Intent to Use Technology: Facilitation Effect of Group Presence

Sean C. Walker¹ and John Pearson²

¹University of Tennessee at Martin, USA
²Southern Illinois University Carbondale, USA

Abstract

Although there has been much empirical attention on studying groups and ones intention to adopt new technology, almost no research has focused on how this adoption is influenced by the collective nature of the implementation. The purpose of this study was to study an important contextual factor, whether group versus individual adoption of technology influences ones intention to adopt new technology. We utilized two different methodological approaches: ANOVA (study 1) and Conjoint (study 2) to assess, not only the importance of product usefulness but also group presence. We found that group presence facilitated intent to use a new technology. Future research and practical implications are then discussed.

Keywords: Groups, intent to adopt new technology, usefulness

1. Introduction

The advent of technology has led to the dramatic change and emancipation of organizations from following the status quo in terms of business processes. As such, there is a profound importance for organizations to stay attuned with developing technologies as a means to understand which technologies should be adopted and implemented and which ones should be ignored. Furthermore, it is important for organizations to understand the importance of how the adoption of these new technologies impacts their employees. Without garnering employee acceptance, the adoption and implementation of a new technology is doomed for failure. Subsequently, it makes the focus on employees’ intent to use new technology highly prevalent for managers.

Multiple models have been used to explain ones intention to use new technology. Among these are Technology Acceptance Model (Davis, 1986), Theory of Planned Behavior (Ajzen, 1985, 1989), and Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003). One of the foundational consistencies amongst these models is that one’s behavioral intention to use a technology commonly leads to that individual actually using the technology (see Ajzen and Fishbein, 2005). Two of the common antecedents leading to ones behavioral intention to use a new technology are user involvement and user attitude. A vast body of empirical research and theoretical conceptualizations have shown that these constructs lead to actual usage (Amoako-Gyamp, 2007; Baroudi et al., 1986; Davis, 1993; Olson and Ives, 1982; Robey, 1979; Tait and Vessey, 1988; Zmud, 1979).

It is undeniable these days that in order to survive, one must rely on others. This dependence can be seen in a myriad of social interactions in which the absence of others would make the task much more difficult and put limitations on the individual’s ability to perform. This may be in the form of affection of an intimate other, that is, need to
belong, (Baumeister and Leary, 1995), friendship, buying groceries at the store, pumping gas at the gas station, or earning an education in secondary and post-secondary education.

The successful outcome of these social interactions can either inhibit or facilitate ones dependence on groups as it allows for greater efficiency in the performance of the task. In fact, social exchange theory, which involves a set of interactions that generate obligations (Emerson, 1976) between participants within the exchange (Blau, 1964) and may create a high-quality relationship (Cropanzano and Mitchell, 2005), reverberates the importance of reciprocation and by serving others, in turn, others will serve you.

In today’s turbulent times, people rely on groups more than ever before. Organizations are utilizing work groups more than ever before, especially within the IT department. Companies utilize the IT department to proactively (e.g. building a firewall) and reactively (e.g. handling of a virus or breach) protect/secure consumer information. Even though people’s outcomes are intertwined so tightly, and it would be more advantageous to work together, many still view groups and the members within those groups negatively.

Although there has been a large body of research studying groups and studying ones intent to use technology, we are currently unaware of any attempt to wed these two literatures in an attempt to provide further explanatory power for why individuals use or refuse to use new technology. The purpose of this research is to determine whether or not contextual factors such as, product usefulness and whether the adoption of the new technology is solely for one’s job or one’s department, influence intention to use the new technology. The paper first provides a brief glimpse into what is known about the intention to use new technology literature. Then we provide a look at how the findings on ones intention to use new technology have been prevalent in the management literature. Next we provide an analysis of the groups’ literature and profound impact the groups have. Then we assess how the groups’ literature has impacted organizational issues. Finally, we conduct a scenario based survey in order to assess the influence of group presence during the adoption of new technology on ones intent to adopt.

2. Theory and Hypotheses
2.1 Intent to Use

Behavior intention is defined as “the degree to which a person [individual] has formulated conscious plans to perform or not perform some specific future behavior” (Warshaw and Davis, 1985: p. 214). Intention has been posited by many theorists as the closest cognitive antecedent to actual behavior and substantial empirical evidence supports the theoretical intention-behavior relationship (see Ajzen and Fishbein, 2005). While intention is widely used in general purpose adoption models, it should also be noted that intention has been used as the dependent variable in numerous models designed to predict technology adoption. Stated differently, behavioral intention to use new technology is expected to lead to actual usage and this intention may be derived from attitude formation (Amoako-Gyampah, 2007; Bock et al., 2005; Jackson et al., 2007).

Antecedents. There are two main antecedents to ones intent to use new technology that we will focus on in this study: the users’ involvement in the implementation and adoption of the new technology and user attitude.

The construct of user involvement was initially embedded within user participation construct, but the work of Barki and Hartwick (1989) proposed that the two are actually conceptually distinct constructs and that it would be advantageous to scholars to separate the two. They later elaborated on this separation (see Hartwick and Barki, 1994) by proposing that user participation leads to involvement and that user involvement mediates the linkage between user participation and system usage. User involvement is a need-based motivational attitude (Kappelman, 1995) and is a prevalent tool for reducing potential psychological discrepancies the user may be having about adopting the technology. New system implementation can be often seen as a threat to the user as it introduces an element of ambiguity and even at times a feeling of obsolescence. As such, Baronas and Louis (1988) have proposed that such an implementation can represent a threat to the users’ perception of control over their work life and heightened times of ambiguity and instability when old systems are phased out and new ones introduced. Furthermore, they argue that including
users in this implementation can reduce this perception of threat.

A wide body of research has shown the relationship between involvement and intent to use technology. Intrinsic involvement, one of the two components of user involvement, has been shown to influence ones’ intention to use technology (Amoako-Gyamph, 2007). Research has also shown that user involvement in the development of information systems can enhance system usage and user satisfaction with the system (Baroudi et al., 1986). Furthermore, user involvement may lead employees to act more efficiently (Olson and Ives, 1982) as they are privy to the information and because of the perception of being closer to making the decisions.

User attitude for intent to use technology amongst organizational members is influenced by ones preconceived notions of the effectiveness and efficiency of information systems (Zmud, 1979) and may influence ones perceptions of the capability of information systems, the organizational environments susceptibility to accepting the technology, user interaction between employees, and perceptions toward organizational change (Guthrie, 1973; Schewe, 1976; Schultz and Slevin, 1975). Furthermore, it has been shown to be significantly related to actual system usage (Davis, 1993; Davis, Bagozzi and Warshaw, 1989; Robey, 1979) and system success (Tait and Vessey, 1988). For example, Robey (1979) found that attitudes were significantly correlated with system use. Specifically, Robey found that attitudes were less powerful in predicting subjective assessments and more significantly correlated with actual usage thus arguing for more confidence in the behavioral intention to actual system usage linkage as derived by ones preconceived attitudes or notions.

Although this body of research has been very informative on certain contexts or factors that influence ones intent to adopt new technology, it has yet to assess how ones intent is influenced by the presence of others during the adoption (i.e. adoption by oneself compared to in a group) and ones beliefs about groups. To assess the impact of the presence of others during the time frame in which one intends to adopt new technology, it is important that we assess some of the more prevalent issues that influence ones attitudes toward groups.

2.2 Groups

Until recently, little has been done to critically assess and advance what is known about the individual differences in terms of ones beliefs about groups (Karau and Elsaid, 2009). Divergent views in terms of the productivity and/or worth of groups is not hard to find within the literature. Some researchers have shown the positive aspects of group involvement such as social support, motivational gains, and increased performance (Buss and Kenrick, 1998; Katzenbach and Santamaria, 1999); whereas others have displayed the negative aspects of groups like, social loafing/compensation issues, process losses, conformity, and social dilemmas (Hoeksema-van Orden et al., 1998; Karau and Williams, 2001; Liden et al., 2004; Price et al., 2006). Other, more animated discussions, amongst scholars have highlighted this issue (Allen and Hecht, 2004; West, Brodbeck and Richter, 2004) or emphasized a further issue stemming from group involvement, group biases.

2.3 Group Biases

There are two forms of group biases that this research focuses on, internal and external (intergroup). Internal group biases are those actions and reactions which stemm from conflict within the group. Conflict can arise due to the ambiguous nature of power within a relationship, rules and norms, social comparison, and the formation of struggle groups (Pruitt and Rubin, 1986) and are prevalent in work groups in the form of distributive or procedural justice issues. Levine and Moreland (1990) noted that “an important form of conflict occurs when individual group members engage in behavior that would have negative consequences if everyone engaged in it (605).” This is the case when organizations structure their reward systems to compensate individual performance in the context of a group environment (e.g. contract year for athletes). Intergroup bias is the “systematic tendency to evaluate one’s own membership group (the in-group) or its members more favorably than a nonmembership group (the out-group) or its members (Hewstone et al., 2002: 576).” According to Hewstone and Cairns (2001) intergroup biases can be categorized as either explicit or implicit in which explicit conflict (e.g. prejudice such as stereotyping) is derived from and authenticated by
rules or norms. On the other hand, implicit conflict (e.g. ethnic genocide such as the Holocaust) refers to conflict without explicit adoption and implementation. As such, this may be present when management hands down an organizational change to employees such as a new technology.

Two of the theoretical underpinnings of group biases are social categorization and social identity. According to Tajfel (1981) social categorization is a “process of bringing together social objects or events in groups which are equivalent with regard to an individual’s actions, intentions and system of beliefs (254)” whereas he defines social identity as “that part of an individual’s self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership (255).” Essentially, to the more one identifies oneself with one group, especially a group categorized by one as prestigious and desirable, the greater the prevalence of intergroup biases one is likely to find. In other words, radically changing an employee’s work task may alter the employee’s identity within the firm, thus resulting in negative perceptions directed at the new technology.

The extent to which one exerts high and meaningful effort to categorize oneself and others into a group and the subsequent desirable rating attached to being included within that group can help researchers understand more about individuals' beliefs about groups. To the extent that an individual identifies the self as an individual versus group oriented, that individual will care little about and spend little time categorizing oneself and others into groups. Subsequently, little to no value and emotional significance will be engendered from any groups that individual belongs to (i.e. union membership derived from genuine versus advantageous beliefs about the unions worth).

2.4 Beliefs about Groups

The discussion up to this point has focused on the positive and negative aspects of groups as they are measured from observations and from a group or even societal level. It is important in order to understand ones beliefs about groups to actually measure this belief at the individual level. Karau and Elsaid (2009) developed the Beliefs about Groups (BAG) scale in an attempt to produce an overall summation score representing an individual’s preferences for group work, trust that others will contribute to group efforts, and positive and negative performance expectations for groups. The authors found evidence for convergent and divergent validity of their scale, along with test-retest reliability. The relevance of this scale can be seen from Elsaid et al. (2008) where individuals pre-selected for having high BAG scale scores did not socially loaf, whereas individuals with a low BAG scale score showed a prominent social loafing effect. Based on this discussion we seek to answer the research question:

Research Question: Does a collective versus individual nature of technology adoption facilitate or inhibit intent to use that technology?

3. Study 1

3.1 Method

Participants. Upper level undergraduate business students (N=46) participated in exchange for extra credit. 26 were male and 20 were female with a mean age of 23.26 years. We asked them how many years they have been using technology, how often they used them, and to provide a list of the technology they use. Average technological experience was 13.41 years and 43 of the respondents indicated they used technology (e.g. computers, cell phones, television, and mp3/iPod players) multiple times a day.

Measures. The dependent variable for this study is an amended version of the Barki and Hartwick (1994) scales for measuring user involvement and user attitude (see Appendix A) and was originally shown to generate alphas of .93 for user involvement and .99 for user attitude. In the current study they produced alphas of .94 and .96 respectively, thus suggesting excellent internal consistency. The User Involvement scale consists of 9, seven-point bipolar items that assess the importance (i.e. essential - nonessential) and personal relevance (irrelevant to me – relevant to me) of the technology. The User Attitude scale consists of 4, seven-point bipolar items that assess ones’ general attitude about the technology (i.e. useless - useful).

We also included Karau and Elsaid (2009) Beliefs About Groups scale (see Appendix B) in order to assess the extent to which the individuals intent to
use was based merely on their preference for group work. Prior research on the scale (Elsaid et al., 2008; Karau and Elsaid, 2009) have generated alphas ranging from .83 to .87. In the current study the alpha was .843, thus suggesting good internal consistency. The 16 item scale provides an overall summation score representing an individual’s preferences for working with groups (i.e. I’d rather work alone than work with others), reflects the extent to which one trusts that others will contribute to group efforts (i.e. I trust other people to work hard on group tasks), and the positive (i.e. Groups usually outperform individuals) and/or negative (i.e. Group projects usually fail to match the quality of those done by individuals) group performance expectations.

Manipulations. We used 2 (individual versus collective task) x 2 (incremental or monumental help) between-subjects factorial design. Participants received a one page scenario developed by the current authors depicting an organizational meeting announcing the implementation of new technology in the firm. Participants were asked to carefully imagine and visualize the situation as if they were the employee. The new technology was portrayed as either serving as an incremental aid or significant improvement to current organizational practices. It was announced that the new technology would be implemented immediately.

3.2 Results of Study 1

We analyzed the data via one way between-subject Analysis of Variance (ANOVA) for both the involvement and attitude scales. The conditions, originally a 2 X 2, were recoded with dummy codes so a comparison between all four conditions could be ran in one analysis. Where appropriate, we followed up the univariate results with comparisons to assess which of the conditions were significantly different than the others. Those in the Group/High Usefulness condition were 1, Group/Low Usefulness were 2, Individual/High Usefulness were 3, and Individual/Low Usefulness were 4. There was a significant main effect for Condition for User Involvement, F(3, 42) = 3.25, p < .04. Follow-up planned comparisons showed that those in the Group/High Usefulness condition had significantly higher involvement tendencies (M = 5.84) than those in the Group/Low Usefulness condition (M = 4.81, p < .03) and Individual/Low Usefulness condition (M = 4.85, p < .05). There also was a significant difference between the Group/Low Usefulness condition (M = 4.81) and the Individual/High Usefulness condition (M = 5.74, p < .05). Finally there was a marginally significant difference between the Individual/High Usefulness and Individual/Low Usefulness conditions.

There was a significant main effect for Attitude, F(3, 42) = 3.77, p < .02. The follow up post hoc comparison showed that the Group/High Usefulness condition had significantly higher ratings (M = 6.23) than the Group/Low Usefulness condition (M = 4.88, p < .01) and Individual/Low Usefulness condition (M = 4.75, p < .01). There were no other significant differences.

To assess the impact of individuals’ beliefs about groups as impacting their viewpoint of technology adoption, we ran a linear regression with age and technology frequency usage as controls and Beliefs about Groups as the independent measure (see Table 1 for means and correlations). As shown in Table 2, the individuals’ BAG score significantly increased the value of the model’s explanatory power above the contribution of condition. This result shows that group factors have an influence on ones intent to use new technology. This may be due to the fact that many change initiatives are derived from management and thus a positive view of groups reflects the individuals’ view of management as a group. In other words, if we feel that we have a good management staff (group) then we will have more involvement with the technology because if they think it will benefit us, then it probably will. We followed this up with a regression using our second dependent measure (attitude) (see Table 3 for correlations and means). We found similar, but stronger effects, this time. However, as seen in Table 4, ones attitude about adopting new technology is strongly influenced by BAG (p < .01), thus suggesting that individuals’ beliefs about groups positively influence their attitude towards adopting new technology.

Further Analyses. We followed up our analysis with a test for mediation as it seemed that BAG was “in the middle” of all of our findings. To assess this potential relationship we followed the Baron and Kenny (1986) procedure for mediation. To establish mediation, four conditions must hold. First, the independent variable must significantly affect the dependent variable (path c). Second, the independent variable must significantly affect the
mediator (path a). Third, the independent variable must significantly affect the dependent variable (path c’). Fourth, the mediator must affect the dependent variable (path b). Mediation is present when the effect for path c’ is significantly reduced compared to path c. We did not find mediation for BAG thus suggesting that one’s beliefs about groups is an individual predictor, not a 3rd variable, of one’s attitude towards and willingness to be involved with technology adoption.

### Table 1

Correlations between attitudes, conditions and BAG

<table>
<thead>
<tr>
<th>Variable</th>
<th>Attitude</th>
<th>Condition</th>
<th>BAG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>5.53</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>2.39</td>
<td>-.321*</td>
<td>1</td>
</tr>
<tr>
<td>BAG</td>
<td>3.12</td>
<td>.391**</td>
<td>-.276* 1</td>
</tr>
</tbody>
</table>

* Significant at p < .05;  
** Significant at p < .01

### Table 2

Regression of BAG and Condition on Involvement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>-.330*</td>
<td>-.237</td>
</tr>
<tr>
<td>BAG</td>
<td>.719*</td>
<td>.202</td>
</tr>
<tr>
<td>R Square</td>
<td>.103</td>
<td>.099*</td>
</tr>
</tbody>
</table>

* Significant at p < .05

### Table 3

Correlations between involvement, condition and BAG

<table>
<thead>
<tr>
<th>Variable</th>
<th>involvement</th>
<th>Condition</th>
<th>BAG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>5.40</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>2.39</td>
<td>-.197*</td>
<td>1</td>
</tr>
<tr>
<td>BAG</td>
<td>3.12</td>
<td>.414***</td>
<td>-.276* 1</td>
</tr>
</tbody>
</table>

* Significant at p < .10;  
** Significant at p < .05  
*** Significant at p < .01

### Table 4

Regression of BAG and Condition on Attitude

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>-.189</td>
<td>-.086</td>
</tr>
<tr>
<td>BAG</td>
<td>.652*</td>
<td>.179</td>
</tr>
<tr>
<td>R Square</td>
<td>.039</td>
<td>.140**</td>
</tr>
<tr>
<td>R Square Change</td>
<td>.039</td>
<td>.140**</td>
</tr>
</tbody>
</table>

** Significant at p < .01

### 4. Study 2

It is observed that an individual’s Beliefs about Groups indicate that there may be a meaningful and, currently untapped, perspective on why individuals adopt some technology and not others. Or why they adopt some technology faster than others. Although our ANOVA analysis did not show a significant increase in either attitude or involvement between High Usefulness for the Group and Individual conditions, our regression analysis indicate that we may be missing something. To assess the importance people place on adoption of technology in a work setting we designed a second study to utilize a conjoint approach approximately two weeks following the previous study.

#### 4.1 Method

**Technique.** Conjoint analysis is any “technique that requires respondents to make a series of judgments based on specifically developed profiles by the researcher (Shepherd and Zacharakis, 1997: 205)” and is primarily used in the field of Marketing research (Hair et al, 2006). This type of analysis was deemed appropriate as a follow-up to Study 1 because it allows the researcher to break down the respondent’s judgments and ascertain which of the considered factors or attributes of the profile is most important. In the current context, we wanted to more clearly understand if it was the degree of usefulness or a group context that led to an increased attitude towards an intention to use a new technology.

**Participants.** Because a secondary objective of the study was to compare two different methodologies (ANOVA and Conjoint), the same participants in the first study were also used in the second study.

**Procedure.** Respondents were recruited in class. Those that wished to participate were handed a
paper that had information describing the study and a URL that linked to the site where the survey could be found.

**Manipulation.** As we only had two factors we were comparing, usefulness and group presence, we decided to provide all possible comparisons. Although this is not typically done in the conjoint literature, this is usually because scholars are comparing a myriad of factors and to ask respondents to compare all possible comparisons would be too taxing. We, however, do not feel the 6 comparisons we generated would do this. Furthermore, as is common in the conjoint literature (Hair *et al.*, 2006) we repeated two of the comparisons to increase confidence that findings were not random due to respondents’ lack of seriousness. We asked respondents to indicate which of the two presented conditions were preferable. The language in the conditions was the same except for the manipulations: “A technology adoption in which it [only impacted my job versus impacts my entire department] and the application will improve [my job significantly or slightly improve my job versus our job significantly or slightly improve our job]”. The significance of the improvement was indicated by either reducing customer service time from 15 to 5 minutes or 15 to 13 minutes.

### 4.2 Results of Study 2

As can be shown in Table 5, there was a clear distinction between the attributes of the technology adoption. Of particular emphasis were the comparisons between a profile that was highly useful but manipulated as to individual or group orientation and a profile that was not very useful but manipulated the group versus individual orientation. The results showed that nearly three to one respondents preferred a profile where a new technology was adopted in a group versus individual context, no matter if the technology was highly useful or not. As Table 6 shows, the respondents’ choices led to an attribute ranking such that the most preferable profile was adoption at the group level and highly useful and the least important was at the individual level and not useful. These findings suggest the importance of contextual factors of technology adoption that have previously been overlooked in the literature.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Frequency of Conjoint Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
</tr>
<tr>
<td>I/F</td>
<td>66</td>
</tr>
<tr>
<td>I/L</td>
<td>10</td>
</tr>
<tr>
<td>I/L</td>
<td>9</td>
</tr>
<tr>
<td>G/F</td>
<td>67</td>
</tr>
<tr>
<td>I/F</td>
<td>11</td>
</tr>
<tr>
<td>G/F</td>
<td>65</td>
</tr>
<tr>
<td>G/F</td>
<td>69</td>
</tr>
<tr>
<td>G/L</td>
<td>7</td>
</tr>
<tr>
<td>I/L</td>
<td>18</td>
</tr>
<tr>
<td>G/L</td>
<td>58</td>
</tr>
<tr>
<td>I/F</td>
<td>52</td>
</tr>
<tr>
<td>G/L</td>
<td>24</td>
</tr>
<tr>
<td>G/F</td>
<td>69</td>
</tr>
<tr>
<td>I/L</td>
<td>7</td>
</tr>
<tr>
<td>I/F</td>
<td>19</td>
</tr>
<tr>
<td>G/F</td>
<td>56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Attribute Rankings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High Usefulness</td>
</tr>
<tr>
<td>Individual</td>
<td>2</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
</tr>
</tbody>
</table>

### 5. Discussion and Conclusion

We built from traditional intent to use and usefulness models to add the importance of ones beliefs about groups and group aspects to ones attitude towards and likelihood of adopting new technology. Specifically, we measured how ones work nature (collectivistic versus individualistic) and the degree of improvement the technology would bring to the individuals would influence their intent to use. The current findings indicate that the context in which individuals are introduced to new technology adoption and the degree of improvement in the individuals work life can increase the individual’s willingness to use the
technology. Specifically, although we naturally resist change, when the change was perceived as being a significant improvement to ones current work or the new technology was being phased in on an entire department and not just the individual, the individual had greater intent to use the technology. This suggests that it is important that management makes it abundantly clear how the new technology will be able to facilitate the individual’s job, and when possible, implement new technology for entire groups of employees, not individually. Furthermore, and possibly more interesting, we also found that an individual’s beliefs about groups was an independent predictor of attitude and involvement with new technology adoption. This is meaningful because it seems like the management staff was lumped together as a “group” while most likely the employees were also a “group” and the higher opinion the individual had about groups, the higher their attitude and willingness to be involved with the project. As noted earlier, this result implies, although not directly tested here, that when employees feel that management is looking out for their best interests and knows that management, as a group, is striving to perform at a high level and thus would not introduce a new technology if it would serve as a detriment to the organization.

This study has a major methodological strength as it utilized two different approaches ANOVA’s and Regressions in Study 1 and Conjoint Analysis in Study 2. This is important because both studies found converging evidence that group involvement during new technology adoption does matter. Furthermore, these two approaches are important because many scholars in the management field are hesitant to utilize conjoint analysis in their studies while many scholars in the IS literature are apprehensive of utilizing (M) ANOVA’s in their studies. The convergence of evidence here provides: 1) higher degree of confidence in our findings and 2) an illustration to scholars in both fields that both of these tools can be used in both fields and in our opinion should be. ANOVA’s allow IS scholars to survey individuals and measure their ratings on a myriad of fields such as their attitude or their willingness to be involved in a project such as shown here. This allows IS scholars to provide more richly detailed accounts to respondents thus allowing for clearer understanding of their findings. On the other hand, Conjoint allows management scholars to parse out the importance of individual attributes and assess their importance in a combinatory manner. In other words, some attributes may be more important when coupled with some attributes and less important when coupled with others.

As with all studies, this one is not without its weaknesses. Firstly, we used a small sample of college students who volunteered. Some may argue that college students do not appreciate the experience they were reading about (new technology being adopted in an organization) and thus can’t provide accurate assessments. However, we would contend that the fundamental bases for this assessment are attitude and willingness to be involved with new technology and ability to handle change. Students are constantly dealing with change in a college atmosphere, much of which involves them utilizing new technologies (such as registering for, monitoring, and participating in classes online). Furthermore, the utilization of such a tech savvy generation might raise the question that ones willingness to use the technology is actually overstated. Given this, we do note that future research should utilize a different sample, such as workers that are going to, currently are, or have undergone such change. A second critique of our study is the utilization of a scenario. Some may feel this lacks realism. While this point has its merits, we would argue that the purpose of this study is to gain an understanding of the basic processes in terms of how introducing new technology influences employees. As such, although generalization may be weaker than in a field setting, by providing all of the relevant stimuli to the students in the scenario, we have greater confidence of the internal validity of our findings. A final critique, we must acknowledge, is that the use of the Internet for the Conjoint component begs the question of who truly answered the study. As with all Internet studies, there is a degree of trust that the individuals charged with answering the survey are the ones actually doing so. We have a higher degree of confidence that it was our students participating in the study because we had them send an e-mail upon completion of the study. Therefore, we are combining the likelihood of someone else having access to the URL where the study was located with the likelihood of someone having access to the individual’s e-mail account. No matter, we must acknowledge this as a potential weakness.
There are several implications for management. First, managers must focus on the context of organizational change initiatives that involve the introduction and subsequent adoption of new technology. Specifically, introducing the technology to a group rather than an individual and illustrating to employees that management wants them to thrive will play an important role in increasing attitudes and willingness to use this new technology. Second, it is integral that management illustrate to employees how the new technology will make their lives easier. This can be done through a product demonstration or presentation on the technologies usefulness such as data on reduction in errors, reduced waste, or increased performance. Third, building off the two previous points, this study re-emphasizes the importance of the context that they introduce new technology. Although not statistically different, the highest ratings for involvement or attitude were always the condition with Group/High Usefulness. This suggests that coupling the beneficial traits of a new product with the advantage of not learning something by themselves leads to even higher attitudes and willingness to use the product. This type of increased attitude and involvement could serve as a contagion (see Hatfield et al., 1994 discussion of emotional contagion) that spreads to other employees within the firm.

There are also several implications for scholars. First, these findings provide IS scholars with an additional piece of the puzzle for understanding new technology adoption. Not only must it be useful but it also should be introduced in a group rather than individual setting. And when this occurs in both a group setting and the technology is presented as being highly useful, it seems you will see the profound effect. Furthermore, individual’s beliefs about groups are highly important to predicting attitude and involvement towards the new technology. This suggests that perhaps individuals are assessing management as a “group” and when they have positive perceptions of management, they similarly have positive views of the technology management adopts. Secondly, for Groups scholars, this study indicates another instance upon which groups have influence. It seems that the Romance of Teams debate (lively discussion with Allen and Hecht, 2004; Paulus and Van der Zee, 2004; West et al., 2004) may have some emphasis or sway on these findings. It may be that the reason for the BAG findings was because employees categorize the ‘classes’ of the organizational hierarchy as different groups and when they have a positive evaluation of that ‘class or group’ then they will likely have a positive evaluation of those things they introduce to the employees. This is important for groups’ scholars because it illustrates the importance of groups’ studies outside of the normal realm for their studies. Finally this study illustrates that scholars in both fields may reap benefits by utilizing a more interdisciplinary approach to their studies. In fact we found that converging results using two different methodologies provide confidence that both techniques could and should be used in both disciplines. The utilization of these techniques pose as a valuable asset for pulling more pieces from the ‘black box’ of unknown variables influencing the phenomena we study.

Future research should consider assessing other contextual factors and their influence on ones intent to use technology. For instance, does the person that introduces the idea of the technology impact ones intent to use it? If employees are informed by their immediate supervisor compared to a consultant hired to implement the technology are they more or less likely to use it? Furthermore, does the source of the idea have an impact? It may be that ideas generated from the bottom-up within the organization may be more effective than top-down as the employees feel they will be more beneficial since they were generated from a fellow employee and not from some corporate ‘big wig’ who has no clue what the employees do on a daily basis. Finally, it would be beneficial to assess the impact of demography on ones intent to use. Does the homogeneity of the individual introducing the technology increase buy-in for the employees? It may be that seasoned employees within a manufacturing firm may be more willing to give a new technology a fair chance if the individual introducing and implementing is more similar to them as compared to a 24 year old recent MBA graduate with little to no real world work experience.

All together we feel that this study provides an illustration of two main points. Firstly, employees’ perceptions of groups are very valuable to their attitude and willingness to be involved with new technology adoption. Secondly, scholars in both the IS and Management fields should pull from one another and share their different methodologies.
and techniques in order to gain a better understanding of the phenomenon they study. Based on these points, we hope this research serves as a foundation for future research and utilization of more cross-disciplinary approaches to studying interesting phenomenon.

References


Appendix A

User Attitude and Involvement scales

User Involvement (Barki and Hartwick 1994): The following items used a seven-point, bipolar scale. The first set of five items represents the importance subscale of involvement. The second set of four items represents the personal relevance subscale of involvement.

Please circle the answer that best describes your beliefs toward the previously described technology. I believe this type of technology is:

1. 1 = Nonessential 7 = Essential
2. 1 = Trivial 7 = Fundamental
3. 1 = Insignificant 7 = Significant
4. 1 = Unimportant 7 = Important
5. 1 = Not Needed 7 = Needed

1. 1 = Irrelevant to me 7 = Relevant to me
2. 1 = Of no concern to me 7 = Of concern to me
3. 1 = Doesn't matter to me 7 = Matters to me
4. 1 = Means nothing to me 7 = Means a lot to me
*These items were reverse-scored in the survey instrument

User Attitude (Barki and Hartwick 1994): The following items used a seven-point, bipolar scale.

Please circle the answer that best describes your attitude toward the previously described technology. I believe this type of technology is:

1. 1 = Useless 7 = Useful
2. 1 = Bad 7 = Good
3. 1 = Worthless 7 = Valuable
4. 1 = Terrible 7 = Terrific
*These items were reverse-scored in the survey instrument.
Appendix B

Beliefs About Groups Scale

1) I’d rather work alone than work with others.*
2) I’m more comfortable working by myself rather than as part of a group*
3) I generally prefer to work toward group goals rather than individual goals
4) I prefer group work to individual work
5) Whenever possible, I like to work with others rather than by myself
6) Groups usually outperform individuals
7) Groups often produce much higher quality work than individuals.
8) Generally speaking, groups are highly effective
9) Assigning work to a group is a recipe for disaster.*
10) Group projects usually fail to match the quality of those done by individuals.*
11) It would be foolish to expect a group to outperform the same number of individuals working alone.*
12) I trust other people to work hard on group tasks.
13) I am always reluctant to put my fate in the hands of other group members.*
14) Most people can be trusted to do their fair share of the work.
15) Most people loaf when working on a group task.*
16) It is naive to think that other group members will live up to their promises.*

* indicates that the item was reverse scored
Appendix C

Demographic Data

1. Are you presently employed? _____ Yes; Full-time _____ Yes; Part-time _____ No
2. How many years have you been using computers? _____
3. How often do you use technology?
   _____ Once a year
   _____ Once a month
   _____ Once a week
   _____ Once a day
   _____ Multiple times a day
4. In terms of the preceding question, list the types of technology you use
5. Age _____
6. Gender _____ Male _____ Female
7. Country of birth _____ United States _____ Other
8. Ethnicity
   _____ Caucasian (white)
   _____ African American
   _____ Asian American
   _____ Hispanic
   _____ Other, please specify: _____________________