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Impact of change readiness on commitment to technological change, focal, and discretionary behaviors: Evidence from the manufacturing sector of Karachi

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Abstract

Purpose – Commitment to change (C2C), focal and discretionary behaviors are under-researched areas in the context of developing countries such as Pakistan. The purpose of this paper is to analyze the impact of change readiness on employee's C2C, focal and discretionary behaviors when controlling for gender, qualification, experience, and marital status. In addition, the goal of this study is to determine whether the three-component model of Herscovitch and Meyer (2002) may also be applied in the private manufacturing companies of Karachi (Pakistan).

Design/methodology/approach – A sample of 205 fulltime employees having administrative and managerial responsibilities in the manufacturing operations is drawn from the manufacturing companies of Karachi undergoing major technological change. Exploratory and confirmatory factor analyses are used to evaluate the reliability and validity of the measurement model. Besides, hypotheses are tested using structural equation modeling in AMOS version 22.

Findings – The standardized estimates of SEM revealed a very good model fit between the structural model and the sample drawn using different modification indices. The results show that appropriateness has significant positive impact on affective C2C and negative impact on continuance C2C when controlling for gender, qualification, and experience. Moreover, affective C2C has significant positive impact on compliance behavior. However, the continuance C2C has significant negative impact and normative C2C has significant positive impact on cooperation when controlling for marital status. The findings may be generalized on other private manufacturing organizations of Karachi.

Originality/value – This study is one of the first to empirically establish a relationship among change readiness, C2C and active/passive change-related behaviors in the private manufacturing companies of Pakistan. One of the important theoretical contributions of the study is that the three-component model which has been empirically tested in various socio-economic settings in the Western context and in a Pakistani public sector organization may also be employed in the private manufacturing organizations of Pakistan. In particular, with respect to research instrument of "readiness for change" scale, it is also argued that the scale of the fourth dimension (i.e. personally beneficial) needs major revision by adding five to seven Likert-scale items having good content validity and high internal consistency of the measuring scale in the Pakistani context.

Keywords Structural equation modeling, Cooperation, Compliance, Championing, Commitment to change, Readiness for change

Paper type Research paper

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Introduction

Leading strategic change in an organization engrains long-term changes in any one of the seven aspects namely, strategy, skills, structure, subordinate goals, staff, systems, and style (Waterman *et al.*, 1980). This strategic-level change may introduce better innovative ideas and working practices for businesses. Since a high rate of successful change is only possible if it is secured from learners (Mazmanian *et al.*, 1997), it is the core responsibility of all of its stakeholders to get themselves ready to accept the change. In fact, the top management is mainly interested in identifying the level of organizational commitment and often condones or underestimates the importance of leadership behavior, the prevalent culture of the organization and the antecedences of increasing their change readiness. Theoretically, if an employee remains committed with her job and performs all of the assigned duties but remains reluctant in willfully accepting the corporate change then the management could not bring meaningful and useful financial and non-financial results on time. Therefore, acceptance to on-going change is now an integral part of an organization which requires an immediate attention among all of its stakeholders in Asian countries (Santhidran *et al.*, 2013).

Karachi, being the largest business hub of Pakistan and one of the top three the most populous cities of the world, attracts a vast majority of domestic and multinational organizations for varied business purposes. This cosmopolitan city alone has been accounting for more than 75 percent of collecting the total national taxes since Pakistan got its independence in 1947. It provides access to the city by sea through three fully functional and high-tech international container terminals. To encourage foreign investors, e.g. the country provides 100 percent foreign ownership rights in the social and infrastructure sectors with a minimum investment requirement of US$300,000 (US Department of State, 2013). This large influx of foreign multinational organizations has been institutionalizing state-of-the-art changes in information and communication technologies in the country since then. Hence they positively contribute in developing the national economy.

The private manufacturing companies in Karachi are largely domestically owned organizations including a number of family businesses. The employees of the private manufacturing organizations in Karachi face different types of organizational change, e.g. changes with respect to infrastructure, working procedures and practices, culture, team dynamics, and mainly technological changes. Due to hyper competition in Karachi, manufacturing organizations tend to concentrate more on improving their product quality by minimizing their total manufacturing costs. Some of the domestically created manufacturing concerns have effectively learn from their multinational counterparts and have reengineered their business procedures in order to better compete with their rivals particularly in the twenty-first century.

By virtue of fierce market competition in the city, it has attracted a large proportion of businessmen and companies from other provinces to operate their business in Karachi also. Consequently, external entities also start to enjoy market share thereby causing it very difficult for domestic manufacturing companies to first gain and then sustain their competitive advantage besides improving customer loyalty with their products.

To better address this convoluted situation in order to avoid demise in businesses, both small and large private manufacturing companies are now compelled to introduce necessary technological changes as early as possible. These large technological changes also demand for significant transformations in the routine manufacturing operations.

Therefore, the city has also observed the implementation of a large number of computer numerically controlled machines in a number of manufacturing facilities during the last two decades. Besides, companies also moved to gain ISO certifications to strengthen and market their quality management systems. Among these, there are very few organizations that have implemented green (or environment-friendly) manufacturing operations.

With regard to these major technological changes, private manufacturing organizations in Karachi are also needed to document their "undocumented" working practices and procedures. These requirements have been adopted by those private companies more rapidly who are also exporters of their finished products. To meet international standards and increase customer demands of their products, they were required to institutionalize a number of possible changes in their organization within their financial capacity. Moreover, large technological changes usually demand a higher level of change readiness among recipients of the change initiatives. Recently in the context of Pakistan, Adil (2014) has argued that leader's change-promoting behavior positively influence the employee's readiness toward a change initiative. It is very important to observe that employees of the private manufacturing organizations seem to get ready to accept the change but their working attitudes and behavior do not reflect their meaningful commitment toward the technological change. Therefore, this is a looming problem as they are more likely to resist the change.

Furthermore, with few exceptions, it is also observed that the organizational configurations of these private manufacturing organizations are largely based on machine bureaucracies where "standardization of efforts" is considered as the key means of coordination. Other characteristics include, much horizontal and vertical specialization, little training and indoctrination, usually functional and much formalization, wide at bottom and narrow elsewhere, few liaison devices, limited horizontal decentralization with more emphasis on action planning. Technostructure serves as the key part of these private manufacturing organizations (Mintzberg, 1981). Recruitment of more than one family member in one organization is largely discouraged therefore, dual-income families for married employees in one company are seldom observed in practice. Only few manufacturing organizations maintain employees old-age benefits institution schemes for their manufacturing staff including engineers.

Ironically, particularly in the light of a high unemployment rate with no unemployment benefits in the country, the cycle of coping with the technological change requires employees to willingly or unwillingly adjust themselves with the required change. Hence, they need to avoid their passive behavior by demonstrating a proven track record of their active gestures towards the change. These change-related behaviors have been classified by Herscovitch and Meyer (2002) into three states, i.e. compliance, cooperation, and championing behaviors.

In fact, based on a comprehensive meta-analysis of 17 studies, Bouckenooghe *et al.* (2014) identified that despite a decade of research on three-component model (TCM), the existing literature still face a kind of uncertainty about which specific form of commitment to change (C2C) is the most dominant for both employees and organizations. Moreover, a very little evidence is available regarding the impact of change readiness on employee's C2C and then its impact on their focal and discretionary behaviors in the context of the manufacturing companies of Pakistan. Kalyal *et al.* (2010) revealed that there are only two studies that have tested the TCM in an Asian context (i.e. Chen and Wang, 2007; Meyer *et al.*, 2007). Therefore, the present

study aims to answer the following two research questions in the context of the private manufacturing companies of Karachi:

RQ1. What is the impact of employees' readiness for change on their C2C and in turn, on their focal and discretionary behaviors?

RQ2. The three-component model (TCM) of Herscovitch and Meyer (2002) was originally developed for the Western business context. Can the same framework be applied in the private manufacturing companies of Karachi (Pakistan) too?

Literature review and development of hypotheses

Readiness for change

Employees perceive a strategic change as a fundamental change or sometimes major variations in their routine working procedures and practices. Therefore, they tend to search for more information to clarify their expectations, assumptions, and impressions regarding the entire change process (Choi, 2011). The term "readiness" refers to employees' feelings, beliefs, and intentions about the change as well as the organizational capability and capacity of its successful implementation. Therefore, based on this premise, employees develop a rational precursor whether to either support or resist change (Bouckenooghe *et al.*, 2009).

After critically analyzing 106 studies, Weiner *et al.* (2008) concluded that the notion of "change readiness" still suffer from a number of ambiguities and dissimilarities. They further inspected 43 measuring instruments of change readiness and revealed that a very little evidence is available to assess the validity and reliability for most of these generally available survey instruments. Interestingly, there are over 20 empirical studies including Holt *et al.* (2007) which did not mention the type of change they investigated however, the study of Holt and colleagues proved different types of validity and reliability (Weiner *et al.*, 2008). Therefore, four sub-scales (i.e. appropriateness, management support, change efficacy, and personally beneficial) are more valid and reliable measures of change readiness (Holt *et al.*, 2007).

Indeed, managers often prefer to implement the previously taken successful measures of other managers instead of critically analyzing the underlying situation by themselves (Abrahamson, 1996; Ghoshal and Bartlett, 1996). As a result, this complacent managerial behavior often undermines the change readiness of their subordinates. Therefore, the leader's change-promoting behavior is essential to improve change readiness among employees (Adil, 2014) because it would provide the leader with an opportunity to eliminate various doubts and confusions potentially raised by the change recipients (Bartunek *et al.*, 2006).

C2C

C2C is "[…] a force (a mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative" (Herscovitch and Meyer, 2002, p. 475). According to Jaros (2010), C2C literature can be conceptualized in two different perspectives: unidimensional and multidimensional. The unidimensional perspective holds that C2C is a general feeling of an employee (Lau and Woodman, 1995). Different authors have considered C2C as a unidimensional perspective (e.g. Herold *et al.*, 2008).

In contrast, the multidimensional perspective argues that C2C reflects a force (or "mind-set") including affective (want to), continuance (have to), and normative

(ought to) C2C (Herscovitch and Meyer 2002; Parish *et al.*, 2008). The multidimensional perspective also integrates an employee with certain courses of action required for implementing a successful change initiative in an organization (Bernerth *et al.*, 2007; Foster, 2010; Michaelis *et al.*, 2009, 2010; Neves and Caetano, 2009).

By upgrading the general theory of organizational commitment (Meyer and Allen, 1991) to a next upper level, Herscovitch and Meyer (2002) argued that C2C drives a different perception of a change initiative among employees. Theoretically, affective C2C refers to the situation in which an employee believes in the inherent benefits of a change initiative thus s/he provides support for that change at will. Whereas, continuance C2C entails the situation in which an employee starts to estimate both tangible and intangible costs if he/she remains unsuccessful to provide support for the change. However, normative C2C describes the situation in which an employee believes that this is his/her obligation to provide support for the change initiative. In short, C2C has been divided into affective, continuance, and normative C2C.

Previous studies on C2C may be classified into three categories. First, some of them studied antecedences of C2C (e.g. Chen and Wang, 2007; Herold *et al.*, 2008; Neubert and Cady, 2001, Study 2). Second, few of them focussed on the consequences of C2C (e.g. Herscovitch and Meyer, 2002; Meyer *et al.*, 2007, Indian and Canadian studies; Neubert and Cady, 2001, Study 1). Third, some of them assessed the causes and consequences of C2C (e.g. Neves, 2009; Parish *et al.*, 2008).

Leadership has a significant impact on readiness for change (Adil, 2014) which in turn, affects commitment. Anjani and Dhanapal (2012) revealed that commitment has a significant impact on readiness for change in the context of private and public commercial banks. However, both Santhidran *et al.* (2013) and Saragih *et al.* (2013) opposed the conventional belief that leadership and readiness possess a simultaneous effect on commitment. Besides, Portoghese *et al.* (2012) identified that employees' expectation about a change initiative strongly influence their C2C which may be derived from the high-quality leadership style and effective communication with all stakeholders of the change program.

In the context of Pakistan, there is very little empirical literature written on C2C with two exceptions (e.g. Baraldi *et al.*, 2010; Kalyal *et al.*, 2010). In order to improve organizational effectiveness, a number of growth-oriented organizations implement corporate-wide restructuring causing a massive organizational change. Improving the performance of organizational members through different types of change initiatives causes a fear of job insecurity among employees and a chaotic state of uncertainty (Kalyal *et al.*, 2010). They further asserted that this situation gets intensified in the context of Pakistan where there is an increasing rate of unemployment. They also subscribed to the arguments of Fugate *et al.* (2004) in the context of Pakistan that individuals with high degrees of employability are less prone to job loss. Therefore, their study proved that employability is a very powerful coping resource during corporate restructuring hence it mitigates the repercussion of job insecurity causing a high degree of employee's C2C (Baraldi *et al.*, 2010).

Noticeably, the main advantage of using TCM model is that it offers the main theoretical model for the deeper understanding of measuring C2C by allowing a more employee-centered instead of variable-centered approach to measure C2C (Bouckenooghe *et al.*, 2014). Hence, the following hypothesis is posited:

H1. The readiness for change has significant impact on employee's commitment to technological change when controlling for gender, qualification, and experience.

Focal (compliance) and discretionary (cooperation, and championing) behavior

In the literature of industrial psychology and organization development (OD), it has been elucidated in numerous studies (e.g. Bordia *et al.*, 2004) that organizational change brings considerable amount of occupational stress that affects both the individuals as well as the organization. They become skeptical about their gradually reducing well-being and frequently increasing uncertainty in the organization. In fact, Herscovitch and Meyer (2002) classified change-related behavior into a "focal behavior" (i.e. compliance) and two "discretionary behaviors" (i.e. cooperation and championing). They argued that if an employee fails to comply with the requirements for change, it means s/he is resisting with the change. In other words, compliance is a passive form to support the change initiative in which the change recipient unwillingly perform the tasks in order to meet the minimum possible standard (Gellatly *et al.*, 2006).

On the contrary, the discretionary behaviors are more active form of support the change (Bouckenooghe *et al.*, 2014) which may take different forms. For instance, after internalizing an organizational change, the employee makes a number of sacrifices at modest level (called "cooperation"). However, "championing" demands more sacrifices than the earlier discretionary behavior. The employee gets satisfied with the change initiative and has developed a trust in the possible outcomes of this change. As a result, they promote this change (Hanpachern *et al.*, 1998) to a larger population both within and outside the organization.

The focal and discretionary behavior of change recipients are largely influenced by the extent of their participation and broader involvement during the change process (Lines, 2004). The results revealed that participation is positively associated with goal attainment and organizational commitment however, it was found negatively correlated with resistance. Moreover, the effects of participation were moderated by the compatibility of the change with the organizational culture and personal goals of the change recipients. He argued that the level of participation particularly during the implementation phase of the strategic change not only reduces the degree of resistance but also leads to a greater success in the implementation of the desired change. They tend to reflect their positive (or affective) C2C at their will.

In the context of Pakistan, only two empirical literatures (Baraldi *et al.*, 2010; Kalyal *et al.*, 2010) are available to the best of my knowledge regarding C2C. In fact, both studies were authored by a team of five authors who studied C2C with respect to a restructuring process in a Pakistani public sector organization back in 2010. Baraldi *et al.* (2010) investigated the relationship between role ambiguity/job insecurity and behavioral support for change and whether this relationship is mediated by C2C. The results show that role ambiguity/job insecurity were negatively correlated with both C2C and behavioral support for change. Moreover, this negative correlation is fully mediated by C2C also. Besides, in the study of Kalyal *et al.* (2010) a team of the same five researchers first investigated the relationship between job insecurity and C2C and then how this relationship is affected by the employee's perception of employability. The results of hierarchical multiple regression analysis revealed that the employee's perception about employability serves as a very useful "coping resource" during transformation process which helps them alleviate the repercussion of job insecurity on the three forms of C2C (i.e. affective, continuance, and normative C2C). Therefore, based on the findings of above C2C with respect to the focal and discretionary behaviors, the

following hypothesis is suggested. Figure 1 depicts the conceptual framework of the present study:

H2. The commitment to technological change has significant impact on the change-related behavior of employees when controlling for their marital status.

Methodology

Sample

By using a self-completion questionnaire, a sample of 205 fulltime employees having administrative and managerial responsibilities in the manufacturing operations is drawn from the manufacturing companies of Karachi undergoing major technological change. A total of 29 univariate and multivariate outliers were removed from the data set by using standard *Z*-score and Mahalanobis distance χ^2 value at $p < 0.001$ (Tabachnick and Fidell, 2007) resulting a usable sample of 176 responses for data analysis. It is important to note that the smaller sample size can also be evidenced in previous C2C-related studies, e.g. the sample size for Baraldi *et al.* (2010), Herscovitch and Meyer (2002; Studies 2 and 3), Michaelis *et al.* (2009), and Parish *et al.* (2008) was 149, 157, 108, 198, and 184, respectively.

Measures

Readiness for change

The readiness for change was measured by 19 items adapted from Anjani and Dhanapal (2012). These items were classified into four dimensions (or sub-scales) as follows: appropriateness (six items), management support (five items), change efficacy (five items), and personally beneficial (three items). It is important to note that none of the three items of "Personally beneficial" was loaded during factor analysis. One sample item from each sub-scale includes "I think that the organization will benefit from this change," "Our organization's top decision makers have put all their support behind this change effort," "I do not anticipate any problem adjusting to the work I will have when this change is adopted," respectively. All of these items were rated on a

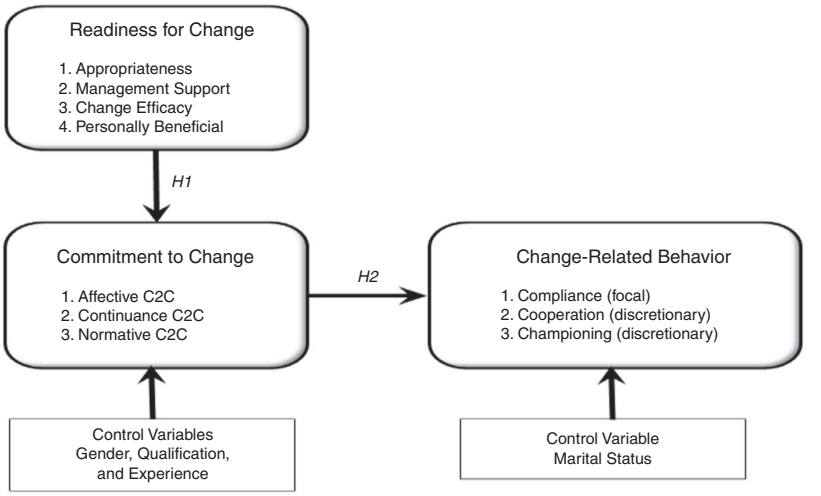


Figure 1.
The conceptual framework of the present study

five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's α of appropriateness, management support, and change efficacy was 0.76, 0.86, and 0.73, respectively.

C2C

In total, 18 items were adapted from Herscovitch and Meyer (2002) to measure C2C. The sub-scales of C2C include six items each for affective C2C, continuance C2C, and normative C2C. Sample items include "I believe in the value of this change," "I have too much at stake to resist this change," and "I feel a sense of duty to work toward this change." Five items were also reverse coded. All of these items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's α of affective C2C, continuance C2C, and normative C2C scale was 0.86, 0.86, and 0.71, respectively.

Focal and discretionary behavior

The construct of the behavioral support for change was measured through 16 items adapted from Herscovitch and Meyer (2002), i.e. compliance (three items), cooperation (eight items), and championing (five items). One sample item includes "I comply with my organization's orders regarding the change," "I engage in change-related behaviors that seem difficult in the short-term but are likely to have long-term benefits," and "I encourage the participation of others in the change," respectively. All of these items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's α of compliance, cooperation, and championing scale was 0.81, 0.78, and 0.66, respectively. Regarding the expected lower values of reliability, Baraldi *et al.* (2010) mentioned that both C2C and behavioral support for change scales lack validity in non-Western business contexts such as Pakistan.

Data analysis

Descriptive statistics

The study used four control variables (gender, marital status, highest qualification, work experience) as shown in Table I.

Exploratory factor analysis

The process of exploratory factor analysis was carried out with the help of principal component method of factoring to reduce 50 Likert-scale items into nine orthogonal dimensions considering the nine sub-scales of the three latent constructs used in the study (i.e. change readiness, C2C and focal or discretionary behavior). The value of Kaiser-Meyer-Olkin measure of sampling adequacy was 0.753 which reflects that the sample is sufficient enough to run exploratory factor analysis. Moreover, the Bartlett's test of sphericity (approx. $\chi^2 = 3109.332$, DF = 703, $p < 0.000$) depicts that the correlation matrix is not an identity matrix and the factor scores are unbiased (Leech *et al.*, 2005).

Furthermore, to increase readability of the loaded factors, the initial solution was then rotated by using varimax orthogonal rotation with Kaiser normalization method. Tabachnick and Fidell (2007) explained "Varimax is a variance maximizing procedure. The goal of varimax rotation is to maximize the variance of factor loadings by making high loadings higher and low ones lower for each factor" (p. 620). Factor loadings less than |0.40| were omitted thus a total of 38 items were loaded onto their respective factors. Each factor involved eigenvalues more than one and these nine constructs cumulatively explained over 64.3 percent of the total variance.

		Frequency	Percent
Gender	Male	121	68.8
	Female	52	29.5
	Not answered	3	1.7
Marital status	Single	111	63.1
	Married	30	17.0
	Married with children	24	13.6
	Separated/divorced/widowed	4	2.3
	Not answered	7	4.0
Highest qualification	Bachelor's degree	63	35.8
	Master's degree (including MBA)	83	47.2
	MPhil/MS	26	14.8
	CA/ACCA	2	1.1
	Doctoral degree	1	0.6
	Not answered	1	0.6
Work experience	Less than 2 Years	54	30.7
	Between 3 and 5 years	46	26.1
	Between 6 and 10 years	44	25.0
	Between 11 and 15 years	14	8.0
	Between 16 and 25 years	5	2.8
	Between 26 and 35 years	4	2.3
	More than 36 years	1	0.6
	Not answered	8	4.5

Table I.
Descriptive statistics

Note: $n = 176$

Table II shows the rotated components matrix including eigenvalues, percentage variance explained, cumulative percentage of the variance explained, Cronbach's α as well as factor loadings for each factor. It can be observed that items are heavily loaded onto their respected factor showing a very strong convergent and construct validity (Tharenou *et al.*, 2007) because it is generally considered good to have factor loadings in excess of 0.5 (Tabachnick and Fidell, 2007; Hair *et al.*, 2010). Because of no cross-loading in the rotated component matrix thus the discriminant validity was also ensured (Tharenou *et al.*, 2007). Table III shows mean, standard deviation and Pearson's correlation of the nine constructs.

Confirmatory factor analysis (CFA)

CFA was performed using AMOS version 22 in order to confirm the construct reliability. The CFA produced a measurement model testing underlying theory regarding the nine latent constructs. The model consists of 38 items (14 items for change readiness, 12 items for C2C and change-related behaviors each).

In addition to assess convergent validity using average variance extracted (AVE), the composite reliability (CR) of each sub-scale was also estimated because it is a more suitable indicator of reliability as compared to Cronbach coefficient α (Lin and Lee, 2005; Molina *et al.*, 2007). The overall CR and AVE of each variable reflect a good measurement model (Molina *et al.*, 2007), i.e. change readiness (CR = 0.92; AVE = 0.44); C2C (CR = 0.93; AVE = 0.52); and focal and discretionary behavior (CR = 0.90; AVE = 0.45).

The CFA model highlights the relationship between observed and unobserved variables (Byrne, 2010). The study used eight goodness-of-fit (GoF) indices to test the CFA model. According to Bentler (1990), Byrne (2010), Kline (2011) and Marcoulides

		Component[a]								
Eigenvalue		3.838	3.522	2.673	2.647	2.619	2.499	2.383	2.262	1.976
% of variance		10.100	9.269	7.033	6.966	6.892	6.575	6.271	5.952	5.201
Cumulative %		10.100	19.369	26.402	33.368	40.259	46.834	53.105	59.057	*64.258*
	α	1	2	3	4	5	6	7	8	9
ContinuanceC2C_4_1	0.86	0.835								
ContinuanceC2C_2_1		0.798								
ContinuanceC2C_3_1		0.783								
ContinuanceC2C_5_1		0.781								
ContinuanceC2C_6_1		0.625								
ContinuanceC2C_1_1		0.590								
ManagementSupport_2_1	0.86		0.827							
ManagementSupport_3_1			0.789							
ManagementSupport_4_1			0.767							
ManagementSupport_5_1			0.751							
ManagementSupport_1_1			0.742							
Appropriateness_2_1	0.76			0.712						
Appropriateness_5_1				0.695						
Appropriateness_6_1				0.687						
Appropriateness_1_1				0.647						
Appropriateness_4_1				0.571						
Cooperation_4_1	0.78				0.761					
Cooperation_3_1					0.675					
Cooperation_2_1					0.666					
Cooperation_1_1					0.571					
Cooperation_5_1					0.545					
Compliance_2_1	0.81					0.776				
Compliance_1_1						0.698				
Compliance_3_1						0.687				
AffectiveC2C_R2_1	0.86						0.830			
AffectiveC2C_R3_1							0.819			
AffectiveC2C_R1_1							0.771			
ChangeEfficacy_2_1	0.73							0.726		
ChangeEfficacy_3_1								0.699		
ChangeEfficacy_4_1								0.694		
ChangeEfficacy_1_1								0.651		
Championing_2_1	0.66								0.714	
Championing_5_1									0.691	
Championing_4_1									0.656	
Championing_3_1									0.606	
NormativeC_4_1	0.71									0.847
NormativeC_3_1										0.809
NormativeC_2_1										0.645

Notes: [a]Rotation converged in eight iterations. Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalization

Table II.
Factor loadings of readiness for change, commitment to change, and change-related behavior

and Schumacker (2001), the widely used measures are the ratio of χ^2 statistics to the degree of freedom (CMIN/DF), GoF index (GFI), adjusted GoF index (AGFI), normed fit index (NFI), expected cross-validation index (ECVI), Tucker-Lewis Index (TLI) also called non-normed fit index, comparative fit index (CFI) and root mean square error of approximation (RMSEA) with PCLOSE.

In this study, the ratio of the minimum discrepancy to the degree of freedom (CMIN/DF) was 1.51 which is less than 3 (p-value = 0.00) as recommended by Byrne (2010). It is

important to note that according to Hair *et al.* (2010) the CFA model may have a "significant *p*-value [of CMIN/DF] even with good fit" (p. 647) if the sample size is less than 250 with 12-30 observed variables. Other model-fit indices include GFI = 0.81; AGFI = 0.77; NFI = 0.72; ECVI = 6.71; TLI = 0.87; CFI = 0.88; and RMSEA = 0.05 (PCLOSE = 0.17). The combination of these results suggests that the CFA (measurement model) appears to show a good model fit between the observed and unobserved variables (Byrne, 2010).

Structural relationship among change readiness, C2C, focal and discretionary behaviors using SEM

Since the CFA model presented a good model fit therefore, the study was in the position to know the findings of the hypothesized model using structural equation modeling (Byrne, 2010). Figure 2 depicts the structural relationship among change readiness, C2C, focal and discretionary behavior. The structural model has a very good model fit (see in the bottom of Figure 2). All of these model-fit indices exceeded their recommended value, suggesting that the structural model portrays a very high GOF to the sample drawn (Browne and Cudeck, 1992; Lin and Lee, 2005; Sit *et al.*, 2009).

Test of generalizability

The study used ECVI in SEM analysis to test whether the research findings may be generalized or expected to cross-validate in a new sample (Loehlin, 2004). Albeit, it has no range of values (Byrne, 2010) however, "[…] smaller values indicate greater likelihood of generalization" (Herscovitch and Meyer, 2002, p. 479). The ECVI value of the structural model was 0.92 exhibiting the greatest potential to be generalized to other samples within the same industry.

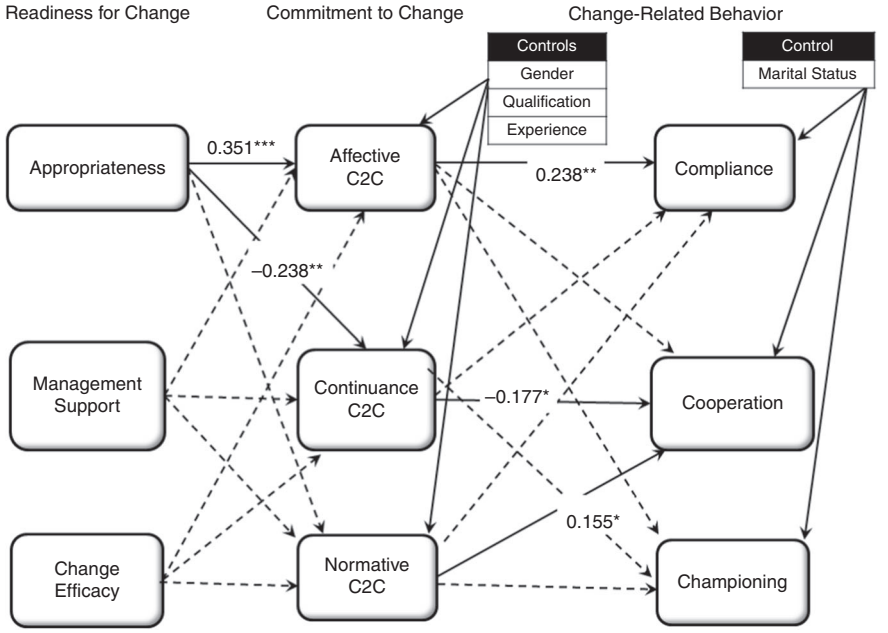
Hypotheses testing

There are two primary hypotheses in this study. *H1* assesses the impact of change readiness on C2C whereas *H2* analyzes the impact of C2C on focal and discretionary behavior. Three sub-scales were used for each of the three latent constructs results a total of 9 observed variables which may be posited in the form of 18 secondary hypotheses as shown in Table IV. Each of the unstandardized SEM regression weights was divided by its standard error to calculate the critical ratio. According to Byrne (2010), the individual hypothesis is supported if the critical ratio is greater than ±1.96. Table IV shows the "CR required" column – the value which is required to make the hypothesis supported.

Table III.
Mean, standard deviation and Pearson's correlation of the nine constructs

Constructs	Mean	SD	1	2	3	4	5	6	7	8	9
Appropriateness	3.971	0.526	1								
Management support	3.708	0.759	0.341**	1							
Change efficacy	3.819	0.555	0.420**	0.302**	1						
Affective C2C	0.003	0.954	0.291**	0.040	0.034	1					
Continuance C2C	0.001	0.964	−0.212**	0.019	−0.117	−0.456**	1				
Normative C2C	0.013	0.970	0.059	0.069	0.077	−0.060	0.288**	1			
Compliance	0.014	0.894	0.220**	0.257**	0.323**	0.158*	−0.031	0.067	1		
Cooperation	0.011	0.968	0.251**	0.256**	0.189*	0.124	−0.158*	0.104	0.530**	1	
Championing	0.012	0.966	0.088	0.226**	0.201**	−0.048	−0.028	0.071	0.382**	0.496**	1

Note: *,**Correlations are significant at 0.05 and 0.01 level, respectively (two-tailed)



Notes: Staright and dotted lines denote significant and insignificant regression paths, respectively. CMIN/DF = 1.42; GFI = 0.96; AGFI = 0.89; NFI = 0.89; TLI = 0.91; CFI = 0.96; RMSEA = 0.05; ECVI = 0.92. *p < 0.05; **p < 0.01; ***p < 0.001

Figure 2.
The structural relationship among readiness for change, commitment to change, and change-related behavior

Hypothesis	SEM regression path	SRW	SE	CR	p-value	CR required	Remarks
H1a	App→AC2C	0.351	0.145	4.407	0.000***	N/A	Supported
H1b	App→CC2C	−0.238	0.150	−2.888	0.004**	N/A	Supported
H1c	App→NC2C	0.019	0.156	0.223	0.824	1.737	Not supported
H1d	MSupport→AC2C	−0.032	0.096	−0.417	0.677	2.377	Not supported
H1e	MSupport→CC2C	0.102	0.099	1.303	0.192	0.657	Not supported
H1f	MSupport→NC2C	0.056	0.103	0.694	0.488	1.266	Not supported
H1g	CEfficacy→AC2C	−0.079	0.136	−1.009	0.313	2.969	Not supported
H1h	CEfficacy→CC2C	−0.062	0.141	−0.774	0.439	2.734	Not supported
H1i	CEfficacy→NC2C	0.062	0.147	0.751	0.453	1.209	Not supported
H2a	AC2C→Comp	0.238	0.074	2.930	0.003**	N/A	Supported
H2b	AC2C→Coop	0.051	0.084	0.613	0.540	1.347	Not supported
H2c	AC2C→Champ	−0.083	0.085	−0.975	0.329	2.935	Not supported
H2d	CC2C→Comp	0.071	0.076	0.856	0.392	1.104	Not supported
H2e	CC2C→Coop	−0.177	0.087	−2.072	0.038*	N/A	Supported
H2f	CC2C→Champ	−0.090	0.088	−1.028	0.304	2.988	Not supported
H2g	NC2C→Comp	0.065	0.067	0.869	0.385	1.091	Not supported
H2h	NC2C→Coop	0.155	0.077	2.023	0.043*	N/A	Supported
H2i	NC2C→Champ	0.094	0.078	1.206	0.228	0.754	Not supported

Notes: SRW, standardized regression weights; SE, standard error; CR, critical ratio. CR required to make the hypothesis supported. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Table IV.
Hypothesis testing results using SEM

Moreover, Table IV also shows that appropriateness has significant positive impact on affective C2C (0.351, $p < 0.001$) and significant negative impact on continuance C2C (−0.238, $p < 0.01$). Similarly, affective C2C has shown significant positive impact on the compliance (focal) behavior (0.238, $p < 0.01$), continuance C2C has significant negative impact on cooperation (discretionary) behavior (−0.177, $p < 0.05$) and finally, normative C2C has significant positive impact on cooperation (discretionary) behavior (0.155, $p < 0.05$). The "CR required" column shows that eight more hypotheses (i.e. *H1c*, *H1e*, *H1f*, *H1i*, *H2b*, *H2d*, *H2g*, and *H2i*) could also be supported with a slight increase in critical ratio.

In other words, when appropriateness goes up by 1 standard deviation, affective C2C goes up by 0.351 and continuance C2C goes down by 0.238 standard deviations. Similarly, when affective C2C goes up by 1 standard deviation, compliance which is a focal behavior, goes up by 0.238 standard deviations. When continuance C2C goes up by 1 standard deviation, cooperation (discretionary behavior) goes down by 0.177 standard deviations. Finally, when normative C2C goes up by 1 standard deviation, cooperation goes up by 0.155 standard deviations. In short, *H1a*, *H1b*, *H2a*, *H2e*, and *H2h* are supported.

Discussion

The study examines the impact of change readiness on C2C and then the impact of C2C on the focal (compliance) and discretionary (cooperation and championing) behaviors. With a total of 18 hypotheses, the results of the measurement and structural models demonstrate a very good model fit in relation with the sample drawn. It is important to note that testing the statistical significance of individual hypothesis in structural equation modeling is less important than testing the overall model fit (Byrne, 2010) because all of the variables are entered simultaneously and then the overall model fit is estimated when controlling for gender, qualification, experience, marital status. Most recently, Adil (2015) has detailed two other reasons and concluded that testing the statistical significance of individual hypothesis in SEM has been a contradictory issue for the last four decades.

The significant and insignificant relationships with standardized weights may be evidenced in both Table IV as well as in Figure 2 thus may be used interchangeably. Table IV shows that appropriateness has significant positive impact on affective C2C (*H1a*) and negative impact on continuance C2C when controlling for gender, qualification and experience (*H1b*). As long as employees feel that the required change is appropriate for the business they remain motivated and as a result, they tend to show their affective commitment to the change initiative. It means that they prefer to accept the change at their will. It is quite obvious to note that once they show their C2C at their will, there is no compulsion to accept the change therefore, the negative correlation was observed between appropriateness and continuance C2C.

In addition, Figure 2 shows that affective C2C has significant positive impact on compliance behavior when controlling for marital status (*H2a*). It is because of the fact that the employees who intend to show their C2C at their will (affective) are more likely to comply with the change efforts. They understand that the change is beneficial for the organization and it would also benefit their individual career. It is however, very important to observe leader's change-promoting behavior in stimulating their change readiness which is usually mediated by the culture of the organization (Adil, 2014). The conducive environment would enable the organizational members in rapidly accepting the change so that they could comply with the policies, rules, and procedures

at their will. This particular behavior would also encourage them to accommodate with the change by incorporating minimum acceptable course of actions (i.e. just compliance) which could help them adopt the change easily and effectively.

Moreover, Table IV also shows that the continuance C2C has significant negative impact on cooperation (*H2e*). This is because of the fact that in continuance C2C employees demonstrate their C2C because of some compulsion. They have to demonstrate their commitment to the change initiative (Herscovitch and Meyer, 2002) because of a variety of reasons. They may have a fear of a loss of something meaningful for them at workplace in case if they do not vote or even work in favor of the required change initiative. But when this compulsion-type situation increases, employees are less likely to cooperate with the change. Therefore, these employees tend to shirk official assignments as much as possible and they do not volunteer for additional service or de-jobbing. This intricate situation may possibly diminish their organizational citizenship behavior and work engagement. As a result, sooner or later, these employees would serve as an obstacle in the successful and timely implementation of the change initiatives.

Lastly, Figure 2 also indicates that normative C2C has significant positive impact on cooperation when controlling for marital status (*H2h*). According to Herscovitch and Meyer (2002), normative C2C refers to "perceived obligation to remain" (p. 475) which inculcates a sense of responsibility in individuals who prefer to fulfill their assigned duties or projects over leaving the organization. Blanchard *et al.* (2013) argued that this relationship is largely because of an established lasting relationship between employees and the employer which has induced themselves to conform to certain ethical standards. In fact this level of trust ultimately enriches the organizational climate and enhances the element of organizational identification among its members.

Limitations and directions for future research

The findings of the present study should be viewed in the light of the following limitations.

First, this study used 205 responses after removing univariate and multivariate outliers. Previous C2C-related studies have also used smaller sample size (e.g. Baraldi *et al.*, 2010; Herscovitch and Meyer, 2002 (Studies 2 and 3); Michaelis *et al.*, 2009; Parish *et al.*, 2008). SEM is a large sample technique thus future studies should concentrate on a larger sample size.

Second, the useable responses were collected from the manufacturing companies based in Karachi however, future studies may also conduct a sectorial analysis or a comparative analysis of the subject in between manufacturing and service sectors. This comparative analysis will further generate a deeper understanding of C2C for both academicians and OD practitioners.

Finally, the intuitive conceptual relationship between organizational change and employee commitment has been well established now in the existing literature however, little evidence is available regarding their intersecting relationship with other associated variables. For instance, the *H2e* of the present study was delimited to ascertain the impact of continuance C2C on the cooperation behavior of the change recipients. Future studies may analyze the impact of cooperation behavior on their organizational citizenship behavior in the context of developing countries such as Pakistan. Similarly, the *H2h* empirically tested the impact of normative C2C on their cooperation behavior when controlling for marital status. Future studies may construct the impact of cooperation behavior in predicting organizational identification in the context of developing countries such as Pakistan.

Conclusion

There are three main latent constructs used in this study namely, "readiness for change," "commitment to change," and "change-related behaviors." Readiness for change was measured by three sub-scales: appropriateness, management support, and change efficacy. C2C was measured by three sub-scales: affective C2C, continuance C2C, and normative C2C. However, change-related behaviors were classified into employee's one focal (compliance) and two discretionary (cooperation and championing) behaviors. The present study used structural equation modeling method to test two major hypotheses in order to answer two research questions. The study revealed that appropriateness has significant positive impact on affective C2C and negative impact on continuance C2C when controlled for gender, qualification and experience. Moreover, affective C2C has significant positive impact on compliance behavior; continuance C2C has significant negative impact on cooperation; and normative C2C has significant positive impact on cooperation when controlled for marital status. Based on the ECVI value, the study concluded that the SEM findings may be generalized on a larger population in the private manufacturing companies of Karachi. Thus, the TCM of Herscovitch and Meyer (2002) may also be applied in the private manufacturing organizations of Karachi (Pakistan).

Theoretical contribution

Out of 13 studies on C2C (including the present study), only six studies used focal and discretionary behaviors (see Appendix). Likewise these studies, the present study also reflects a good reliability statistics after factor analysis with a minor exception of championing (0.66). The CFA (measurement model) shows very good model-fit indices having very low discrepancies between the theoretical model and the sample drawn. To the best of my knowledge, there are two studies on C2C in the context of Pakistan (Baraldi *et al.*, 2010; Kalyal *et al.*, 2010) however, both of them applied TCM in a public sector organization. Therefore, it may be concluded that the TCM of C2C developed by Herscovitch and Meyer's (2002) which has been tested in the Western context and Pakistani public sector may also be applied in the private manufacturing organizations of Pakistan. Interestingly, it is also identified that none of the three items of "Personally beneficial" adapted from Anjani and Dhanapal (2012), was loaded during factor analysis therefore this scale needs major revision by adding five to seven more relevant Likert-scale items ensuring good content validity as well as high internal consistency of the measuring scale in Pakistani context, in particular.

Practical implications

In the context of the manufacturing sectors operating in Karachi, the findings indicate that managers need to take change recipients into confidence regarding the appropriateness of the desired change well before the implementation of the change program. It will increase the level of affective C2C by significantly decreasing the continuance C2C. In other words, employees have a tendency to relate the instant messages of a corporate change with their official responsibilities and then compare it with the competencies they hold. If managers remain successful in effectively communicating the message that the desired change is appropriate for the long-term benefits of the organization, the change recipients would accept the change willfully instead of demonstrating their commitment to the change as a compulsion.

Moreover, the results also reveal that those employees who are committed to the change initiative at their will (affective C2C) show a greater propensity to comply with the change. Therefore, managers should invest their significant amount of time in

strategizing how they could optimize the level of affective C2C while being within their financial constraints. Managers in the manufacturing sectors of Karachi should also need to understand that if their subordinates take the desired change as a compulsion by having a profound belief that they have to be committed with the change irrespective of their will (continuance C2C), they are less likely to cooperate with the OD practitioners. Non-compliance to this focal behavior may turn out to be latent resistance which may not be easily explored by every mangers in the initial stages of the change management process.

In the end, findings also reveal that normative C2C has significant positive impact on cooperation. It means that if change recipients believe that they ought to remain committed with the change by conforming to certain established standards (normative C2C) in their organization, they would inherently motivate themselves to cooperative with the change process. This underlies their discretionary behavior which is largely influenced by their leader's C2C as well as the extent of its effectiveness (Abrell-Vogel and Rowold, 2014) which may be observed differently among employees having different marital status.

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Further reading

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Appendix

Table AI. Cronbach's α of previous studies using C2C, focal and discretionary behavior scales

Study	C2C scale			Focal and discretionary behavior scale		
	AC2C	CC2C	NC2C	Compliance	Cooperation	Championing
Herscovitch and Meyer (2002, p. 480)	0.94	0.71	0.78	0.49	0.85	0.90
Chen and Wang (2007, p. 507)	0.83	0.89	0.71	–	–	–
Meyer *et al.* (2007, p. 2)	0.94	0.83	0.67	0.78	0.71	0.91
Parish *et al.* (2008, p. 51-52)	0.95	0.87	0.91	–	–	–
Baraldi *et al.* (2010, p. 354)	0.91	0.90	0.62	0.89	0.91	0.93
Foster (2010, p. 19)	0.94	0.86	0.75	–	–	–
Kalyal *et al.* (2010, p. 335)	0.91	0.90	0.62	–	–	–
Culpepper (2011, p. 521)	0.77	0.74	0.71	–	–	–
Ning and Jing (2012, p. 474)	0.88	0.83	0.76	–	–	–
Portoghese *et al.* (2012, p. 585)	0.83	0.70	0.77	–	–	–
Yang (2005)[a]	0.79	0.82	0.79	0.82	0.88	0.90
Jones (2007)[a]	0.92	0.84	0.72	0.81	0.85	0.92
Current Study	0.86	0.86	0.71	0.81	0.78	0.66

Note: [a]Unpublished dissertation

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