

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

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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_1): 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_2): 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; Segar, Bolman, Willemse, and DeVries 2006).

Hypothesis 3 (H_3): 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 Meulenbergh 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_4): 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_5): 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_6): 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 Campion 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 subscales.

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(H₂): 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(H₃): 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(H₄): 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 Meulenbergh 2004).

Hypothesis 5 (H₅): 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 Meulenbergh 2004).

Hypothesis 6(H₆): 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.

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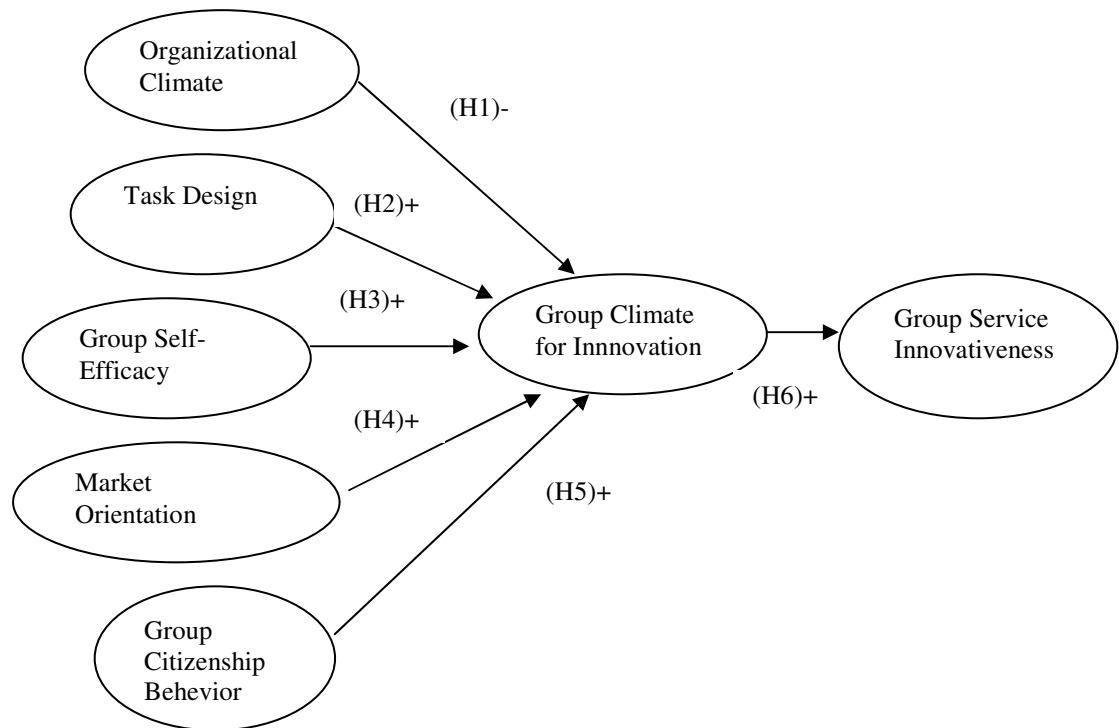
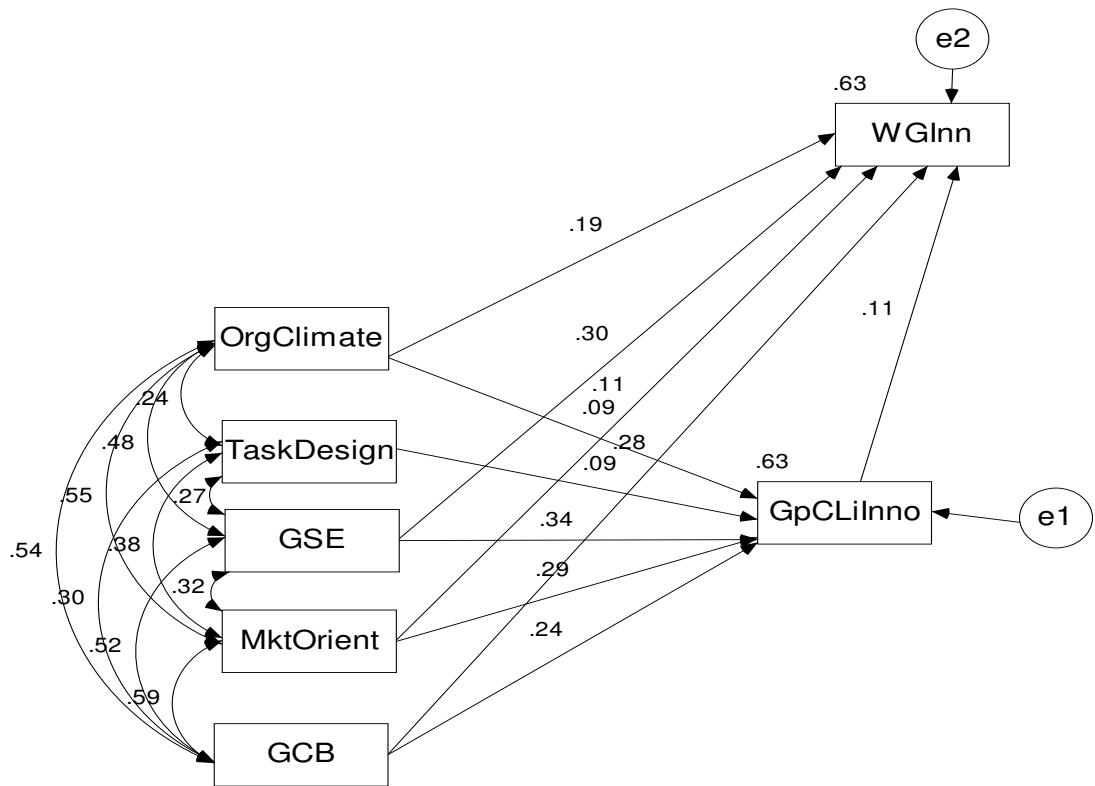


Figure 1 Conceptual Model of Work Group Service Innovativeness

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 (β) | 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