A STUDY OF UNCERTAINTY TOWARDS ORGANIZATIONAL CHANGE AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR

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ABSTRACT

The purpose of this study was to explore the relationship(s) among the following constructs: uncertainty towards organizational change, transformational leadership, psychological capital, and organizational citizenship behavior (OCB). Results showed that uncertainty towards organizational change has a significantly negative influence on psychological capital and OCB; transformational leadership has a significantly positive influence on psychological capital and OCB. Through the mediating effect of psychological capital, however, feelings of uncertainty toward organizational change were shown to have a significant and positive influence on OCB. Transformational leadership also positively influences OCB through the mediating role of psychological capital.

Keywords: Uncertainty towards organizational change, transformational leadership, psychological capital, organizational citizenship behavior

INTRODUCTION

In the world of today, the only certainty is uncertainty, and the only constant is the inevitability of change. As the external environment continues to develop and evolve, businesses have found that they must be open to change and be prepared to adapt their operational models to current trends and demands. When companies employ strategies such as mergers and acquisitions or anti-takeover schemes, employees experience feelings of uncertainty about these changes and face difficulties such as shifting work conditions, job insecurity, role conflict, reduction of resources, communication anxiety, and uncertainty with regard to their future development (Hei & Lee, 2000). During this phase of change, one of the most vital issues is whether company leadership is charismatic and influential enough to inspire employees by showing themselves capable of guiding the firm into a brighter future. This motivates employees to continue performing tasks well and encourages organizational citizenship behaviors (OCBs), such as identifying with the organization and willing willingness to assist colleagues and protect company resources.

There are many classic cases of successful organizational change; however, numerous examples of failure to properly implement change can also be found. High-level management often formulates adjustment strategies in an attempt to adapt to environmental changes,
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protect shareholder interests, and facilitate company growth. Managers expect employees to unite in achieving desired objectives. Employees who are mentally resilient and think positively are better able to flow with organizational change and put planned changes into action. However, the attitude of employees toward change is often tested by the feelings of uncertainty that accompany organizational change. In 2004, well-known U.S. scholar Luthans proposed the concept of psychological capital, which he defined as a positive psychological state demonstrated by an individual in the process of growth and development. This psychological state facilitates personal growth and enhances individual performance. Human potential is unlimited, and its root lies in psychological capital. If employees adopt an open-minded outlook on change, despite its accompanying uncertainty, this would relieve stress and lower their resistance to change, while enabling them to continue fulfilling their responsibilities. The OCBs they demonstrate also encourage team spirit and enhance team performance (Gooty, Ganvin, Johnson, Frazier & Snow, 2009).

Recent studies have shown that the psychological influence of transformational leadership on employees can lead to the manifestation of positive behavior (Piccolo & Colguitt, 2006). Demonstration of positive behavior is important in the management of psychological capital among employees (Luthans, Avolio, Avey & Norman, 2007). Psychological capital significantly affects employee performance (Gooty et al., 2009). As another strong influence on work performance, transformational leadership (Piccolo & Colguitt, 2006) can be developed through channeling psychological capital among employees. (Luthans, Avey & Patera, 2008).

In summary, the common thread of work performance connecting transformational leadership, psychological capital, and OCB indicates a positive relationship among these three elements (Gooty et al., 2009). Psychological capital plays the role of a mediator variable in this relationship (Gooty et al., 2009). However, in a situation of organizational change and the accompanying feelings of uncertainty experienced by employees, are these variables still positively correlated? Is psychological capital still the mediating variable? No previous study has simultaneously researched the relationships among these four variables. Instead of studying organizational change from the viewpoint of organizational strategy, this study chose to approach the issue from the angle of uncertainty during change, transformational leadership, psychological capital, and OCB.

Our research subjects were employees and managers in the high-tech industry. Uncertainty towards organizational change and transformational leadership were designated as independent variables, OCB as the dependent variable, and psychological capital as the mediator variable. We tested hypotheses to verify the relationships and mutual influence among these four variables.

LITERATURE REVIEW AND HYPOTHESES

The influence of organizational change uncertainty and transformational leadership on psychological capital

Zheng (2008) indicated that, from the viewpoint of employees, organizational change implies the application of measures causing disruption, instability, and insecurity. In the face of organizational change, employees not always provided with adequate information, respect, or
autonomy. As a result, workers are unable to fully understand the benefits of the change and feel unable to protect their own interests at work, which produces strong feelings of uncertainty. Employees are often negatively affected by the organizational process of change, manifested in a loss of employment, demotion, pay reduction, feeling psychologically threatened, or loss of self-esteem.

Wu (2001) indicated that employees with high self-efficacy tend to see a situation of uncertainty as a challenge and draw on their individual capabilities to overcome it. Because employees with high self-efficacy enjoy challenging themselves and engaging in complex work, they have a greater individual sense of superiority. Conversely, employees with lower self-efficacy can easily become anxious and are more likely to see factors of uncertainty as obstacles or hindrances. Not surprisingly, long-term anxiety negatively influences the physical well-being of employees as well as their mental health, and work performance. Organizational change usually causes employees to experience stress from feelings of uncertainty and anxiety. If this stress is not adequately relieved, it evolves into a force of resistance against change. Therefore, this study proposes Hypothesis 1:

**Hypothesis 1:** Uncertainty towards organizational change has a negative influence on psychological capital.

Yukl (2002) indicated that the influence of transformational leadership on employees may occur through a process of internalization. Inspiring employees requires cultivating a vision that echoes both work objectives and the personal values and viewpoints of employees. Transformational leadership has been shown to involve personal identification. This is because a positive influence leads employees to feel a sense of belonging to their leaders, which motivates them to achieve organizational goals. Bass & Avolio (1994) indicated that with the ideal influence and inspirational encouragement, employees are motivated to set challenging goals and make these goals a priority over their own interests. Enthused by sharing common objectives, employees are more inclined to believe that they can overcome any difficulty in pursuit of these goals. It is through these characteristics of transformational leadership that leaders link the self-concepts of employees to the organizational mission. Previous studies have also shown that transformational leaders can boost the confidence of employees and strengthen their self-positioning within the organization. A willingness of employees to devote themselves to achieving organizational objectives indirectly promotes better internal communication and cooperation. The influence and inspirational support afforded by transformational leadership are significant determining factors behind organizational morale. The second hypothesis of this research is shown below:

**Hypothesis 2:** Transformational leadership has a significantly positive influence on psychological capital.

The relationships among organizational change uncertainty, transformational leadership, and organizational citizenship behavior

When facing organizational change, employees experience feelings of uncertainty and anxiety, fearing that in the post-change environment they will experience role conflict or role overload, or have a lower status, less secure job, or reduced remuneration. These fears or uncertainties can reduce their overall trust in or identification with the organization (Hui &
Lee, 2000). Wu (2001) pointed out that the stress produced by uncertainty toward organizational change can be classified as role stress. In general, role stress is categorized into three variables: role ambiguity, role conflict, and role overload. Role ambiguity means that an individual does not have sufficient information to adequately fulfill their role. Role conflict means that an individual is unable to simultaneously deal with the problems encountered in his/her roles. Role conflict is manifested in two different scenarios: One is when an individual has multiple roles, each comprising different requirements. This causes psychological conflict for the individual. The second situation is when two individuals have conflicting roles. Role overload is a situation in which an individual does not have sufficient personal capability to fully meet all the requirements of their role, which generates psychological overload. The behavior of employees is needs based, and a key need is security. Robbins & Judge (2011) defined OCB as self-motivated employee behavior that goes beyond official job requirements and contributes to enhancing organizational performance. Other studies have identified various elements of OCB, such as persevering in one’s duties, contributing to the welfare of others, and seeking to cultivate organizational benefit (Lin, 1996). Williams and Anderson (1991) categorized OCB into (1) in-role behavior; (2) OCB aimed at other individuals in the workplace (OCBI), and (3) OCB oriented toward the organization as a whole (OCBO). In a situation of role conflict, an individual is unable to simultaneously deal with the problems encountered in his/her roles (Yu, 2006). Therefore, we proposed the following hypothesis:

**Hypothesis 3: Uncertainty towards organizational change has a significantly negative influence on organizational citizenship behavior.**

Leaders can influence the attitudes of their subordinates through inspiring them, motivating them, and guiding their efforts – thus increasing willingness to work hard for the success of the organization (Sergiovanni, 1990). According to Graham (1995), OCB produces different results due to differences in leadership style and methods. Podsakoff et al. (1990) researched the relationship between OCB and transformational leadership, and found that manifesting personal concern for employees has a positive effect in terms of encouraging altruistic behavior, diligence, sportsmanship, courtesy and civic virtue. Transformational leadership can inspire employees to exceed performance expectations (Bass, 1985). Based on the above literature review, this study proposes the following hypothesis:

**Hypothesis 4: Transformational leadership has a significantly positive influence on organizational citizenship behavior.**

**The relationship between psychological capital and organizational citizenship behavior**

The four constructs of psychological capital are hope, self-efficacy, optimism and resiliency. These elements help employees to internalize organizational goals, adopt positive attitudes toward work, and behave in a manner beneficial to the organization. Organ & Ryan (1995) found that the attitude of an employee toward his/her work is a strong predictor of OCB. The research of Luthans, Avolio, Walumbwa & Li (2005) showed that the psychological capital of employees is significantly correlated with performance. This indicates a close relationship between psychological capital and positive organizational behavior. Organizational citizenship behavior is influenced by individual factors, which are roughly categorized into attitude and personality traits (Organ & Ryan, 1995; Podsakoff, Mackenzie, & Bachrach, 2000). Attitude factors include work satisfaction, organizational commitment, and
organizational trust. Personality traits include variables such as disposition, emotional characteristics, and sense of fairness. Personality differences among employees may influence their individual interaction and compatibility with the organization, as well as the degree to which they contribute to organizational performance (Kristof-Brown, 2000). Psychological capital comprises positive attitudes and positive personality traits. Tang (2008) indicated that individuals with a higher level of maturity are more likely to demonstrate altruistic behavior. Internally controlled personalities are also more willing to offer assistance to others, which indicates a greater tendency to engage in OCB. Individuals with higher self-efficacy tend to have strong internal control. Therefore, this study proposes the following hypothesis:

**Hypothesis 5: Psychological capital has a significantly positive influence on organizational citizenship behavior.**

**The mediating effect of psychological capital**

Organizational citizenship behavior can greatly benefit the overall operation and performance of the organization. When employees engage in OCB on their own initiative, they can compensate for defects in organizational systems and help the organization to more effectively achieve its objectives (Lin and Hsieh, 2007). Researchers have also found that OCB affects group behavior and organizational performance. These effects often include the enhancement of productivity, the streamlining of resources, increased focus on organizational functions rather than needs, promotion of team spirit, and inter-departmental collaboration, cultivation of a workplace atmosphere that attracts and retains talent, stabilization of organizational performance, and greater organizational adaptability (Podsakoff, Mackenzie, & Bachrach, 2000). According to Tang (2008), the demonstration of altruistic behavior beyond organizational norms is a product of employees’ personal initiative and has a positive influence on organizational performance. Liu (2009) indicated that the continuous development of high self-efficacy is essential to compete in the ever-changing work environment of today. If the positive outlooks of optimistic employees could be combined with the traits of hope and self-efficacy, then in difficult situations these employees would be capable of pursuing alternatives to achieve the ideal objectives (Luthans et al., 2007). Resilience, another element of psychological capital, refers to the ability to steel oneself and focus on rebuilding and overcoming in the face of adversity (Avolio & Luthans, 2006; Luthans, 2002). Resilience is also a type of positive organizational behavior (POB). Resiliency has been defined as a positive psychological capacity, the “capacity to rebound or bounce back from adversity, uncertainty, conflict, failure, or even positive events, progress, and increased responsibility” (Luthans, 2002). Resilience has become an essential advantage in modern business environments, in which change and upheaval is frequently experienced (McCann, 2004). Other researchers have stated that positive emotions can help employees deal with change, broaden their perspectives, and encourage open decision-making. This indicates that psychological capital influences the attitudes and behavior of employees through the cultivation of positive emotions and ultimately affects organizational change (James, Avey, Luthans & Wernsing, 2008).

**Hypothesis 6: Through the mediating effect of psychological capital, uncertainty towards organizational change positively influences organizational citizenship behavior.**

Transformational leadership emphasizes the use of leadership and guidance strategies to
motivate employees and enhance their growth and development (Fry, 2003). Leaders can create an organizational vision and inspire employees to participate in making this vision a reality (Friedman et al., 2000). The behavior and expectations of a leader with psychological capital influences the behavior and attitudes of employees (Luthans, Avolio, Walumbwa & Li, 2005). When facing uncertainty towards organizational change, the organization should establish a leadership team comprising individuals who are trusted by employees and have strong interpersonal relationships. This team can assist employees in understanding and participating in change, thereby generating more positive attitudes. Leaders can also share the organizational vision in a way that encourages employees to continue identifying with and investing in the organization, which contributes significantly to the achievement of organizational goals (Yu, 2009). In consideration of the fact that OCB can be categorized into individual-oriented altruistic behavior (OCBI) and organization-oriented citizenship behavior (OCBO), we propose the last hypothesis:

Hypothesis 7: Through the mediating effect of psychological capital, transformational leadership has a positive influence on organizational citizenship behavior.

RESEARCH DESIGN AND METHODOLOGY

Research framework

The research framework of this study (shown in Figure 1) was developed according to our research motivation, research objectives, and a review/analysis of previous studies.

![Fig. 1. The Research Framework](image-url)
Uncertainty towards organizational change In this study, “uncertainty towards organizational change” refers to the feelings of uncertainty caused by the inability to accurately gauge or determine the pending outcomes of change. This construct of uncertainty comprises the following variables: loss of status, role conflict, job insecurity, and reduced resources (Hui & Lee, 2000; Yu, 2009; Yu, 2006). The scale measuring uncertainty towards organizational change was modified from the work of Hui & Lee (2000), Wu (2001), Yu (2006), and Yu (2009). The 5-point Likert scale comprised 16 items; its range was as follows: 1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree. A higher score indicates greater uncertainty towards organizational change.

Transformational leadership This study applied the definition of transformational leadership provided by Bass (1985): Transformational leaders impart a feeling of trust, responsibility, and respect to their employees; they clearly convey the goals and vision of the organization, show personal concern for employees and work to improve their knowledge and abilities. Under the guidance of transformational leaders, employees translate their own interests into the pursuit of organizational vision. The construct of transformational leadership in this study comprises the following factors: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. The scale used to measure transformational leadership was modified from the work of Bass & Avolio (1994), and Chen (2007). The 5-point Likert scale comprised 16 items (range: 1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree). A higher score indicated that the effects of transformational leadership were felt more keenly by employees.

Psychological capital This study defined psychological capital as an individual’s positive state of psychological development. This state is characterized by the ability to optimistically assess the current situation, be inspired by the opportunity for success, and persevere toward goals (Luthans et al., 2007). The construct of psychological capital, therefore, comprises the factors of high self-efficacy, hope, optimism, and resilience (Luthans et al., 2004). The scale measuring psychological capital in this study was modified from the work of Luthans et al. (2008). The 5-point Likert scale comprised 12 items (range: 1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree). A higher score indicated a higher degree of participation by employees in the organization.

Organizational citizenship behavior This study defined OCB as self-motivated employee behavior that exceeds official job requirements and contributes to enhancing organizational performance (Robbins & Judge, 2011). Organizational citizenship behaviors can be oriented towards individuals or the organization. Therefore, this construct comprised the following two factors: Individually-altruistic behavior (OCBI) and organizationally-altruistic behavior (OCBO). The scale measuring OCB was modified from the work of Williams & Anderson (1991), Lin (1996), Tang (2008) and Gooty et al.(2009). The 5-point Likert scale comprised 8 items (range: 1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree). A higher score indicated a greater degree of response to OCB.

Questionnaire survey and structure of valid samples

The research subjects were employees in the high-tech industry. The variables we sought to explore were as follows: Feelings of uncertainty towards organizational change (as experienced by employees); transformational leadership; psychological capital, and OCB as demonstrated by employees. To reduce bias from self-reporting and common method
variables, we prepared two types of assessment scales: a supervisor assessment scale and an employee self-assessment scale. The ratio of supervisors to employees was 1 to 3, producing a total of 100 supervisors and 300 subordinates. We distributed the questionnaires to employees in high-tech organizations that had recently experienced change and that were searchable via reports, magazines, and the internet. These companies or organizations included the Taiwan Semiconductor Manufacturing Company (TSMC), Motech Industries, Chimei Innolux, Chilin Technology Company, Quanta Computers, United Microelectronics Corporation (UMC), Hannstar Display Corporation, TCST Tech Co., and the Industrial Technology Research Institute (South).

We surveyed both supervisors and employees in the abovementioned organizations, and asked supervisors to assess their subordinates. A total of 285 valid questionnaires were recovered. Valid questionnaires here refer to questionnaires that were completed and returned by both employees and supervisors within the same workgroup. The reason we surveyed both supervisors and subordinates in the same workgroup was because the objective of this study was to investigate the interactive influence of behavioral factors between these parties. Based on multi-level theory, we defined the employee workgroup as a closely interacting entity (Morgeson & Hofmann, 1999). Therefore, the subjects from each workgroup in this study worked in the same office and under the same supervisor.

Factor analysis, reliability and validity analysis

The results of confirmatory factor analysis and reliability analysis showed that the Cronbach’s α of the four factors comprising uncertainty towards organizational change were as follows: reduced resources: 0.871; role conflict: 0.667; job insecurity: 0.721, and loss of status: 0.889. The CR values exceeded the standard of extreme significance (3.29), which confirmed the significance and reliability of the factor loadings. As indicated by the results of confirmatory factor analysis and reliability analysis, the factor loadings and CR values of the four factors comprising transformational leadership reached a high level of significance (Cronbach’s α values were as follows: idealized influence: 0.865; inspirational motivation: 0.885; intellectual stimulation: 0.899; and individualized concern: 0.895). The factor loadings and CR values of each factor comprising psychological capital were highly significant (Cronbach’s α values were as follows: self-efficacy: 0.748; hope: 0.857; optimism: 0.831; and resilience: 0.698). The factor loadings and CR values of each factor comprising OCB were also highly significant (Cronbach’s α values: OCBI: 0.857; OCBO: 0.759).

With regard to discriminant validity analysis, the questionnaire items and constructs in this study were developed from previous empirical research; therefore, the measurement scales and overall research framework already had content and construct validity. In order to measure discriminant validity, this study used the chi-squared difference test to compare the difference between the $\chi^2$ of the limited model and the $\chi^2$ of the unlimited model. A greater difference implies greater discriminant validity between the constructs. The analysis results showed that $\Delta \chi^2 \geq 10.83$, which indicates that the scales in this research had strong discriminant validity and did not show problems of collinearity.

The results of confirmatory factor analysis as applied to the four constructs described above (uncertainty towards organizational change, transformational leadership, psychological capital, and OCB) are shown in Table 1. The table shows that the GFI and CFI values of each construct exceeded 0.9, and the RNR values were below the standard of 0.05. This indicates
that the measurement scales in this study had strong construct validity. The Cronbach’s α value of all constructs exceeded 0.7, indicating high reliability, and the value of ratio NC ($\chi^2$/df) was below 3. These statistics demonstrate that this study had strong validity, reliability, and goodness-of-fit.

### TABLE 1. The Constructs of General Model of Confirmatory Factor Analysis

<table>
<thead>
<tr>
<th>Testing parameters</th>
<th>Uncertainty towards organizational change</th>
<th>Transformational leadership</th>
<th>Psychological capital</th>
<th>Organizational Citizenship behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$</td>
<td>192.898</td>
<td>192.530</td>
<td>86.836</td>
<td>42.293</td>
</tr>
<tr>
<td>DF</td>
<td>93</td>
<td>95</td>
<td>46</td>
<td>18</td>
</tr>
<tr>
<td>$\chi^2$/DF</td>
<td>2.074</td>
<td>2.027</td>
<td>1.888</td>
<td>2.405</td>
</tr>
<tr>
<td>P value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
</tr>
<tr>
<td>RMR</td>
<td>0.043</td>
<td>0.020</td>
<td>0.020</td>
<td>0.020</td>
</tr>
<tr>
<td>GFI</td>
<td>0.926</td>
<td>0.925</td>
<td>0.953</td>
<td>0.961</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.892</td>
<td>0.892</td>
<td>0.920</td>
<td>0.921</td>
</tr>
<tr>
<td>NFI</td>
<td>0.916</td>
<td>0.947</td>
<td>0.951</td>
<td>0.957</td>
</tr>
<tr>
<td>CFI</td>
<td>0.954</td>
<td>0.972</td>
<td>0.976</td>
<td>0.974</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.062</td>
<td>0.060</td>
<td>0.056</td>
<td>0.070</td>
</tr>
<tr>
<td>Cronbach α</td>
<td>0.898</td>
<td>0.957</td>
<td>0.908</td>
<td>0.876</td>
</tr>
</tbody>
</table>

### RESULTS AND DISCUSSION

#### Model analysis

This study used SEM model analysis to test the overall model fit and internal structural fit between transformational leadership, uncertainty towards change, psychological capital, and OCB. The results are shown in Table 2. The statistics above indicate that this study achieved a high standard in overall model fit.
TABLE 2 Analysis of Overall Model Fit

<table>
<thead>
<tr>
<th>Goodness of fit type</th>
<th>Index</th>
<th>Evaluation Criteria</th>
<th>Goodness of fit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute fit measures</td>
<td>$\chi^2$</td>
<td>Smaller the better</td>
<td>0.933</td>
</tr>
<tr>
<td></td>
<td>GFI</td>
<td>&gt;0.9</td>
<td>0.900</td>
</tr>
<tr>
<td></td>
<td>AGFI</td>
<td>&gt;0.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RMR</td>
<td>&lt;0.05</td>
<td>0.028</td>
</tr>
<tr>
<td></td>
<td>RMSEA</td>
<td>&lt;0.08</td>
<td>0.07</td>
</tr>
<tr>
<td>Incremental fit measures</td>
<td>NFI</td>
<td>&gt;0.9</td>
<td>0.916</td>
</tr>
<tr>
<td></td>
<td>RFI</td>
<td>&gt;0.9</td>
<td>0.913</td>
</tr>
<tr>
<td></td>
<td>IFI</td>
<td>&gt;0.9</td>
<td>0.944</td>
</tr>
<tr>
<td></td>
<td>TLI</td>
<td>&gt;0.9</td>
<td>0.927</td>
</tr>
<tr>
<td></td>
<td>CFI</td>
<td>&gt;0.9</td>
<td>0.943</td>
</tr>
<tr>
<td>Parsimonious fit measures</td>
<td>PGFI</td>
<td>&gt;0.5</td>
<td>0.631</td>
</tr>
<tr>
<td></td>
<td>PNFI</td>
<td>&gt;0.5</td>
<td>0.715</td>
</tr>
<tr>
<td></td>
<td>NC($\chi^2$/df)</td>
<td>1&lt;NC&lt;3</td>
<td>2.883</td>
</tr>
</tbody>
</table>

To test internal structural fit, we used the model path diagram to investigate the correlations and mediating effects between independent variables and dependent variables. Figure 2 shows that uncertainty towards organizational change has a significantly negative effect on psychological capital ($\Gamma_{11}=-0.123$, CR=2.315), which supports Hypothesis 1. The greater the uncertainty towards organizational change, the greater the negative influence on psychological capital.

Transformational leadership was shown to have a significantly positive influence on psychological capital ($\Gamma_{12}=0.610$, CR=10.359), which supports Hypothesis 2. An organization that is more capable of practicing transformational leadership will be better able to increase its psychological capital. Feelings of uncertainty towards organizational change have a significantly negative influence on OCB ($\Gamma_{21}=-0.190$, CR=2.582). This result confirms Hypothesis 3 and shows that deeper uncertainty towards organizational change will diminish OCB to a greater extent.

Transformational leadership has a significantly positive influence on OCB ($\Gamma_{22}=0.190$, CR=2.036), which supports Hypothesis 4. The influence of transformational leadership on OCB increases as these leadership practices are implemented to a greater extent. Psychological capital was shown to have a significantly positive influence on OCB ($\beta_{21}=0.540$, CR=5.191). Hypothesis 5 was thus confirmed.
Mackinnon et al. (2002) and Preacher & Hayes (2004) recommended using the Sobel test to determine whether the influence of a mediating variable is significant. As shown in Table 3, the mediating variable in this research is psychological capital. The hypotheses are as follows:

Through the mediating effect of psychological capital, uncertainty towards organizational change and transformational leadership positively influence OCB.

The first hypothesis posits that feelings of uncertainty towards organizational change actually have a positive influence on OCB through the mediating role of psychological capital. As shown in Table 3 and Fig. 2, the indirect effect is -0.066 and the total effect is -0.256. Using the Sobel test, we inputted the CR values of uncertainty towards organizational change→psychological capital (-2.315) and psychological capital →OCB (5.191), which produced t=2.114 and P=0.034. This confirms Hypothesis 6, indicating that despite feeling uncertain about organizational change, employees can be inspired to engage in OCB if the company places sufficient emphasis on developing psychological capital.

The second hypothesis is that transformational leadership positively influences OCB through the mediating effect of psychological capital. As shown in Table 3 and Fig. 2, the indirect effect is 0.329 and the total effect is 0.519. Using the Sobel test, we inputted the CR values of transformational leadership→psychological capital (10.359) and psychological capital →OCB (5.191), which produced t=4.641 and P=0.000. This supports Hypothesis 7, indicating that through practicing transformational leadership and emphasizing psychological capital, company management can positively influence OCB.
TABLE 3. The Relationship of Assuming Path and Test Results

<table>
<thead>
<tr>
<th>Assuming path</th>
<th>Direct effect</th>
<th>Indirect effect</th>
<th>CR values</th>
<th>Corresponds hypothesis</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty towards organizational change → Psychological capital</td>
<td>$\Gamma_{11} = -0.123$</td>
<td></td>
<td>-2.315</td>
<td>Hypothesis 1</td>
<td>Established</td>
</tr>
<tr>
<td>Transformational leadership → Psychological capital</td>
<td>$\Gamma_{12} = 0.610$</td>
<td></td>
<td>10.359</td>
<td>Hypothesis 2</td>
<td>Established</td>
</tr>
<tr>
<td>Uncertainty towards organizational change → Organizational citizenship behavior</td>
<td>$\Gamma_{21} = -0.190$</td>
<td></td>
<td>-2.582</td>
<td>Hypothesis 3</td>
<td>Established</td>
</tr>
<tr>
<td>Transformational leadership → Organizational citizenship behavior</td>
<td>$\Gamma_{22} = 0.190$</td>
<td></td>
<td>2.036</td>
<td>Hypothesis 4</td>
<td>Established</td>
</tr>
<tr>
<td>Psychological capital → Organizational citizenship behavior</td>
<td>$\beta_{21} = 0.540$</td>
<td></td>
<td>5.191</td>
<td>Hypothesis 5</td>
<td>Established</td>
</tr>
<tr>
<td>Uncertainty towards organizational change → Psychological capital → Organizational citizenship behavior</td>
<td>$\Gamma_{11}\beta_{21} = -0.066$</td>
<td></td>
<td></td>
<td>Hypothesis 6</td>
<td>Established</td>
</tr>
<tr>
<td>Transformational leadership → Psychological capital → Organizational citizenship behavior</td>
<td>$\Gamma_{12}\beta_{21} = 0.329$</td>
<td></td>
<td></td>
<td>Hypothesis 7</td>
<td>Established</td>
</tr>
</tbody>
</table>

Research hypotheses and empirical results

This study shows that all research hypotheses were supported by empirical results. However, different demographic variables led to significant differences in various constructs.

Hypothesis 2 (transformational leadership has a significantly positive influence on psychological capital); Hypothesis 5 (psychological capital has a significantly positive
influence on OCB), and Hypothesis 7 (transformational leadership positively influences OCB through the mediating effect of psychological capital) produced the most statistically significant results. This demonstrates the importance of transformational leadership and psychological capital, and the need to further develop these constructs. Psychological capital, in particular, was shown to play a very important mediating role in Hypothesis 6 (Uncertainty towards organizational change positively influences OCB through the mediating effect of psychological capital). It is through this mediating variable that the originally negative influence of uncertainty towards organizational change on OCB is transformed into a significantly positive influence (with a total effect of 0.417).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Findings of the main theoretical model Empirical results confirmed all hypotheses in this study; in particular, psychological capital was shown to play an important mediating role in the research framework. When managers adopt transformational leadership practices, this indirectly increases the psychological capital of employees, thereby encouraging engagement in OCB. This also confirmed the work of Luthans (2005) and McCann (2004), who indicated that psychological capital can effectively aid in the implementation of organizational change, because it influences the attitudes of staff toward change. Many previous studies have demonstrated that managers with high psychological capital can influence the behavior and expectations of employees, helping them to increase their own levels of psychological capital despite continuous changes and challenges. Employees equipped with high psychological capital are more hopeful and optimistic about the future, as well as more capable of rebounding quickly from difficulties and setbacks. These traits all contribute positively to organizational change (for example, by enhancing performance, stimulating individual potential, or reducing monitoring costs) and reduce the negative side-effects that change can have on the organization (such as negative or destructive behavior).

Due to the characteristics of the high-tech industry as well as influences from the external environment, many technology companies are implementing significant organizational changes such as restructuring, mergers and acquisitions, and layoffs. The employees in these shifting circumstances feel unsettled and insecure, which results in negative attitudes towards their work (Yu, 2006). As employee uncertainty about organizational change increases, the daily work environment is negatively affected, which creates stress for managers or supervisors (Yu, 2006). Previous studies on transformational leadership have focused on how this leadership style can improve work performance and inspire staff to be more helpful to colleagues. However, few studies have explored the mediating role of the psychological capital of employees.

Verification of the research model We used SEM confirmatory factor analysis to statistically analyze the goodness-of-fit measures for each scale and the overall research model. Results showed that the measurement scales have a good fit with the overall research framework. All standards for absolute goodness-of-fit, incremental fit, and parsimonious fit were met; the test for basic goodness-of-fit also produced satisfactory results. Through testing for internal structural fit, we were able to verify the relationships between each construct in the research framework. In summary, these outcomes confirmed that the research model used in this study is rigorous and reliable.
Research implications and recommendations

Academic implications In contrast to previous researchers who studied organizational change from the viewpoint of organizational strategy or hierarchy, this study approached the issue through the following four constructs: uncertainty towards organizational change, transformational leadership, psychological capital, and OCB. This study echoed the work of Gooty et al. (2009), who indicated that transformational leadership, psychological capital, and OCB are joined into positive relationships by the common link of performance. Psychological capital was also found to play an important mediating role. We demonstrated that uncertainty towards organizational change can positively influence OCB through the mediating effect of psychological capital. We also accumulated evidence confirming that transformational leadership positively influences OCB through the mediating effect of psychological capital.

Despite the uncertainty of organizational change, leaders have the ability to completely change the attitudes and viewpoints of their followers toward these developments. Many previous studies have shown that leaders who are reliable and equipped with strong psychological capital can impart the same traits to their followers (Luthans et al., 2007). Without sufficient psychological capital, managers or supervisors find it very difficult to help their subordinates deal with new challenges and goals. Those at the managerial level must be equipped with adequate psychological capital to inspire confidence and obedience in their employees. A leader who leads by example with positivity, emotional stability and confidence will transmit these qualities to his subordinates, helping them to overcome difficulties and increase their adaptability (Liu, 2009). Individuals will then feel more capable, secure and positive about themselves (Luthans & Larson, 2006; Luthans et al., 2007), which can reduce both initial resistance to change and damaging effects in the post-change environment.

Practical implications for management From a management perspective, psychological capital positively influences employee attitude toward organizational change (Liu, 2009); therefore, building psychological capital can be an effective method of helping staff feel less insecure or threatened by change. Companies can develop human resources to improve on the psychological capital of their employees. When recruiting workers, for example, apart from reviewing candidates’ compatibility with professional requirements, managers should consider whether the candidates are also equipped with strong psychological capital. Workplace training and development should also have adequate focus on enhancing psychological capital.

This study showed that by adopting transformational leadership practices, manages can directly or indirectly (through psychological capital) encourage staff to engage in OCB. In other words, enhancing the psychological capital of employees is another way of directly or indirectly improving OCB and work performance. This is because transformational leadership boosts employee confidence and helps them to feel more secure about their position in the organization, which increases their willingness to contribute toward the achievement of organizational goals. Another indirect effect is better internal communication and collaboration. When facing uncertainty towards organizational change, the organization should establish a leadership team comprising individuals who are trusted by employees and have strong interpersonal relationships. This team can assist employees in understanding and participating in change, thus more generating positive attitudes. Leaders can also share the organizational vision in a way that encourages employees to continue identifying with and
investing in the organization, which contributes significantly to the achievement of organizational goals (Yu, 2009).

The actions and expectations of managers equipped with psychological capital can influence the behavior of employees (Luthans, Avolio, Walumbwa & Li, 2005). Graham (1995) indicated that the effects of OCB may vary according to differences in leadership style and how leaders inspire and motivate employees. Related studies have also found that managers or supervisors can be trained to develop the qualities of transformational leadership (Barling, Weber & Kelloway, 1996). If managers improved their transformational leadership capabilities, this could directly enhance work performance and encourage engagement in OCB. Because transformational leadership positively influences psychological capital, the above results could also be reached indirectly through enhancing the psychological capital of employees.

**Research limitations and recommendations for future research**

**Limitations** Psychological capital, as described in this study, is a newer concept chiefly based on the writings of Luthans et al., (2007) and related research. Currently, the concept comprises only the four constructs of self-efficacy, hope, optimism and resiliency. However, there may be synergistic effects among psychological capital that exceed the sum total of the constructs identified above. There may be other related constructs worthy of consideration, such as EQ, courage, gratitude, etc. Future research could develop other potential constructs within psychological capital, to expand this concept and maintain its dynamism.

**Subsequent research** Future studies could modify the research design to explore these constructs separately at the organizational and individual levels. Other methods could then be used to conduct multilevel statistical analysis. This approach would clarify the influence of transformational leadership (at the organizational level) on the feelings of uncertainty, psychological capital, and OCB of employees (at the individual level).

Similar to the approach described above, psychological capital could also be researched at the organizational and individual levels. We could also analyze under what conditions individual psychological capital can be integrated into the collective psychological capital of the organization, and how to best facilitate this integration.

It is important to apply the construct of psychological capital to different work environments, such as workplaces in different industries or workplaces with diverse cultural backgrounds. The results of these studies would provide good empirical value and strengthen the validity and reliability of this construct.

**REFERENCES**


