

**Organizational and Group Antecedents of  
Work Group Innovativeness in the Service Sector**

Evaristo Nsenduluka

*Raffles College of Design & Commerce, 99 Mount Street,  
North Sydney, NSW 2060, Australia*

(Email: EvaristoNsenduluka@ raffles.edu.au)

Himanshu K. Shee

(Corresponding author)

*School of Management and Information Systems,  
Faculty of Business and Law,*

*Victoria University, P O Box 14428, Melbourne Vic 8001, Australia*

(Email: Himanshu.shee@vu.edu.au )

## Organizational and Group Antecedents of Work Group Innovativeness in the Service Sector

### ABSTRACT

*This study tests a model of work group service innovativeness that proposes that a work group's climate for innovation mediates the relationship between organizational context (e.g., organizational climate and task design) and work group context (e.g., group self-efficacy, group citizenship behavior, and market orientation) on one hand, and, work group service innovativeness on the other. All the variables, except task design, were found to affect work group service innovativeness directly and indirectly through a work group climate for innovation. The article discusses managerial implications and study limitations.*

Key words: organizational climate, task design, group self-efficacy, group citizenship behavior, market orientation, work group climate for innovation, work group service innovativeness

### INTRODUCTION

A swing of emphasis is occurring in both the academic and corporate arena from the concept of innovation to that of innovativeness because of growing recognition that innovativeness promotes a competitive advantage (Martins & Terblanche 2003; Nieto & Quevedo 2005; Tajeddin et al. 2006). As Deshpande, Farley, and Webster (1993) state, an organization must be innovative to gain a competitive advantage in order to survive and prosper. As sometimes said in business circles, organizations must innovate or evaporate! Unfortunately, in spite of innovativeness's theoretical and applied importance, understanding of the drivers of innovativeness remains wanting (Tajeddin et al. 2006). This situation is more so at the group-level of analysis (Nsenduluka & Shee 2007a,b; Nsenduluka & Shee 2009), versus the individual and organizational levels.

This state of affairs is regrettable because of the important role work groups play in the innovation process (Nijstad & DeDreu 2002). Work groups are capable of high levels of innovativeness and productivity by mixing knowledge, skills, perspectives, experience, and expertise of members with diverse knowledge backgrounds. They create ideal conditions for developing new and useful products and processes (Lipman-Blumen & Leavitt 1999) and, as Nijstad & DeDreu (2002) point out, in modern organizations, the tendency is almost inexorable to restructure work from individual-based to group-based activity. Hence, understanding the dynamics of both team effectiveness and ineffectiveness are challenging and crucial questions for organizational scientists. This study combines organizational and

work group level variables in an attempt to contribute to our understanding of work group service innovativeness. The study tests the conceptual model that organizational and work group contexts create a group climate for innovation that in turn lead to work group service innovativeness.

### **CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT**

Figure 1 is a summary of a conceptual model of work group service innovativeness. The model proposes that group climate for innovation (GCI) mediates the relationship between organizational and work group contexts on one hand and group service innovativeness on the other. In this study classification of study variables into organizational and work group contexts is not exhaustive but builds from relevant literature. Previous works such as the authoritative review of group performance by Guzzo and Shea (1992) and West and Farr's (1990) three-level study of innovation of the organization, the work group and the individual, inform the study. Guzzo and Shea (1992) proposed an input-process-output model of group performance as a plausible overarching framework to guide research on the antecedents of work group innovation. Many organizational phenomena are multilevel in nature (Kozlowski and Klein 2000).

---

INSERT FIG 1 HERE

---

#### **Organizational Context Variables**

##### *Organizational Climate*

Climate is one of the most important organizational variables affecting group innovation (Chandler, Keller & Lyon 2000; Jassawalla & Sashittal 2002; Jung, Chow & Wu 2003; Mavondo & Farrell 2003; Steensma, Jansen & Vonk 2003). Simply put, organizational climate refers to the perceptions of organizational members of their work environment, including members' tasks. Given the recognition of the importance of organizational level variables, particularly climate, in group performance (e.g., Chandler et. al. 2000; Guzzo & Shea 1992; Hackman 1992; Mavondo and Farrell 2003), in the successful implementation of hotel service quality initiatives (Davidson 2003), and specifically the role of organizational climate in determining innovation (e.g., Chandler et al. 2000; Jaw and Liu 2004; Jung et al. 2003; Patterson, West, Shacleton, Dawson, Lawthom, Maitlis, Robinson, & Wallace 2005; Schneider, Brief and Guzzo 1996), a supportive or pro-innovation organizational climate in service firms such as the hotel industry, just like supportive organizational climates in manufacturing industries, should positively impact the innovation climate at the work group

level by providing a context that determines the level of work group service innovativeness via its impact on team inputs and team processes (West 2003).

Hypothesis 1 (H<sub>1</sub>): The more favorable the organizational climate, the higher the group climate for innovation that in turn affects work group service innovativeness.

### *Task Design*

From the work design literature, job characteristics, an organizational phenomenon, influence the level of work group innovation (e.g., Axtell, Holman, Unsworth, Wall, Waterson, and Harrington 2000; Guzzo & Shea 1992). Several important characteristics of design are related to organizational effectiveness, including innovation. One of these is self-management, which is the group analogy to autonomy at the individual level. A related characteristic is decision-making participation. Self-management and participation enhance group effectiveness including the propensity for innovation by increasing members' sense of responsibility and ownership of the work (McGrath 1984; Porter, Lawler, and Hackman 1987). Other characteristics include task variety, which involves giving each person the chance to perform a number of the group's tasks; task significance, the degree to which the task has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment, that is customers (Hackman 1987).

Finally, according to Hackman (1987), work should have task identity, which is the degree to which the work group completes a whole and separate piece of work. Identity may increase motivation because it increases a group's sense of responsibility for meaningful piece of work. The presence of the fore-going characteristics in task design creates a work group climate for innovation that leads to work group service innovativeness. The rationale is that task orientation or intrinsic motivation (and therefore innovation) are evoked by autonomy or self-management, participation, task variety, significance, identity, and by completeness (whole tasks) and by learning and development opportunities (West 2003).

Hypothesis 2 (H<sub>2</sub>): Task design contributes to group climate for innovation that in turn affects work group service innovativeness.

### **Work group Context Variables**

#### *Group Self-efficacy*

Group self-efficacy, like individual self-efficacy, involves beliefs regarding capability to accomplish particular tasks. The construct shares a certain similarity with the individual motivational construct of self-efficacy (Bandura 1986; Cannon-Bowers, Salas, Tannenbaum, and Mathie 1995; Pethe 2002). Group self-efficacy promotes a work group climate for innovation that leads to service innovation. Since self-efficacy, by virtue of its motivational potential, is related to both performance and innovation (Pethe 2002), there is a high

probability that group efficacy is related to both work group performance and work group innovativeness (Agrell & Gustafson 1996; Guzzo & Shea 1992; Guzzo et al. 1993; Pethe 2002). This argument is consistent with studies which have found a relationship between self-efficacy and innovation (Keer & Verhaeghe 2005; Segaar, Bolman, Willemsene, and DeVries 2006).

Hypothesis 3 (H<sub>3</sub>): The greater the group self-efficacy, the higher the group climate for innovation that in turn affects work group service innovativeness.

#### *Market Orientation*

Narver and Slater (1999, p.21) define market orientation as “the organization culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business”. Market orientation has previously been linked to innovation (Darroch and McNaughton 2003; Lado and Maydeu-Olivaires 2001; Mavondo and Farrell 2003; Maydeu-Olivaires and Lado 2003; Verbees and Meulenberg 2004). We argue that, although most of these studies have studied market orientation at the organizational level, its impact on innovation can be extrapolated to the work group level.

Hypothesis 4 (H<sub>4</sub>): Market orientation is related to high levels of group climate for innovation that in turn affects work group service innovativeness.

#### *Group Citizenship Behavior (GCB)*

Group citizenship behaviors (GCBs) are akin to organizational citizenship behaviors (OCBs), work-related behaviors that are discretionary, not related to the formal organizational reward system, and, promote the effective functioning of the organization (Bergeron 2007; Moorman 1991). GCB is conceptualised as a distinct group-level phenomenon concerning the extent to which the work group as a whole engages in OCB. Research evidence suggests that OCB may be an important factor in employee and organizational effectiveness including innovation (Alotaibi, 2001; Carol, Carol, and Rachel 2003; Hunt 2002; Karen 2002; Koys 2001). GCB affects service innovation by promoting a work group climate for innovation.

Hypothesis 5 (H<sub>5</sub>): GCB affects group climate for innovation that in turn leads to work group service innovativeness.

#### *Group Climate for Innovation (GCI)*

Anderson and West (1998) describe GCI as shared perceptions referring to the “proximal work group”. This work group is considered as the “permanent or semi-permanent team to which individuals are assigned, whom they identify with, and whom they interact with regularly in order to perform work-related tasks” (Anderson and West 1998, p.236). The

four-factor theory of innovation (West 1990) contends that group innovations often result from group activities which are characterised by (1) focusing on clear and realistic goals in which the group members are committed (called vision), (2) interaction between group members in a participative and non-threatening climate (called participative safety), (3) commitment to high standards of performance and, thus, preparedness for basic questions and appraisal of weaknesses (called task orientation), and, (4) enacted support for innovation attempts, for example, cooperation to develop and apply new ideas (called support for innovation). Given the link between GCI and innovation (Agrell and Gustafson 1994; Gosling, Westbrooke, & Braithwaite 2003), a work group high on innovation climate is also high on service innovation. Based on previous findings cited above (e.g., Anderson & King 1993; Gosling et. al. 2003; King & Anderson 1995; West 1990; West & Farr 1990), work groups in the service industry, with a high climate for innovation, that is, those high on vision, participative safety, task orientation, and support for innovation, will be relatively higher on work group innovativeness.

Hypothesis 6 (H<sub>6</sub>): The higher the group climate for innovation, the higher the level of work group service innovativeness.

## RESEARCH METHOD

### Sample and Data Collection

Four hotels in Melbourne, from 4 and 5 star categories, responded favourably and participated in the 64-item questionnaire survey with a 7-point likert scale (1 = strongly disagree to 7 = strongly agree). These four hotels yielded survey data from work groups with a total of 303 correct responses (46.2% males and 53.8% females) out of a sample of 1170 respondents, an average organizational response rate of approximately 27 percent. The work group, defined along functional hotel departments (Reception/Front office; Housekeeping; Food & Beverage/ Banquets/ Functions; Kitchen; Maintenance; Human resources/ Administration; and Concierge), formed the unit of analysis. This approach is consistent with past group research designs (Campion & Medsker 1993.; Dexter & Turk 2002; Pethe 2002). More important, the approach meets McGrath's (1986) recommendations (e.g., strong rationale for aggregation, reference of items to the levels of interest) for score aggregation. The questionnaire, consisting of existing well-established instruments, was administered under the same conditions, at each participating hotel, over a period of two months. Administration of the survey was in the 3rd quarter of 2004.

### Measures

Scales were adapted from existing measures. The predictor variables included organizational climate which was tapped using three sub-scales each consisting of three items

relevant to innovation and adapted from Francis's (2001) "Innovation Capability Audit". The scale has relatively high reliability of .82. The three sub-scales were: commitment to innovation (sample item: "Top management take innovation seriously."), initiatives welcomed (sample item: "Personal initiatives are supported, providing people work within guidelines."), and innovation empowerment (sample item: "Employees are empowered"). Task design was measured using a 15-item scale adapted from Champion and Medsker's (1993) scale of Work Group characteristics and effectiveness. The scale has acceptably high reliability (Cronbach's alpha = .80) and has the added advantage of limited length. Sample items included: "Most work-related decisions are made by members of my work group rather than by my manager" (Self management); "Most work-related decisions are made by members of my work group rather than by my manager" (Participation); "Almost everyone in my work group gets a chance to do the more interesting tasks" (Task significance); and, "My work group is responsible for a unique area or segment of the business" (Task identity).

Campion and Medsker's (1993) potency sub-scale in their Work Group characteristics and effectiveness scale was also used to capture group self-efficacy (GSE). A sample item is: "My group has a lot of team spirit". The 13-item Narver and Slater (1999) market orientation scale (Cronbach alpha =.89) was used to measure market orientation. A sample item is, "Understanding customer needs is very important in my hotel." GCB was captured using an adaptation of Koy's (2001) "Organizational Citizenship" scale. One item for each dimension of GCB was included: conscientiousness ("the work group you supervise works to exceed guest's expectations"); altruism ("the work group members you supervise can count on co-workers when they need help"); civic virtue ("the work group you supervise feels responsible for its success"); sportsmanship ("the work group you supervise has a 'can do' attitude"); and courtesy ("the work group you supervise treats its members with respect"). The internal consistency of the GCB scale is .78.

The current standard measure of group or team climate for innovation is the Team Climate Inventory (TCI) (Anderson & West 1994). For reasons of parsimony, group climate for innovation was measured in this study using Kivimaki and Elovainio (1999) short 14-item version of the TCI (Cronbach's alpha = .81), which is a short version of the original. Sample items include: "My work group's objectives are worthwhile to the hotel" (Vision); "In this hotel, we have a 'we are together' attitude (Participative Safety); "In my work group we take the time needed to develop new ideas (Support for innovation); and "The work group critically appraises potential weaknesses in what it is doing in order to achieve the best possible outcome" (Task Orientation). The task orientation sub scale was dropped from this study as

preliminary factor analysis results showed all its three elements cross-loading on the other sub scales.

The dependent variable, 'work group service innovativeness' was measured using Kivimaki's (1996) five-item work unit innovation scale (Cronbach alpha = .78). The scale assesses how encouraging the respondent's work group is in doing things in a new and innovative way, whether improvements in how things are done are regularly made, and whether information concerning improvements is spread to everybody in the respondent's work group and to other work groups. A sample item is, "Everybody in our work group is encouraged to think of ways of doing things better."

### **Measurement Rationalisation**

As stated above, seven workgroups, defined along functional lines provided the sample for this study. Ideally analysis should be at the team-level but focus of this study was not on comparing service innovativeness among groups. The focus was on studying the innovativeness of all groups. Therefore, aggregation was deemed appropriate for this study

McGrath's (1986) recommendation for studying work groups guided measurement in this study. The group was the level of analysis. Data were collected from individuals and aggregated to the group level. Although aggregation is a controversial issue, several recommendations have emerged (e.g. Roberts et al. 1978; Van de Ven & Ferry 1980; James 1982; Campion & McClelland 1991; Algera 1983; Campion 1988; Campion et al. 1996).

One recommendation is that there should be a strong rationale or 'composition' theory to justify aggregation (Roberts et al. 1978, p.84). As in aggregation in climate research (James 1982, p. 219), this study views the constructs as 'macro perceptions' or shared views of the group. Another rationale (Van de Ven & Ferry 1980) is that the meaning of the characteristic does not change from the individual to the group perspective. For task design, a further rationale is that in the work design literature, it is not unusual to conceptualize and measure design at the incumbent level when examining individual positions, and then aggregate to the job level when examining positions held by multiple people (e.g. Algera 1983; Campion 1988; Campion & McClelland 1991), for example, house keeping or front office reception, in the hotel industry.

Another recommendation is that measures refer to the level of interest (Van de Ven & Ferry 1980). In this study, virtually all items refer to the group.



## DATA ANALYSIS AND RESULTS

### Measurement analysis

Although the study measures were adapted from well established scales, this study includes assessing their psychometric properties. Scale validation was achieved through the evaluation of scale dimensionality and reliability. Unidimensionality of the scales was tested by performing principal components analyses. Results indicated that unidimensionality, which occurs when a set of items forming a scale all measure just one thing in common, was achieved for each construct. Further, confirmatory factor analysis (CFA) was performed using AMOS 5 software to provide a more thorough validation. Various goodness-of-fit (GOF) criteria were used, in addition to the chi-square test to assess the overall model fit. The GOFs involved were the comparative fit index (CFI), the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the Tucker-Lewis index (TLI) and the root mean square error of approximation (RMSEA). In general, model fit is considered to be adequate if CFI, GFI, AGFI, and TLI are larger than 0.90 and RMSEA is smaller than 0.08 (Schumacker and Lomax 1996). T-test, magnitudes and standard errors of factor loadings, and modification indices were used to check the significance of a particular path. As Figure 2 indicates, all goodness-of-fit indices for each scale were good or satisfactory.

Cronbach alphas were computed to assess the scales reliabilities. The alphas vary between 0.78 to 0.89 (see Table 1).

### Hypothesis testing

The work group service innovativeness model was tested using the AMOS 5 structural equation modeling software. A correlation matrix is provided in Table 1 and results are presented in Table 2 and Figure 2, with the latter being the best-fit model, adequately representing the sample data, based on sound statistical and theoretical rationale (Lee and Hershberger 1990).

Hypothesis 1 ( $H_1$ ): The more favorable the organizational climate, the higher the group climate for innovation that in turn affects work group service innovativeness. As Figure 2 and Table 2 indicate, this hypothesis is not supported ( $\beta = 0.09, p > .05$ ). It appears that organizational climate has a direct significant effect on work group service innovativeness ( $\beta = 0.19, p < .001$ ). This seems to make sense as organizational climate has a strong influence on various types of individual and group behaviors within organizations (e.g., Abbey & Dickson 1983; Lawler, Hall, & Oldham 1974; Moos 1987; Pritchard & Karasick 1973). The result is also consistent with previous studies demonstrating a strong influence of organizational climate on innovative behavior (Arvidson, Joansson, and Akselsson, 2006; Patterson et al., 2005), and, more generally, on individual and group behavior within

organizations (e.g., Abbey & Dickson 1983; Lawler et al.1974; Moos 1987; Pritchard & Karasick 1973; Wei & Morgan 2004) and those suggesting that organizational climate drives innovation (Chandler et al., 2000; Jassawalla & Sashittal, 2002; Jung et al., 2003; Kanter, 1983; Mavondo & Farrell 2003; Schneider et al. 1996; Steensma et al. 2003)

Hypothesis 2(H<sub>2</sub>): Task design contributes to group climate for innovation that in turn affects work group service Innovation that in turn affects work group service innovativeness. The results (Figure 2 and Table 2) support this hypothesis ( $\beta = 0.19, p < .05$ ). They are consistent with previous findings (e.g., Lantz & Brav 2007) and agree with those found at the individual and organizational levels of analysis (e.g, Axtell et al., 2000; Dorenbosch, Van Engen, and Versgen, 2005; Tan and Peng 1997; West & Farr 1990). However, task design has no direct impact on work group service innovativeness.

Hypothesis 3(H<sub>3</sub>): The greater the group self-efficacy, the higher the group climate for innovation that in turn affects work group service innovativeness. The findings (Figure 2 and Table 2) confirm the hypothesis ( $\beta = 0.34, p < .001$ ). According to the model, the path from group self-efficacy (GSE) to work group service innovativeness was also significant ( $\beta = 0.3, p < .001$ ). These findings are consistent with previous results (e.g., Agrell & Gustafson 1996; Guzzo & Shea 1992; Guzzo et al. 1993; Markman, Balkin, & Baron 2002; Pethe 2002). Since group efficacy signals what a group believes it can do, the level of group self-efficacy is often related to how much effort the group expends, and it has been shown to be a determinant of group effectiveness (Campion, Medsker & Higgs 1993). It appears that a work group's belief in its ability to perform effectively actually translates into good work outcomes.

Hypothesis 4(H<sub>4</sub>): Market orientation relates positively to high levels of group climate for innovation that in turn affects work group service innovativeness. Results (Figure 2 and Table 2) support the hypothesis ( $\beta = 0.29, p < .001$ ). However, results also show that market orientation affects work group service innovativeness directly ( $\beta = 0.11, p < .05$ ). These results are generally consistent with previous findings (e.g., Atuahene-Gima 1995; Gatignon and Xuereb 1997; Han, Kim and Srivastava 1998; Hurley and Hult 1998; Verbees and Meulenberg 2004 ).

Hypothesis 5 (H<sub>5</sub>): GCB affects group climate for innovation that in turn leads to work group service innovativeness. The findings (Figure 2 and Table 2) confirm the hypothesis ( $\beta = 0.24, p < .001$ ). However, results also show that group citizenship behavior has greater direct effect on work group service innovativeness ( $\beta = 0.28, p < .001$ ). These results are generally supportive of previous findings (e.g., Atuahene-Gima 1995; Gatignon and Xuereb 1997; Han et al. 1998; Hurley and Hult 1998; Verbees and Meulenberg 2004).

Hypothesis 6(H<sub>6</sub>): The higher the group climate for innovation, the higher the level of work group service innovativeness. As Figure 2 and Table 2 indicate, results confirm the hypothesis ( $\beta = 0.11, p < .05$ ). These findings are in line with previous results that have found group climate for innovation to be a good predictor of work group innovativeness (e.g., Anderson & King 1993; Gil, Rico, Alcover & Barrasa 2005; King & Anderson 1995; Pirola-Merlo & Mann 2004; West & Farr 1990; West 1990).

---

[INSERT TABLE 1, FIGURE 2, TABLE 2 HERE]

---

## DISCUSSION AND IMPLICATIONS

The present findings contribute to theory by providing a link between organizational and work group contexts on the one hand and work group service innovativeness on the other. Results showed that the work groups' organizational context is an important determinant of the work groups' service innovativeness.

Most researchers concentrate on the issues of technology and structure while ignoring the role and contribution of organizational climate to organizational effectiveness (Ali & Ali 2005). Organizational climate, as perceived by employees is one of the most important drivers not only of both performance and employee affective reactions but also of creativity and innovation (Ashkanasy, Wilderom & Peterson 2000; Woodman, Sawyer and Griffin 1993). Organizational climate is especially important in the service industry because research has demonstrated a positive relationship between service climate and customer perceptions of service quality (Schneider 1990; Schneider, White & Paul 1998). These perceptions attribute to service innovation. Group climate factors such as vision, support for innovation, and participative safety have influence on levels of innovative behavior. A positive climate stimulates the innovation process and contributes to testing and in some cases implementation of ideas. Therefore, the role of organizational climate in fostering innovation warrants more attention, especially at the most neglected level of analysis, the work group level.

Task design is a significant contributor to employees' motivation to innovate (Axtell et al. 2000; Dorenbosch et al. 2005; Unsworth & Parker 2003; West & Farr 1990) with the Job characteristics Model (Hackman & Oldham, 1980) still being one of the leading theoretical principles (Parker & Wall 1997; Parker, Wall & Cordery 2001) in explaining these dynamics.

At the work group level, the results confirm the important role played by group self-efficacy, market orientation, and GCB in promoting work group service innovativeness. As in

other work settings, group self-efficacy in the service industry, such as the hotel industry, acts as a motivational vehicle for work groups to come up with innovative ideas of customer service. According to Bandura (1986), efficacy judgements serve to mediate the relationship between the contextual factors of adequate levels of skills/knowledge, incentives, opportunity to perform, task clarity, and specific performance behaviors.

Market orientation drives both a climate for innovation and service innovativeness itself. It may be that just as it happens at the organizational level (Pelham 2000), market-oriented work groups have superior market information gathering and processing abilities that permit them to learn about marketplace changes quickly and accurately. This provides an incentive for the creation of a group atmosphere for innovation. This in turn equips them with a superior knowledge of their competition and customers' needs, which facilitates the development of innovative service behaviors. As Pulendran, Speed, and Widing (2000) put it, being market-oriented creates an environment for listening, understanding and responding to the market and the competition.

The finding of a relationship between GCB and service innovativeness is in line with previous studies (e.g., Karamayya 1990; Koys 2001; Podsakoff & MacKenzie 1994; Podsakoff, Ahearne, & MacKenzie. 1997; Walz and Niehoff 1996). GCBs, in plain language, are employee efforts that go "above and beyond the call of duty" (Bolino & Turnley 2003 p. 60). They include such behaviors as taking on additional assignments, voluntarily helping other people at work, following laid down rules even when others are not watching, skipping one's break to complete an urgent task, maintaining a positive attitude and tolerating inconveniences, and, promoting and protecting one's employer.

The correlation between the group climate for innovation and work group service innovativeness is positive and significant ( $r = .74$ ). The result is consistent with previous findings that have found team climate for innovation to be the proximal predictor of work group innovativeness (Anderson & King 1993; King & Anderson 2002; West & Farr 1990). Work groups are more likely to be innovative if their work group vision has clarity, attainability, sharedness, and is visionary in nature. In this study, clarity refers to the extent to which the vision is readily understandable to members of a hotel work group.

Different factors influence work place innovation can be influenced by different factors, some of which relate to the organizational context, while others are related to the work group context. Management should convey to all work groups in the organization that innovation is valued and support is available for workable customer service improvement ideas. They should encourage work groups by focusing on creativity and innovation as important performance outcomes, rather than only on productivity. Overall, by providing an innovation supportive organizational climate; jobs high on skill variety, task identity, significance, self-management and feedback; cultivating group self efficacy, market

orientation and GCBs, management will be promoting a climate for innovation that eventually should promote both a climate for innovation and innovation itself.

### **STUDY LIMITATIONS AND FUTURE DIRECTIONS**

Like most research of this type, this investigation has limitations. First, the study does not pretend to analyse all possible variables that might be considered to be antecedents or correlates of work group service innovativeness, at both the organizational and work group levels of analysis. The model's explanatory power is constrained by the number of variables in the study. Explanatory power may increase by systematically exploring interaction effects rather than simply focusing on main effects (Nijstad & DeDreu 2002).

A second limitation of the present research is that it suffers from the common deficiency of cross-sectional designs: inability to draw causal inferences. Longitudinal studies of the work group antecedents of service innovation are called for.

Another potential limitation might stem from using survey items designed for the individual level of analysis at the work group level. Although there is rationale for this practice (McGrath 1986) the question is, does a construct's intended meaning stay unchanged once you move it from the individual to the group level of analysis? Klein et al. (2001) have argued that survey wording has considerable power in promoting within-group agreement and between-group differences. Socially undesirable items may foster big within-group agreement simply because most respondents disagree with the items. The grouping of hotel workers could have been better-handled to allow use of more robust statistical tests such as WABA (Within-and Between-Entity Analysis) analyses. In this study, given the unequal and limited groupings along department lines, it would not be justifiable to use such analyses. Future research might use a group level of measurement (e.g., have groups give consensus responses). Future research needs to address this issue.

Another area of concern was the limitation of the sample in this study to one kind of service industry, the 3-5 star hotel industry, thus limiting generalisability. Clearly it is important to check if the model can hold in other service industry contexts. Also consideration might be given to defining the work group along other dimensions such as by labour market status linked with workers positions in the organisations (primary and secondary- core and peripheral) and differentiated by tenure (fulltime, part-time and casual and temporary).

A further limitation was that the sample for the study was drawn from one industry—the hotel industry. To increase the generalizability of the findings within the customer service industry, further studies should expand the sample to include other service industries such as insurance and banking.

Finally, the model in the study provides an integrated conceptual framework for studying work group service innovativeness. The study is an endeavour to draw the knowledge base of work group innovation together and to provide an initial test of a comprehensive model. Other studies are necessary to refine and test alternative models in this growing area of work group innovation.

## REFERENCES

- Abbey A., Dickson J.W. R&D (1983) Work Climate and Innovation in Semi-Conductors. *Academy of Management Journal*, 26: 362-368
- Agrell A, Gustafson R. (1996) Innovation and creativity in work groups in West M.A (Ed.). *Handbook of Work Group Psychology*, England: Wiley, 317-344
- Agrell A, Gustafson R. (1994) The team climate inventory (TCI) and group innovation: A psychometric test on a Swedish sample of work groups. *Journal of Occupational and Organizational Psychology*, 67:143-151.
- Ali I, Ali JH (2005) The effects of the interaction of technology, structure, and organizational climate on job satisfaction. *Sunway Academic Journal*, 2:23-32.
- Alotaibi GA. (2001) Antecedents of organizational citizenship behavior: A study of public personnel in Kuwait. *Public Personnel Management*, Fall
- Anderson NR, King N. (1993) Innovation in organizations, in Cooper CL and Robertson IT (Eds.). *International Review of Industrial and Organizational Psychology*, Chichester: Wiley, 8:1-34.
- Anderson N, West MA (1998). Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of Organizational Behavior*, 19:235–258.
- Anderson NR, West MA. (1994) *The Team climate inventory: Manual and user's guide*, Windsor
- Arvidsson M, Johansson C.R, Ek A, Akselsson, R. (2006) Organizational climate in air traffic control: Innovative preparedness for implementation of new technology and organizational development in a rule governed organization. *Applied Ergonomics*, 37(2):119-129.
- Ashkanasy NM, Wilderom PM, Peterson MF. (Eds.), (2000) *Handbook of Organizational Culture & Climate*. New York: Sage Publications
- Atuahene-Gima K. (1995) An exploratory analysis of the impact of market-orientation on new product performance. *Journal of Product Innovation Management*, 12: 275-293
- Axtell CM, Holman DJ, Unsworth KL, Wall TD, Waterson PE, Harrington E. (2000) Shopfloor Innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 73:265-286.
- Bandura A. (1986) *Social Foundations of Thought and Actions*. Englewood Cliffs, NJ: Prentice-Hall.
- Bergeron, D.M. (2007) The potential paradox of organizational citizenship behavior: Good citizens at what cost? *Academy of Management Review*, 32(2): 078-1095.
- Bolino MC, Turnley WH. (2003) Going the Extra Mile: Cultivating and managing employee citizenship behavior, *Academy of Management Executive*, 17(3): 60-71.
- Campion MA, Medsker GJ, Higgs AC. (1993) Relations between work group characteristics and effectiveness: implications for designing effective work groups. *Personnel Psychology*, 46: 823-850.
- Campion MA, Medsker GJ. (1993) Relations between work group characteristics and effectiveness: Implications for designing effective work groups, *Personnel Psychology*, 46(4):823-851.
- Cannon-Bowers JA, Salas E, Tannenbaum SI, Mathie JE. (1995) Toward theoretically based principles of training effectiveness: A model and initial empirical investigation, *Military Psychology*, 7 (3):141-164.

- Carol BC, Carol DW and Rachel SK.(2003) Organizational citizenship behavior and service quality. *Journal of Services Marketing*, 17(4): 357-379
- Carson KD, Carson PP, Lanford HR, Roe CW (1997). The effects of organization-based self-esteem on workplace outcomes: An examination of emergency medical technicians. *Public Personnel Management*, 26(1): 139-155
- Chandler GD, Keller C, Lyon DW. (2000) Unravelling the Antecedents and consequences of an innovation-supportive organizational culture, ET & P: Baylor University
- Covin TJ, Kolenko TA, Sightler KW, Tudor RK.(1992) Correlates of organization-based self-esteem. Paper presented at the Annual meeting of the southern Management Association, New Orleans, LA
- Darroch J, McNaughton R. (2003) Beyond market orientation, Knowledge management and the innovativeness of New Zealand firms, *European Journal of Marketing*, 37(3/4): 572-593.
- Davidson MCG. (2003) Does organizational climate add to service quality in hotels? *International Journal of Contemporary Hospitality Management*, 15 (4):.206-213
- Deshpande R, Farley JU, Webster F. (1993) Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrant Analysis. *Journal of Marketing*, 57(1): 23-37
- Dexter R, Turk R. (2002) Research. *Journal of School improvement*, 3,:2.
- Dorenbosch L, Van Engen LM, Versgen M.(2005) On-the- Innovation: Impact of design and human resource management through production ownership. *On-the Innovation*, 14(2):129-141.
- Francis A. (2001) Innovation Capability Audit, PhD Dissertation. The University of Brighton, UK
- Gatginon H, Xuereb J.(1997) Strategic orientation of the firm and new product performance. *Journal of Marketing Research*, 34(1):77-90
- Gil F, Rico R, Alcover CM, Barrasa A. (2005) Change-oriented leadership, satisfaction and performance in work groups: Effects of team climate and group potency. *Journal of Managerial Psychology*, 20 (3/4): 312-328.
- Gosling AS, Westbrook JI, Braithwaite J.(2003) Clinical team functioning and IT innovation: A study of the diffusion of a point-of-care online evidence system. *Journal of the American Medical Information System*, 10(3): 244-251
- Guzzo RA, Dickson MD.(1996) Teams in organizations: recent research on performance and effectiveness. *Annual Review of Psychologist*, 46:307-338.
- Guzzo RA, Yost PR, Campbell RJ, Shea GP.(1993) Potency in groups: articulating a construct. *British Journal of Social Psychology*, 32: 87-106.
- Guzzo RA, Shea GP. Group performance and intergroup relations in organizations, in Dunnette MD and Hough LM (Eds.)(1992) *Handbook of Industrial and Organizational Psychology*. CA:Consulting Psychologists Press,3:269-313
- Hackman JR. (1987) The design of work teams, in Lorsch JW (Ed.) *Hanbook Of Organizational Behavior*. Englewood Cliffs:Prentice Hall,315-342
- Hackman JR, Oldham GR. (1980) *Work Redesign*. Reading, MA:Addison-Wesley
- Hackman JR.(1992) Group influences on individuals in organizations, in Dunnette MD & Hoegl LM, Praveen P and Gemuenden HG (2003) When teamwork really matters: Task innovativeness as a moderator of the teamwork-performance relationship in software development projects, *Journal of Engineering & Technology Management*, 20(4):218-303.
- Han JK, Kim N, Srivastava JK.(1998) Market orientation and Organizational Performance: Is Innovation a Missing Link? *Journal of Marketing*, 62(4): 30-45.
- Hunt ST.(2002) On the virtues of staying “inside of the box”: Does organizational citizenship behavior detract from performance in Taylorists? *International Journal of Selection and Assessment*, 10 (1-2):152-159.
- Hurley RF, Hult TM.(1998) Innovation, market orientation and organizational learning: An integration and empirical examination. *Journal of Marketing*, 62(3):42-54.
- Jung D, Chow C, Wu A. (2003) The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *Leadership Quarterly*, 14(4/5): 525-545.
- Jassawalla AR, Sashittal HC. (2002) Cultures that support product-innovation processes. *Academy of Management Executive*, 16(3): 42-54.
- Jaw BS, Liu W.(2004) Promoting organizational learning and self-renewal in Taiwanese companies: The role of HRM, *Human Resource Management*, 42(3):.223-242.
- Kanter RM.(1983) *The Change Masters: Corporate Enterepreneurs at Work*. London: Allen and Unwin.
- Karamayya R.(1990) Contextual predictors of organizational citizenship behavior. *Academy of Management best paper proceedings* LR Jauch and JL wall (eds), 221-225.

- Karen HM.(2002) Organizational Citizenship in Social Service Agencies, *Administration in Social Work*, 26(2):1-16.
- Keer HV, Verhaeghe JP.(2005) Effects of Explicit Reading Strategies Instruction and Peer Tutoring on Second and Fifth Graders' Reading Comprehension and Self-Efficacy Perceptions. *The Journal of Experimental Education*, 73(4):291-329.
- King N, Anderson N.R. (1995) *Innovation and Change in Organizations*, London: Routledge
- King N, Anderson NR. (2002) *Managing innovation and change: A critical guide for organizations*. London: Thompson
- Kivimäki M. (1996) Confidential conversations between supervisor and employees as a means for improving leadership: A quasi-experimental study in hospital wards. *Journal of Nursing Management*, 4:325-335.
- Kivimäki M, Elovainio M. A.(1999) short version of the Team Climate Inventory: Development and psychometric properties. *Journal of Occupational & Organizational Psychology*, 72(2):241-246
- Kozlowski SWJ, Klein KS.(2000) A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes, in KJ Klein and SWJ Kozlowski (eds) *Multilevel theory, research and methods in organizations: foundations, extensions, and new direction*. San Francisco, CA: Jossey Bass, 3-90
- Koys DJ. (2001) The effects of employee satisfaction, organizational citizenship behavior and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54(1):101-114.
- Lado N, Maydeu-Olivares A.(2001) Exploring the link between market orientation and innovation in the European and US insurance markets, *International Marketing Review*,18: 130-144.
- Lantz A, Brav A. (2007) Job design for learning in workgroups. *Journal of Workplace Learning*, 19(5): 269-285
- Lawler EE, Hall DT, Oldham GR. (1974) Organizational climate: Relationship to Organizational Structure, Process, and Performance. *Organizational Behavior and Human Performance*,11 (1):139-155
- Lee S, Hershberger S.(1990) A simple rule for generating equivalent models in covariance structure modeling. *Multivariate Behavioral Research*, 25 (3): 313-334
- Lipman-Blumen J, Leavitt HJ.(1999) *Hot groups: Seeding them, feeding them and using them to ignite your organization*. New York: Oxford University Press
- Markman GD, BalkinDB, Baron RA.(2002) Inventors and new venture formation: the effects of general Self-efficacy and regretful thinking. *Entrepreneurship Theory and Practice*, 27(2):149-165.
- Martins EC, Terblanche F.(2003) Building Organizational Culture that stimulates Creativity and Innovation. *European Journal of Innovation Management*, 6: 64-74
- Mavondo FT, Farrell M.(2003) Cultural orientation: its relationship with market orientation, innovation and organizational performance. *Decision Science*, 241-249.
- Maydeu-Olivares A, Lado N. (2003) Market orientation and business economic performance: A mediated model. *International Journal of Service Industry Management*,14(3): 284-309.
- McGrath JE. (1984)*Groups: Interaction and Performance*. NJ: Prentice-Hall Englewood Cliffs
- McGrath JE.(1986) Studying Groups at Work: Ten Critical Needs, in Goodman PS (Ed.) *Designing Effective Work Groups*. San Francisco:Jossey-Bass, 362-391
- Moos RH.(1987) *The Social Climate Scales: A User's Guide*. Palo Alto, CA: Consulting Psychologists Press
- Moorman RH. (1991) Relationship between organizational justice and organizational citizenship behaviors: do fairness perceptions influence employee citizenship? *Journal of Applied Psychology*, 76: 845-855.
- Narver J, Slater SF.(1999) The effect of a market orientation on business profitability, in *developing a market orientation* (Ed.) Deshpande. Thousand Oaks, CA: Sage Publications,45-77
- Neal A, Carsten KWD, Bernard AN. (2004)*The routinization of innovation research: A constructively critical review of the state-of-the-science*. *Journal of Organizational Behavior*, 25(2):147-173.
- Nieto M, Quevedo P.(2005) Absorptive Capacity, Technological Opportunity, Knowledge Spillovers, and Innovative Effort. *Technovation*, 25: 1141-1157.
- Nijstad BA, De Dreu CKW.(2002) Creativity and Group Innovation. *International Association for Applied Psychology*, 400-406.
- Nsenduluka E, Shee HK. (2009)*Organisational and group antecedents of work group service innovativeness*, *Journal of Management and Organisation*, (Accepted)



- Nsenduluka E, Shee HK.(2007a) Organizational and Group Antecedents of Work Group Service Innovation: A study of the Australian Hotel Industry. Published in the proceedings of ANZAM 21st Annual Conference, Sydney, hosted by the University of Western Sydney, 4-7 December
- Nsenduluka E, Shee HK. (2007b) Organizational and Group Antecedents of Work Group Service Innovation: A Study of The Australian Hotel Industry. *Working Paper No 13*, School of Management, Victoria University, Australia
- Patterson M, West MA, Shackleton VJ, Dawson JF, Lawthom R, Maitlis S, Robinson DL, Wallace AM. (2005) Validating the Organizational climate measure: links to managerial practices, productivity and innovation. *Journal of Organizational Behavior*, 26, 379-408
- Parker SK, Wall TD, Cordery JL.(2001) Future work design research and practice: towards an elaborated model of work design. *Journal of Occupational and Organizational Psychology*, 74:413-440
- Parker SK, Wall TD. (1997) *Job and work design: organising work to promote well-being and effectiveness*. London:Sage Publications
- Pelham AM. (2000) Mediating influence on the relationship between Market orientation and profitability in small industrial firm. *Journal of Marketing Theory and Practice*, 5(3): 55-76.
- Pethe S.(2002) Collective Efficacy: Development of a measure. *Decision*, 29(1):25-38.
- Pirola-Merlo A, Mann.L. (2004) The relationship between individual creativity and team creativity: aggregating across people and time. *Journal of Organizational Behavior*, 25: 235-258.
- Podsakoff PM, Ahearne M, MacKenzie SB.(1997) Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology*, 82(2):262-270.
- Podsakoff PM, MacKenzie SB.(1994) Organizational citizenship behaviors and sales unit effectiveness. *Journal of Marketing Research*, 31:351-363.
- Porter LW, Lawler EE, Hackman JR. (1987) Ways groups influence individual work effectiveness, in Steers RM, Porter LW (Eds) *Motivation and Work Behavior*, 4th ed. NY: McGraw-Hill, 271-9.
- Pritchard RD, Karasick BW.(1973) The Effects of Organizational climate on Managerial Job Performance. *Organizational Behavior and Human Performance*,9(1): 126-146.
- Pulendran S, Speed R, Widing RE.(2000) The Antecedents and Consequences of Market Orientation. *Australian Journal of Management*, 25(2): 119-145
- Schneider B (Ed.) (1990) *Organizational Climate and Culture*. San Francisco:Jossey-Bass
- Schneider B, Brief AP,Guzzo RA. (1996)Creating a climate and culture for sustainable organizational change. *Organizational Dynamics*, 24(4): 7-19.
- Schneider B, White SS, Paul MC.(1998) Linking service climate and customer perceptions of service quality: Test of a causal model. *Journal of Applied Psychology*, 83:150-163.
- Schumacker RE, Lomax RG.(1996) *A beginner's guide to structural equation modellin*. New Jersey: Lawrence Erlbaum Associates
- Segaar D, Bolman C, Willemsenc MC, DeVries.(2006) Antecedents of adoption of cognitive behavioral interventions in a hospital setting: Example of a minimal-contact smoking cessation intervention for cardiology wards. *Patient Education and Counselling*, 61(2):262-271
- Steensma H, Jansen S, Vonk C. (2003)Organizational culture and the use of influence tactics by managers. *Journal of Collective Negotiations in the Public Sector*, 30(1).
- Tajeddini K, Trueman M, Larsen G. (2006)Examining the Effect of Market orientation On Innovativeness. *Journal of Marketing Management*, 22:529-551
- Tan GY, Peng KY.(1997) Antecedents of organization-based self-esteem: an empirical study in Singapore. *International Journal of Management*,14(3): 375-386.
- Unsworth KL, Parker SK.(2003) Proactivity and innovation: promoting a new workforce for the new workplace, in Holman D, Wall TD, Clegg CW, Sparrow P and Howard A (Eds.) *The New Workplace: A Guide to the Human Impact of Modern Work Practices*, Chichester:Wiley,175-196.
- Verbees JHM, Meulenberg TG.(2004) Market orientation, innovativeness, product innovation, and performance in small firms. *Journal of Small Business Management*, 42 (2):134-154.
- Walz SM, Niehoff BP.(1996) Organizational citizenship behaviors and their effect on organizational effectiveness in limited-menu restaurants. *Academy of Management Best Paper Proceedings*, 307-311
- Wei SY, Morgan AN.(2004) Supportiveness of Organizational climate, Market orientation, and New Product Performance in Chinese Firms. *Journal of Product Innovation Management*, 21: 375-388.
- West MA.(1990) The social psychology of innovation in groups in M.A. West and J.L. Farr (Eds.), *innovation and ccreativity at work: psychological and organizational strategies*, Chichester, England: Wiley, 309-333.

West MA. (2003) Innovation Implementation in Work teams, in Paulus PB and Nijstad BA (Eds.) Group Creativity: Innovation through Collaboration. New York: Oxford University Press, 326-339

West MA, Farr JL Innovation at work, in West MA and Farr JL (Eds.)(1990) Innovation and creativity at work. Psychological and organizational perspectives, London: Routledge, 3-13

Woodman RW, Sawyer JE, Griffin RW. (1993) Toward a theory of organizational creativity. The Academy of Management Review, 18(2): 293-321.

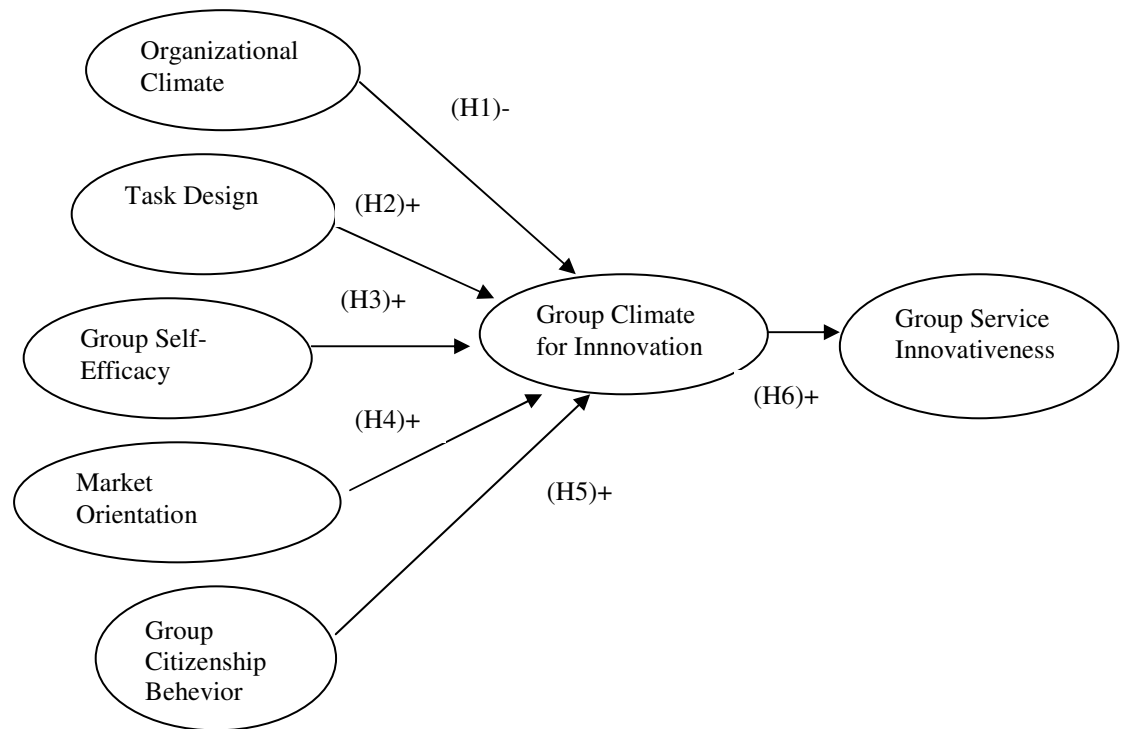
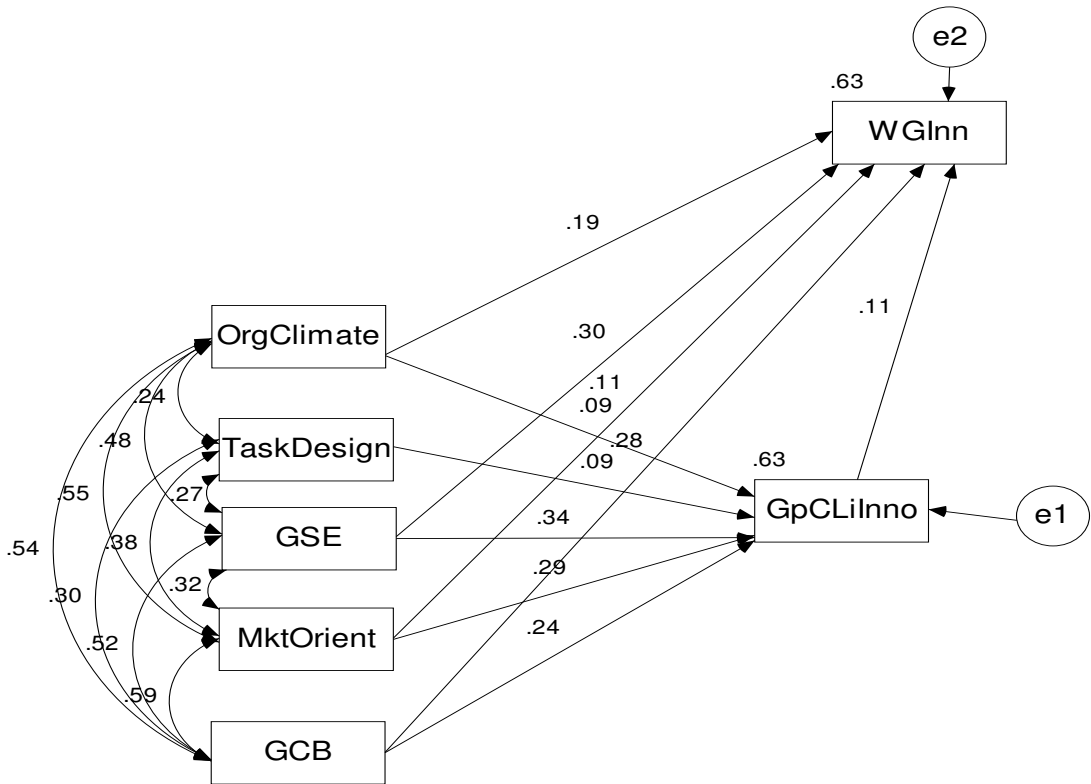


Figure 1 Conceptual Model of Work Group Service Innovativeness

Table 1 Means, SDs, Cronbach's alpha (read diagonally), and zero-order correlations of organizational and work group variables and work group service innovativeness

Variable Name	Mean	SD	1	2	3	4	5	6	7
1. Organizational Climate	3.20	.69	.82	.23	.47	.62	.55	.58	.47
2. Task design	3.50	.55		.80	.24	.41	.33	.34	.33
3. Group self-efficacy	3.69	.87			.80	.44	.50	.68	.64
4. Market orientation	3.66	.68				.89	.74	.72	.63
5. GCB.	3.57	.76					.78	.71	.70
6. Group Climate for innovation	3.64	.70						.81	.74
7. Work group Service innovativeness	3.38	.72							.78

Significant at  $p < 0.01$ ,  $N = 302$ .



Chi-Square Value	0.016
Degrees of Freedom	1
P value	.001
GFI	1.00
AGFI	1.00
RMSR	.000
TLI	1.00
CFI	1.00
NFI	1.00
RMSEA	0.00

Figure 2 Work group service innovativeness Path Model

Table 2 Estimation of Final Model

From	To	Standardised Estimate ( $\beta$ )	t-Value	New Path Confirmed
Organizational climate	Group Climate for innovation	.09	1.86	No
Organizational climate	Work group Service innovativeness	.19	4.11	Yes***
Task design	Group Climate for innovation	.09	2.46	Yes*
Group self-efficacy	Group Climate for innovation	.34	6.4	Yes***

Group self-efficacy	Work group Service innovativeness	.30	7.91	Yes***
Market orientation	Group Climate for innovation	.29	6.15	Yes***
Market orientation	Work group Service innovativeness	.11	2.26	Yes*
Group Citizenship Behavior	Group Climate for innovation	.24	4.83	Yes***
Group Citizenship Behavior	Work group Service innovativeness	.28	5.45	Yes***
Group Climate for innovation	Work group Service innovativeness	.11	1.99	Yes*

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001