in technology adoption models (Venkatesh et al. 2003) and a key variable in IS success models (DeLone and McLean 2003). Learning to use a new system entails a knowledge transfer process across users with different levels of skills and that can lead to better job performance. Thus, we hypothesize:

H3: Greater system use will positively influence job performance.

Complex technologies like Enterprise systems pose very high learning requirements (Aiman et al. 2002), which make them mentally fatiguing and frustrating (Mumford et al. 1987). Social network resources as peer advice at the workplace can help employees learn features unique to the new system and gain the skills needed to use the new system. Familiarity with frequent contact, social pressure from peers, and altruism toward intimates are diverse explanations proposed for the provision of social support (House et al. 1988). A network of strong, interrelated (dense) contacts also means that the providers of support are familiar with the employee's role requirements and needs. Peer support can enhance the employee's competence in using the information system and lead to greater system use (Sykes et al 2009). Thus, we hypothesize:

H4: An individual’s work-related get advice ties will positively moderate the relationship between system use and job performance such that greater the advice ties, the greater the job performance.

**Method**

In this section, we describe the setting, measurement, and data collection.
Setting
The data was collected in the HR business unit of a large multinational telecommunications organization collected in the United States. There were three waves of data collection: (T0: Pre-impl (apprx. 2-3 months pre-training); T1: Post-training (approx. 2-3 months post-T0); and T2: 1 Year post-training (approx. 1 year post-T1).

Participants
The participants were all employees in the HR business unit as all members of the unit were expected to use the new ERP. There were 161 out of 200 that completed all surveys at all times of data collection. The sampling frame was a list of all employees in the focal department.

Goal Orientations
Goal orientation dimensions were obtained by using the previously validated 13-item goal orientation scale developed by VandeWalle (1997).

Social Network Constructs
We used widely accepted sociometric techniques to collect social network data (Wasserman and Faust 1994). We focused on the work-related get advice networks. Participants were asked to fill out a full departmental unit roster with how often they went to others for advice related to doing their work (ranked 1-5 covering less than once a month to multiple times in a day.) If they did not so interact with an individual on the roster, they were asked to leave the line blank. Network ties were dichotomized at 3 and above equaling a tie as this was deemed appropriate to rule out incidental/happenstance contacts in favor of actual network ties (see Sykes et al. 2014 for detailed explanation).

Dependent Variable: Job Performance
We operationalized job performance as annual supervisor-provided ratings. The ratings are based on four items, with Likert-type scales based on Welbourne et al. 1998. These measures those commonly used by the organization. The ratings for measuring job performance were aggregated based on the quantity of work output, quality of work output, the accuracy of work and how well a person works with others. According to the organization, the scale was found to be reliable across several years and thousands of employees. We were given access to the item-level data for our analysis.

Results
Table 1 shows the descriptive statistics and correlations. The descriptive statistics suggest that employees having different goal orientations will have a different influence on their get advice ties. The control variables were correlated with pre-implementation job performance, as expected. Of all the variables, organizational position was most highly correlated with pre-implementation job performance. On the contrary, organizational tenure was most highly correlated with post-implementation job performance. The three goal orientations were correlated with advice network ties. The learning goal orientation and interestingly prove performance goal orientation showed a positive impact on get advice ties. Avoid performance goal orientation showed a negative impact on get advice ties. The learning and prove performance goal orientations were positively correlated with system use whereas the avoid performance goal orientation was negatively correlated with system use. Both system use and advice network ties were positively correlated with post-implementation job performance. The correlation between system use and post-implementation job performance was .35 and the impact of advice network ties on post-implementation job performance was .33, suggesting that advice network ties and system use have a great impact on job performance. Further, the correlation between learning goal orientation and system use was .28, which shows a significant impact of learning goal orientation on system use. The correlations between prove performance and avoid performance goal orientation on system use were above .20. The correlations between learning goal orientation prove performance goal orientation and avoid performance goal orientation on advice network ties were around .20.

Model Testing
We analyzed the data with system use, advice network ties and post-implementation job performance as the dependent variables. The results of the hierarchical regression analysis examining the effects of the
control variables, goal orientations in predicting system use are shown in Model 1 and 2 respectively of Table 2. In Model 2, we added the main effects of goal orientations on system use. (H1 a, b, c). In Model 1, the control variables explained (5%) of the variance in system use whereas goal orientations explained (14%) of system use in Model 2. The results of the hierarchical regression analysis examining the effects of the control variables, goal orientations in predicting advice network ties are shown in Model 4 and 5 respectively of Table 2. In Model 5, we added the main effects of goal orientations on advice network ties (H2 a, b, c). In Model 4, the control variables explained (12%) of the variance in advice network ties whereas goal orientations explained (20%) of system use in Model 5. The results of the hierarchical regression analysis examining the effects of the control variables, advice network ties and system use and the interaction between advice network ties and system use in predicting job performance are shown in Model 6, 7 and 8 respectively. In Model 7, we added the main effect of system use on job performance (H3). In Model 8, the interaction effect of advice network ties and system use on job performance are shown (H4). In Model 6, the control variables explained (11%) of the variance in job performance whereas system use explained (21%) of job performance in Model 7. Finally, the interaction term explained (31%) of the variance in job performance in Model 8 which was much higher than the model with only direct effects.

**Discussion**

This work aimed to understand the role of goal orientation: leaning goal orientation, prove performance goal orientation and avoid performance goal orientation in the context of an Enterprise System implementation. Advice ties in a workplace have shown to have a stronger impact on job outcomes like job stress, job satisfaction and job performance than other traditional support structures in the context of ES implementations (Sykes 2015). Goal orientations are believed to create different perceptual-cognitive frameworks for how individuals approach, interpret, and respond to achievement situations (e.g., Barron and Harackiewicz 2000). Because different types of goal orientations look at advice given by others in different ways, we used this argument to gain a richer understanding of how different goal orientations can influence advice networks and downstream outcomes (system use and job performance). The results lend support to the idea that in the context of an ES implementation, different goal orientations affect advice networks and downstream outcomes differently. Our proposed model explained 31% of the variance.

**Theoretical Implications**

This research builds on the concept that different goal orientations of individuals can effect advice networks as well as downstream outcomes (system use and job performance) in different ways. Achievement goal theory and research suggest that employees’ job performance depend on their goal orientations (Phillips and Gully 1997). This work analyzes how an individual’s goal orientation effects his or her downstream outcomes as well as work-related advice ties. Different goal orientations of the employees have shown to influence work-related advice ties as well as the system use differently. The reason for different types of goal orientations to have different impacts on advice networks is that they perceive advice from their peers differently.

The first three hypotheses (H1 a, b and c) were reflecting the impact of different goal orientations on system use. The hypothesis was supported. The reason for this finding was that goal orientation creates the mental frameworks that individuals use to interpret and respond to achievement situations (Dweck and Leggett 1988). Learning goal orientation has been linked to an intrinsic interest in and value for learning (Ames 1992). Individuals with prove performance goal orientation are interested in proving to others that they are capable and so they would use the system as much as possible to prove to others that they are capable. On the other hand, individuals with avoid performance goal orientation view a challenging task as a threat because there is the risk of failure that would demonstrate their inadequate ability and so they use the system less to avoid this situation. In challenging situations, these individuals pursue a maladaptive response pattern, in that they withdraw from the task, make negative ability attributions, and report decreased interest in the task. They would use the system less.

**Practical Contributions**

Beyond the theoretical advances that this work presents, it has implications for practitioners. This work advances our knowledge by illustrating how employee advice networks can increase the confidence of
workers towards the new Enterprise System and thus lead to better job performance. The findings could allow management to develop more meaningful interventions (such as training and support offerings) that will improve individuals’ acceptance and adoption of new enterprise systems. By getting an insight from this study, the organizations could identify their employees from their goal orientations and would be able to predict what could be their approach towards different levels of tasks (easy, moderate or challenging) assigned to them. Managers could leverage from the findings of this study to understand what kind of individuals they should employ for their organizations for the most efficient job performance.

The hypothesis H2 (a) was supported. Individuals with learning goal orientation see advice as a method to learn and be successful and thus they positively affect the advice networks. Similarly H2 (b) was supported but the relationship was opposite to what was argued in the hypothesis. The reason for this finding could be that individuals would seek as much advice as possible to reflect their skills. H2(c) was not supported.

Hypothesis H3 was also supported. This hypothesis reflected the impact of system use on job performance. The reason for this finding could be that individuals using the system more would learn more and so they would perform better in their jobs. Hypothesis H4, which emphasizes on the positive impact of advice networks on the relationship between system use and job performance was supported. The interaction between advice ties and system use was significant with a positive coefficient, thus reflecting a positive impact of advice network on the relationship between system use and job performance.

**Limitations and Future Research Directions**

This work has a few limitations that should be acknowledged so that the results can be interpreted with the necessary caution. Research has reflected that ES implementations are complex and time-consuming (Markus and Tanis 2001). The implementation of ERP systems causes greater change with broader impacts on employees, fundamentally changing the nature of tasks, workflows, and, by extension, the jobs themselves (Davenport et al. 1998). We built upon earlier work on support structures' influence on ES implementation outcomes (Sykes 2015; Sykes et al. 2014) by understanding the influence of an individual’s goal orientations (Dweck 1986) on workplace advice ties and downstream outcomes. However, this study was restricted to the workplace get advice ties whereas the advice networks would comprise of give advice ties as well. It could be that these findings might change for give advice ties.

Thus, an area for possible future work would be to examine the effects of individual’s goal orientation on workplace give advice ties. Although this paper examined workplace advice ties, future work should build upon this by examining the impacts of individual’s goal orientations on other types of networks like communication, friendship, and hindrance networks (e.g. Sparrowe et al. 2001). Focusing on these different networks could give a rich understanding of how different networks are affected because of different goal orientations. Another area to explore could be that how different goal orientations could lead to the formation or dissolving of different networks.

**Conclusion**

This research studied the impacts of individual’s goal orientations on their advice ties and their use of the system. Strong evidence was found to suggest that different goal orientations of individuals could have different impacts on their advice ties and system use. Learning goal orientation had a positive influence on an individual’s get advice ties as well as system use. Prove performance goal orientation had a negative impact on workplace get advice ties but had a positive influence on system use. On the contrary, avoid performance goal orientation had a negative impact both on workplace get advice ties as well as system use. This work advances the ES implementation literature by highlighting an important employee characteristic, which also has a role to play in the success and failure of ES implementation. This work suggests that employee’s goal orientations should be leveraged in order to increase the likelihood of success of new ESs.
### Table 1. Average Variance Extracted, Descriptive Statistics, and Correlations

#### Notes:
1. Diagonal elements are the square root of the shared variance between the constructs and their measures (AVEs); off-diagonal elements are correlations.
2. ICR: internal consistency reliability; N/A: Not applicable.
3. *p<.05; **p<.01; ***p<.001.
### Goal Orientations, Advice Ties and Employee Outcomes

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Table 2. Final Model: Predicting Post-Implementing Job Performance

Notes:
1. *p<.05; **p<.01; ***p<.001.

### REFERENCES


