Organizational Commitment in Software Service Firms: The Impact of Organizational Demography

BY

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ORGANIZATIONAL COMMITMENT IN SOFTWARE SERVICE FIRMS:
THE IMPACT OF ORGANIZATIONAL DEMOGRAPHY

Research has established the importance of including demographic considerations in organizational analysis to provide a more comprehensive explanation of organizational phenomena. Most empirical studies have focused on a single perspective and the impact of a few demographic characteristics on outcomes of interest. This study uses multiple perspectives and incorporates a broader range of demographic characteristics and examines their impact on organizational commitment.

The study was conducted in software companies in India. Data was collected from software engineers, team/module leaders, and project leaders from seven software firms in Bangalore, Chennai and Hyderabad, India. Of a total of 600 instruments distributed, 386 completed questionnaires were received.

Firstly, the results of the study confirm that using multiple perspectives to understand demographic influences on individual behavior is beneficial. Each demographic characteristic seemed to have different effects based on the perspective used. Examining the multiple perspective simultaneously provided a more holistic understanding of the phenomena. Secondly, the use of several demographic characteristics, rather that one or two characteristics, was also supported because each characteristics seemed to have different effects independently and in the presence of other characteristics. Thirdly, there was strong support for the argument that natural characteristics have a greater impact on individual attitudes than organizationally derived. Acquired characteristics have the least effect. Lastly, the results also suggested that the

demographic profile of personnel in the software industry is different from other industries, and as a consequence their influences on individual behavior may also be different.

DEMOGRAPHY AND ORGANIZATIONS

The impact of demographic characteristics of organizational members on their work attitudes and organizational behavior has been of interest to organizational theorists for a long time (e.g., Porter & Steers, 1973). However, studies using a wide range of demographic perspectives have increased significantly since the early 1980s (Bacharach & Bamberger, 1992). Research in the area is underpinned by diverse theoretical and conceptual approaches that have focused on a wide variety of issues. While some studies have examined the impact of demographic characteristics of organizational members on their attitudes and behavior (e.g., Luthans, Baack & Taylor, 1987), others have investigated the impact of the composition of these demographic characteristics in an organization on individual attitudes and behavior, and organizational outcomes (e.g., Tsui, Egan & O'Reilly III, 1992).

In this paper, we examine the impact of organizational demography on organizational commitment in software service firms. This study is distinct from other organizational demography studies in three ways. First, we have incorporated multiple approaches in our study. The process through which demographic characteristics influence individual level attitudes and behavior has been conceptualized using multiple approaches (Bacharach & Bamberger, 1992). Most studies focus on only one approach. By examining the issues using multiple perspectives, this study provides a more complete understanding of the phenomena. Secondly, we have examined the simultaneous impact of several demographic characteristics. Organizational commitment studies have included a wide range of demographic characteristics such as age (e.g

Wagner, Pfeffer & O'Reilly III, 1984), gender (e g , Tsui. Egan & O'Reilly III, 1992), organizational tenure (e g , Zenger & Lawrence, 1989), and education (e g , Tsui & O'Reilly III, 1989) However, most studies have focused on only a few variables at a time By studying the simultaneous influence of several variables, this study was able to separate 'real' effects from 'spurious' effects The third reason that this study is unique is that it explicitly examines the differential effects of different types of demographic variables (Harrison, Price & Bell, 1998).

Demographic Characteristics

An individual's demographic characteristics can be defined as his/her observable attributes that may be used to classify him/her with a population group However, there is evidence that different demographic characteristics may have differential influences. For example, Wagner et al (1984) found that age and tenure heterogeneity had different influences on turnover, and Zenger and Lawrence (1989) found that age and tenure had varying impacts on communications within project groups. Tsui, Egan and O'Reilly III (1992) suggested that since characteristics such as age, sex, and race are more observable than tenure or education, they might have a more direct impact on outcomes like organizational commitment. Hence, we believe that it may be beneficial to separate demographic characteristics into different categories in order to better understand the processes through which they influence or are influenced by organizational processes We propose that individual demographic characteristics be classified into three categories (i) Natural, (ii) Organizationally Derived, and (iii) Acquired.

Natural characteristics. Certain demographic characteristics, such as race, gender, and age are natural attributes of individuals Since these attributes are more observable than others are, they are more likely, than less observable characteristics, to have an impact on outcomes that

are based on relationships with others These characteristics are different from those in the other two categories because they are beyond the control of individuals Other than temporary attempts to reduce the visibility of age, rare attempts to disguise racial features, and even rarer cases of changes in sex, there is very little or nothing individuals can do to change these natural attributes. Therefore, in situations in which there is a potential impact of demographic characteristics, these characteristics are likely to have a dominant influence on the attitudes and behavior of individuals In this study, age and gender are the two natural demographic characteristics that were examined

Organizationally derived characteristics. Individuals derive some demographic characteristics from their organizations. Organizational tenure, position tenure, and organizational rank are some of the characteristics that individuals have by virtue of their association with an organization. These characteristics share some features of those in the other two categories Like the acquired characteristics, but within a different set of constraints, individuals have some choice in determining some of these characteristics. However, somewhat like natural characteristics, they are more observable in the workplace. Typically, tenure or rank can be inferred from other symbolic items such as office size and location, and type of clothes (some ranks/functions may have to wear uniforms of a particular color or design). The four organizationally derived characteristics included in this study were rank, organizational tenure, departmental tenure, and position tenure.

Acquired characteristics. Individuals acquire or have the potential choice to acquire some demographic characteristics during their lifetime. Some such characteristics include, level of education, type of education, and even religion, marital status, number of dependents, and area of residence Unlike natural characteristics, these are less easily observable in the workplace and are

likely to have a different basis of influence. They are likely to be 'observed' by people who have a high level of interaction with an individual In addition to being less visible, than the natural attributes, these characteristics are different because individuals have a relatively greater choice to change them or reduce their influence. If in a situation individuals perceive that these characteristics have an impact on their attitudes and behavior and on those of others, they can, within some constraints, acquire more favorable characteristics. For example, if level of education is important then an individual can acquire the necessary level of education. It is also easier to disguise or hide these attributes in interactions in the workplace, to minimize the influence if it is so desired. Level of qualification and work experience were two acquired characteristics used in the study.

ORGANIZATIONAL DEMOGRAPHY AND ORGANIZATIONAL COMMITMENT

Bacharach and Bamberger (1992) in their review of the literature that examined the consequences of organizational demography suggested that "demography can be operationalized at either the individual or organizational level using either relational or non-relational approaches" (1992:95). Measurement at the individual level of analysis indicates a primary focus on the demographic characteristics of individuals in an organization, without any attempt to aggregate their characteristics to develop organizational level constructs or variables. On the other hand, measurement at the system level of analysis indicates a focus on the demographic characteristics of groups, units, or organizations. The variables for such an analysis are based on some form of aggregation of demographic characteristics of individuals in the system

Relational modes of measurement are based on constructs that examine the impact of similarities or differences of demographic characteristics on certain outcomes. These constructs assume the effect of demographic characteristics, whether aggregated or non-aggregated, is contingent on their relationship with the demographic characteristics of others in the system or the presence/absence of other factors in the system. Non-relational modes of measurement are based on constructs that examine the direct impact of demographic characteristics of an individual or the demographic composition of a system on an outcome of interest.

Individual Level Non-relational Demography.

The non-relational effects of demographic characteristics of individuals on their attitudes and behavior are based on the assumption that individuals who have different life experiences outside the organization have differential abilities to deal with organizational life (Bacharach & Bamberger, 1992). The demographic characteristics of individuals, such as age, education or gender are surrogate measures of their differing life experiences, and can be related to their attitudes or behavior in the organization. Within this perspective, demographic characteristics of individuals can be used to predict their attitudes and behavior without reference to the demographic characteristics of others in the unit or organization.

Age. Several studies (e.g., Rhodes, 1983, Smith & Hoy, 1992) have shown that age has a positive impact on organizational commitment. Older people are more satisfied with their work and are less likely to leave an organization. We expect that older professionals in software service firms are also likely to have greater commitment to the local client base and have a reluctance to move to another office or location to develop a new network.

Hypothesis 1. Age and organizational commitment will be positively related.

Gender. Some studies (e.g., Ayree, 1994) have reported a lower level of organizational commitment among female workers. The nature of the work in software firms encourages long hours and possible extended stays away from home which are probably less appealing to women than men. Therefore, males should report greater organizational commitment than females.

Hypothesis 2: Organizational commitment for men will be higher than for women.

Rank. Luthans, Baack, and Taylor (1987) and Smith and Hoy (1992) reported a positive relationship between organizational rank and commitment. There should be a greater level of organizational commitment for higher ranks in the organization, and less among lower ranks. We expect this relationship to hold in software firms.

Hypothesis 3: Organizational commitment will increase with rank in an organization.

Organizational, Deepartmental, and Position Tenure. Several studies (e.g., Luthans, Baack and Taylor, 1987) have reported a positive relationship between organizational tenure and organizational commitment. As one stays longer with a firm, one develops a stronger commitment to the organization. We expect that software professionals who have been with a firm for long will display a stronger commitment to the organization. Similarly, professionals who have been in their current department and position longer should also display a stronger commitment to organization.

Hypothesis 4: Organizational tenure and organizational commitment will be positively related.

Hypothesis 5: Department tenure and organizational commitment will be positively related.

Hypothesis 6: Position tenure and organizational commitment will be positively related.

Qualification. People who have trained longer for a particular job environment should be more committed to it We expect the professionals with higher qualifications should be more committed to their work, and as a consequence display a greater commitment to the organization

Hypothesis 7: Level of qualification and organizational commitment will be positively related.

Work experience. People with a greater level of work experience in an industry are more likely to be committed to their work. We expect professionals with a longer duration of work experience in the software industry to have a higher level of organizational commitment.

Hypothesis 8. Work experience and organizational commitment will be positively related.

All demographic characteristics will not have an equal impact on an individual's organizational commitment. As discussed earlier, we expect that the natural characteristics will have the maximum impact, followed by organizationally derived and acquired characteristics.

Hypothesis 9: The impact on organizational commitment will be greatest for natural characteristics, followed by organizationally derived and acquired characteristics.

Individual Level Relational Demography

Bacharach and Bamberger (1992) and Bacharach, Bamberger and Mundell (1993) offer an alternative explanation for the impact of individual demographic characteristics on attitudes and behavior. They suggest that there are socially or organizationally interpreted statuses associated with a set of demographic characteristics, which create expectations in the minds of individuals An inconsistency between the expected status and actual status associated with the position or work in an organization induces stress, which affects attitudes and behavior. In other words, demographic characteristics have an indirect impact on attitudes and behavior. There have not

been any empirical work using this perspective (Bacharach, Bamberger, and Mundell, 1993) In this paper we have examined the validity of this perspective

Age, organizational tenure, department tenure, work experience, level of qualification and rank. One would, under normal circumstances, expect older professionals to occupy higher hierarchical positions at the firm If this does not happen there is likely to be a decrease in organizational commitment. Similarly, persons with a longer organizational and departmental tenure, work experience and level of qualification would occupy higher positions. If that does not happen, it is likely to decrease organizational commitment

Hypothesis 10: Older professionals in lower ranked positions will have lower organizational commitment

Hypothesis 11: Professionals with longer organizational tenure in lower ranked positions will have lower organizational commitment

Hypothesis 12: Professionals with longer departmental tenure in lower rank positions will have lower organizational commitment

Hypothesis 13: Professionals with longer work experience in lower rank positions will have lower organizational commitment

Hypothesis 14: Professionals with higher level of qualifications in low rank positions will have lower organizational commitment

Just as in the case of individual level non-relational demography, we expect that different relational level characteristics will also have differential impact Natural characteristics would have a greater impact than organizationally derived and acquired characteristics

Hypothesis 15: The impact on organizational commitment will be greatest for natural characteristics, followed by organizationally derived and acquired characteristics

System Level Relational Demography

System level examination of demographic influence has attracted maximum attention from organizational researchers in recent times. The studies are based on the assumption that certain individual level outcomes are dependent on the proportion of people with demographic characteristics similar to their own. An individual's demographic characteristics in isolation may not be as important as their relationship to the attributes of others in the organizational unit in providing an explanation for his/her attitude and behavior. For example, the age of organizational members may influence their commitment to the firm (Porter & Steers, 1973. Rhodes, 1983), but the major influence on their commitment may be the proportion of people of similar age group. Within this approach, it is argued

> it is not one's sex or race, per se, but the proportion or composition of the organizational unit in terms of the particular salient ascriptive characteristics that affects group dynamics and the attitudes and performance of the individuals involved (Wagner, Pfeffer, O'Reilly. 1984 75)

The argument for the impact of relational organizational level demography on individual level outcomes have been based on (i) the similarity-attraction paradigm (Byrne, 1969, 1971), and (ii) self-categorization theory (Turner, 1987). Most of the studies have used the arguments of the similarity-attraction paradigm. It suggests that people who have similar demographic characteristics are more likely to be attracted to each other in work and non-work situations. Therefore, demographic homogeneity leads to greater social integration (O'Reilly III, Caldwell & Barnett, 1989) which in turn influences the attitudes and behavior of members of the organizational unit. The similarity-attraction paradigm has been used to examine turnover in top-

management groups (Wagner et al , 1984), turnover in work groups (O'Reilly III, Caldwell & Barnett. 1989), and communication in organizations (Zenger & Lawrence, 1989) Jackson et al 's (1991) study of turnover is also based on similar theoretical arguments.

We assume that there is significant interaction among members of the project group Hence, according to the similarity-attraction paradigm, individuals who are least different from the rest of the practice unit will report highest organizational commitment. Also the natural characteristics--age and gender-- should have the greatest influence, followed by organizationally derived--rank, tenure, and functional unit, and acquired--marital status, and number of dependents.

Hypothesis 16 The greater the demographic difference of a person on each characteristic in a project group, the lower will be his/her organizational commitment.

Hypothesis 17 Natural demographic differences within a project group are most important, followed by organizationally derived and acquired demographic characteristics

METHODS

Data and Measures

Data was collected from software engineers, software team/module leaders and project leaders from seven software firms in Bangalore, Chennai and Hyderabad. Items relevant to the examination of demographic influences were included in a questionnaire survey instrument that was distributed to acquire data for a larger study on organizational commitment and innovation The survey instruments were given to human resource managers who distributed them within their

organizations and returned the completed instruments to the researchers A total of 600 instruments were distributed of which 386 completed questionnaires were received

Organizational commitment. Organizational Commitment was measured using the eight-item scale of affective organizational commitment developed by Allen and Meyer (1990). The Cronbach's alpha for the items in this study was 0 85 The composite score was standardized for all further calculations.

Individual level non-relational demographic characteristics. Respondents provided their age in years. Gender was coded as a nominal variable with 1 and 2 the values for males and females respectively. Rank was coded as 1 for software engineer, 2 for team or module leader, and 3 for project leader. Position tenure, department tenure. organizational tenure and work experience was reported in months Level of qualification was coded as 1 for bachelor's degree, 2 for master's degree and 3 for further qualifications including Ph.D These scores were standardized for all further calculations The frequency distribution of responses in percentage for each demographic variable is shown in Table 1

Insert Table 1 about here

Individual level relational demographic characteristics. Difference between standardized age and rank was used as a measure of status inconsistency A large positive number indicates a slow career progression, a number close to 0 indicates little or no inconsistency, while a large negative number indicates quick career progression Similarly, the difference between organizational tenure and rank, and department tenure and rank was used as a measure of status inconstancy Like the other measure. a large positive number indicates slow career progression

and a large negative number indicates quick progression Similar difference between qualification and rank and work experience and rank were also calculated

Organizational level relational demographic characteristics. Each individual's demographic similarity with the project group was measured for all eight demographic characteristics using the Euclidean distance measure used by Wager, Pfeffer. and O'Reilly (1984), O'Reilly. Caldwell, and Barnet (1989) and several others.

$$\left[\sum_{j=1}^{n} \frac{(S_i - S_j)^2}{n} \right]^{\frac{1}{2}}$$

where S_i is the code of a demographic characteristic for individual I, and S_j is the code of the jth member of the unit or organization on the same demographic characteristic Although we did not ensure that we had responses from all members of the project group, we assumed the distribution as representative of the whole group.

Control Variables. In order to control for organization and group effects that may influence organizational commitment independent of demography, two dummy variables that referred to the organization and group of the respondents were also included

Analysis

Individual level non-relational demography (H 1 to 9). Correlation analysis between organizational commitment, and all eight demographic variables was conducted. In addition, two variables. organization and group were included to examine if some of the variance in organizational commitment can be attributed to organization or groups. A stepwise regression analysis was done to examine relative importance of the eight demographic variables and the two control variables – organization and group.

Individual level relational demography (H 10 and 15). As in the case of individual level non-relational demography, a correlation analysis was conducted to examine the relationship between the five variables. Then a stepwise regression analysis was done to examine relative strength of each variable in explaining the variance in organizational commitment

System level relational demography (H 16and 17). Once again, the analysis followed a two step process. First a correlation analysis was conducted which was followed by a stepwise regression analysis to examine the relative importance of different characteristics

Finally, a stepwise regression was conducted to examine the relative effects of each demographic argument. This stage included variables from all three types of analysis conducted in the earlier three sub-sections

RESULTS

Individual Level Non-relational Demography

As shown in Table 2 and 3, the correlation analysis of individual level non-relational demographic characteristic indicated that some of the hypotheses were supported The most significant Pearson correlation coefficients are for the relationship between organization commitment and rank ($p=0.024$) and organization tenure ($p=0.024$) followed by age ($p=0.045$) However, since the three variables themselves have significant levels of correlation ($p=0.000$) among themselves. some of positive relationships may be confounded Unlike predictions. gender, along with department tenure and level of qualification, do not have any significant correlation with organizational commitment although the coefficients suggest a relationship that is opposite from that predicted The regression analysis indicates that, after controlling for the

organization and group effects, department tenure and organizational tenure provide the most significant explanation for the variance in organizational commitment. The effect of department tenure is opposite of that predicted and the inclusion of organizational tenure in the model suppresses the effect of rank and age, which were significant in the correlation analysis.

Insert Table 2 and 3 about here

Individual Level Relational Demography.

Table 4 and 5 show the results of the correlation and stepwise regression respectively. The correlation analysis indicates that, except for the difference between organizational tenure and rank, all other individual level relational variables have a relationship with organization commitment as predicted. However, the difference between department tenure and rank is most significant (p=0 016) The regression analysis suggests that after controlling for organization and group, the difference between department tenure and rank explains the maximum variance in organizational commitment The difference between organizational tenure and rank suggests a relationship opposite from the predicted

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Insert Table 4 and 5 about here

System Level Relational Demography

The results for the correlation and stepwise regression analysis for the system level relational demography are shown in Table 6 and 7. The correlation analyses indicate that only the coefficient for the relative difference in department tenure has an effect that is significant (p=

002) and in the predicted direction. The effect of the difference in age, gender, qualification level, and rank have reasonably significant coefficients but in the opposite direction The regression analysis indicates that after controlling for organization, relative differences in department and gender have significant Beta values in the direction predicted However, relative differences in age and organizational tenure have the opposite effect from that predicted.

Insert Table 6 and 7 about here

The result of the stepwise regression with all the variables included in the model is shown in Table 8. The results indicate that after controlling for organization, the three variables that have the greatest ability to predict variance in organization commitment, are relative difference in department tenure (system level relational characteristic) and organizational tenure (individual level non-relational characteristic) in the direction predicted, relative difference in age (system level relational characteristic) opposite to direction predicted.

Insert Table 8 about here

DISCUSSION

Natural Demographic Characteristics.

Age. The results indicate that age has an impact on organizational commitment. As a non-relational characteristic it has a positive impact on organizational commitment However, since it normally has a high correlation with other variables such as department and organizational tenure its independent effect may be moderated in the presence of these variables in the model As an

individual level relational characteristic, the results indicated that age might cause status inconsistency and lead to decreased commitment However, the significance of that effect in the study was low The strongest impact of age on organization commitment was found in the system level effect on commitment However, the effect was opposite from that predicted This is probably because a little less than half the persons surveyed were below the age of 25 and about another half between 25 and 35, and only 3.4% people were older than 35 Since the people with the highest scores on relative difference in age were the older people, who as discussed above are the more committed one, there is a positive relationship rather than a negative relationship One can also speculate that given the age profile of the group surveyed, the older persons increased their commitment to the organization in order to counter the lower commitment of the younger professionals

Gender. Quite surprisingly gender, as a non-relational characteristic, did not have a significant impact on organizational commitment However, the effect was opposite of what was predicted Rather than have lower levels of commitment, women seemed to have higher levels of commitment This is probably because some of the negative pressures discussed earlier are eased by flexible time schedules prevalent in the software industry. Also, women are less likely to seek steep career growths as sought by most men in the software, and are prepared to settle down to a good comfortable job if they find one. However, the results of the system level relational demography are more difficult to interpret. The independent impact of a relative difference in gender is consistent with the argument given for age above. Since women software professionals are more committed to their work, and they are the ones who will score high to gender difference, the negative impact of being a minority is suppressed However, in the presence of differences in

age, department tenure and organizational tenure, gender difference seems to have an effect as predicted. Since gender difference is strongly correlated to difference in age, department tenure, and organization tenure (indicating that women stick on to their jobs for longer one can argue that once other effects are accounted for, women are actually less committed to the organization In other words, men of similar age, department tenure, and organizational tenure and more likely to be committed to the organization.

Organizationally Derived Demographic Characteristics.

Rank. The effect of rank, and non-relational characteristics on organizational commitment is significant and as predicted. However, since it is also highly correlated with department and organizational tenure, its effect is suppressed in their presence It is a strong indicator of status in an organization and leads to status inconsistencies (This is dealt in the other sections) Relative difference in rank in a project group has an impact on organizational commitment in a direction opposite to that predicted This can be explained using the same arguments as used to explain why relative differences in age lead to greater rather than less commitment However, it does not have an effect in presence of other variables, which have stronger explanatory power.

Position tenure. Position tenure does not have a significant impact on organizational commitment in any of the models. This is probably because the positions on a project are temporary and they do not have too much of influence on the way a person develops a self-identity

Department tenure. As a non-relational variable, department tenure has a negative impact on organizational commitment, which is the opposite of what was predicted However,

this may be explained by the peculiarity of professionals in the software industry. They do not want to settle into a particular type of job for too long for fear of becoming technologically obsolete They have a desire to move from department to department to keep learning new skills so that they retain their choice in the labor market. As a result, a long tenure in a department decreases their commitment This effect is further reinforced in the individual level and system level relational analysis In both cases, persons with longer department tenure seem to have lower organizational commitment This suggests that one should not keep software professionals in the same department for too long, and if that is unavoidable they need to be compensated for that in terms of promotions or other means.

Organizational tenure. Organizational tenure does have a somewhat significant independent impact on organizational commitment. This effect is maintained in the presence of other non-relational variables. It is the only non-relational variable that has an effect on organizational commitment in the presence of all variables in the model. Also, once the effect of department tenure on status inconsistency is controlled, the status inconsistency due to organization is the opposite of that predicted. This suggests that department level identity is more important than organizational level identity. Again, consistent with the effect of relative difference in age, relative difference in organizational tenure has a positive impact on organizational commitment This relationship also suggests that the independent impact of organizational tenure suppresses the negative impact of relational differences

Acquired Demographic Characteristics.

Level of Qualification. As a non-relational variable, level of qualification does not have any significant impact As an individual level relational variable, it leads to minor status

inconsistency and reduced organizational commitment. Its impact at the system level is also not very significant

Work Experience. Work experience does not seem to have any effect on organizational commitment in any form. Its effect in all the models is not significant

CONCLUSION

The results of the study confirm that using only a single perspective to understand the impact of demographic characteristics on organizational commitment provides an incomplete picture of the real phenomena. The influence of each characteristic varied with the perspective examined, and the simultaneous examination of all perspectives provided a better understanding of the demographic influence on organizational commitment.

It may also be concluded that several demographic variables need to be used at the same time to be able to separate spurious effects from real effects. The results show that the impact of any one demographic characteristic is influenced by the presence of other variables. Any study that uses a limited number of demographic variables is likely to arrive at conclusions that may be at variance with the real situation

The study provided substantive support for the argument that demographic characteristics may have different influences. Natural characteristics have the strongest effect on organizational commitment, followed by organizationally derived. Acquired demographic characteristics have little impact on organizational commitment. This is consistent with the argument that the more visible and more difficult to change the characteristic, the stronger will be its impact on an individual's organizational commitment

The study also revealed that the profile of employees in the software industry, particularly in India, is different from traditional industry. As a consequence, some influences of demographic characteristics are different. This leads to the conclusion that there may be limits to the generalization of result of demographic studies to totally unrelated environments.

This study has its limitations. Firstly, the interaction affects on organizational commitment was not done as already examined in some other studies. Since the purpose of this study was to focus on the simultaneous influence of three perspectives, we did not examine the interaction effects. This can be done in the future. Secondly, we did not examine the self-categorization perspective due to space limitation. This can also be done to bring insights from another perspective. Thirdly, the study results were based on a particular stratum of personnel in the software industry. This prevents generalization to other levels in the industry. Also, the unique profile of respondents in the survey, which is normal for the software industry, puts limitations on the extent to which the results can be used to draw implication for other industries.

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TABLE 1
Frequency distribution (In percent) of responses on each demographic variable

Variable		Frequency in percent				
Age (years)	age=< 25 47%	25<age=<35 49.6%	35<age=<45 2.9%	age>45 0.5%	
Gender	Male 81.8%	Female 18.2%			
Rank	Team member 55.8%	Team/module leader 20.0%	Project leader 24.2%		
Position tenure (months)	P T=< 12 35.8%	12<PT=<24 43.1%	24<PT=<36 8.4%	36<PT=<48 1.6%	>48 1.1%
Department tenure (months)	DT=<12 8.4%	12<DT=<24 58.4%	24<DT=<36 20.3%	36<DT=<48 8.4%	DT>48 4.5%
Organization tenure (months)	OT=<12 2.9%	12<OT=<24 57.5%	24<OT=<36 21.7%	36<DT=<48 10.8%	DT>48 7.1%
Work Experience (months)	WE=<12 0.3%	12<WE=<24 36.6%	24<WE=<36 16.7%	36<WE=<48 13.4%	DT>48 33.0%
Level of Education	Bachelors degree 64.1%	Master's degree 35.1%	Ph.D 0.8%		

TABLE 2
Correlation Matrix (Individual Level Non-relational Demography)

Variable	1	2	3	4	5	6	7	8	9	10
1 Org. Commitment										
2 Age	.10 (.045)									
3 Gender	.06 (.253)	-.12 (.022)								
4 Rank	.12 (.024)	.50 (.000)	-.07 (.181)							
5 Work Experience	.10 (.480)	.87 (.000)	-.05 (.376)	.52 (.000)						
6 Position Tenure	.00 (.958)	.11 (.041)	.05 (.292)	-.07 (.191)	.08 (.135)					
7. Dept. Tenure	-.04 (.480)	.27 (.000)	.09 (.082)	.25(.000)	.30 (.000)	.21 (.000)				
8 Org. Tenure	.12 (.024)	.40 (.000)	.07 (.154)	.45 (.000)	.46 (.000)	.15 (.004)	.61 (.000)			
9. Level of Qualification	-.03 (.654)	.28 (.000)	-.04 (.434)	.11 (.046)	.14 (.010)	.00 (.941)	.02 (.781)	.05 (.334)		
10 Organization	-.08 (.112)	.24 (.000)	.06 (.254)	.16 (.003)	.33 (.000)	.10 (.047)	.21 (.000)	.32 (.000)	.04 (.401)	
11. Group	.05 (.449)	-.38 (.000)	-.06 (.385)	-.33 (.000)	-.44 (.000)	.08 (.244)	-.23 (.001)	-.41 (.000)	.00 (.958)	-.70 (.000)

Table 3
Results of Stepwise Regression Analysis (Individual Level Non-relational Demography)

Dependent Variable.. Org. Commitment

Multiple R   .42596   R Square   .18144   Adjusted R Square .16118   Standard Error   .93365

Analysis of Variance

	DF	Sum of Squares	Mean Square			
Regression	5	39.03084	7.80617			
Residual	202	176.08371	87170	F =	8.95509	Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
Dep. Tenure	-.175896	.065436	-.198386	-2.688	.0078
Org. Tenure	.266560	.078066	.269677	3.415	.0008
Organization	-.387534	.068470	-.520928	-5.660	.0000
Group	-.045786	.017374	-.249170	-2.635	.0091
(Constant)	2.084971	.447568		4.658	.0000

TABLE 4
Correlation Matrix (Individial Level Relational Demography)

Variable	1	2	·3	4	5	6	7
1. Org. Commitment							
2. Age-rank diff.	-.01 (.822)						
3. Experience-rank diff.	-.02 (.769)	.87 (.000)					
4. Dep.tenure rank diff.	-.12 (.016)	.43 (.000)	.44 (.000)				
5. Org. tenure rank diff.	.00 (.985)	.43 (.000)	.48 (.000)	.71 (.000)			
6. Lev. of Qual. rank diff.	-.10 (.055)	.51 (.000)	.39 (.000)	.40 (.000)	.36 (.000)		
7. Organization	-.08 (.112)	.09 (.088)	.18 (.001)	.05 (.381)	.16 (.002)	-.08 (.147)	
8. Group	.05 (.449)	-.09 (.205)	-.16 (.022)	.05 (441)	-.09 (.189)	.22 (.001)	.05 (.449)

TABLE 5
Results of Stepwise Regression (Individual Level Relational Dempgraphy)

Dependent Variable: Organizational Commitment

| Multiple R | .39977 | R Square | .15982 | Adjusted R Square | .14342 | Standard Error | 1.07307 |

Analysis of Variance

	DF	Sum of Squares	Mean Square			
Regression	4	44.90083	11.22521			
Residual	205	236.05423	1.15148	F =	9.74847	Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
Organization	-.399272	.076318	-.475035	-5.232	.0000
Group	-.050482	.018931	-.241887	-2.667	.0083
Dept. tenure rank diff.	-.243413	.070352	-.275911	-3.460	.0007
Org. tenure rank diff.	.220433	.093962	.189016	2.346	.0199
(Constant)	6.858683	.498684		13.754	.0000

TABLE 6
Correlation Matrix (System Level Relational Demography)

Variable	1	2	3	4	5	6	7	8	9	10
1. Org. Commitment										
2. Rel. diff. in Age	.20 (.003)									
3. Rel. diff in Dept. Tenure	-.20 (.002)	.10 (.131)								
4. Rel. diff. in Gender	.16 (.021)	.82 (.000)	07 (.287)							
5. Rel. diff. in Org. Tenure	07 (.305)	.34 (.000)	.26 (.000)	17 (011)						
6. Rel. diff. in Post. Tenure	.11 (.119)	.27 (.000)	.13 (.050)	.28 (.000)	.31 (.000)					
7. Rel diff in qual. level	.17 (.016)	82 (.000)	06 (.420)	.99 (.000)	17 (.014)	.28 (.000)				
8. Rel. diff. in rank	.16 (.018)	.83 (.000)	.09 (.181)	.99 (.000)	.19 (.005)	.29 (.000)	.99 (.000)			
9. Rel diff in work exp	-.01 (.856)	27 (.000)	.17 (.012)	-.17 (.010)	.50 (.000)	.06 (.353)	-.20 (.004)	-.14 (.034)		
10. Organization	-.08 (.112)	-.04 (.522)	15 (.030)	-.27 (.000)	.40 (.000)	-.09 (.214)	-.27 (.000)	-.27 (.000)	.48 (.000)	
11. Group	.05 (.449)	-.35 9 (000)	-.23 (.001)	-.05 (.450)	-.61 (.000)	-.12 (073)	-.04 (.560)	-.07 (.293)	-.64 (.000)	-.70 (.000)

TABLE 7
Results of Stepwise Regression (System Level Relationation Demogrpahy)

Dependent Variable.. Organtional Commitment

Multiple R	.46891	R Square	21988	Adjusted R Square	.20018	Standard Error	.91420

Analysis of Variance

	DF	Sum of Squares	Mean Square			
Regression	5	46.64049	9 32810			
Residual	198	165.47900	.83575	F =	11 16132	Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
Organization	-.317980	.057432	-.417828	-5 537	.0000
Rel. diff. in Age	389059	.121720	.388292	3.196	0016
Rel. diff in Dept. tenure	-.200583	.065248	-.200874	-3 074	0024
Rel. diff in Gender	-.286661	.121595	-.289273	-2.357	0194
Rel. diff in Org. tenure	.199358	.076499	.195494	2 606	0099
(Constant)	.1.281845	251979		5 087	0000

TABLE 8
Results of Stepwise Regression all Variables

Dependent Variable: Organizational Commitment

Multiple R	.46225	R Square	.21367	Adjusted R Square	.19787	Standard Error	.91551

Analysis of Variance

	DF	Sum of Squares	Mean Square			
Regression	4	45.32440	11.33110			
Residual	199	166.79508	.83817	F =	13.51892	Signif F = .0000

Variable	B	SE B	Beta	T	Sig T
Organization	-.258309	.050791	-.339420	-5.086	.0000
Rel. diff in Age	.226599	.063296	.226152	3.580	.0004
Rel. diff in Dept. tenure	-.216583	.064851	-.216897	-3.340	.0010
Org. tenure	.226531	.067394	.226213	3.361	.0009
(Constant)	1.006300	.223196		4.509	.0000