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Transformational leadership and innovation adoption: Is there a moderation role of personal initiative and job control?

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Abstract

Hospital managers and chief physicians, but also doctors and nurses, in an effort to face constant changes, are involved in innovation. This study examines if transformational leadership style is related to adoption of employees' suggestions, and if personal initiative and job control moderate this relationship. Nurses, doctors, and auxiliary and technical collaborators (n = 137), of an Italian public hospital, participated in this study. Results show that transformational leadership was correlated to innovation adoption but, when examined moderators were included in the analysis, the relation was no more significant. Personal initiative and job control did not moderate the relationship between transformational leadership and innovation adoption but they do have a significant direct effect on innovation adoption. Findings suggest that innovation in hospitals is more related to personal variables, like personal initiative and job control, rather than to transformational leadership.

Keywords: innovation adoption; transformational leadership; personal initiative; job control; hospitals

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Liderança transformacional e adoção de inovação: Existe um papel moderador da iniciativa pessoal e do controlo de trabalho?

Resumo

Os gestores dos hospitais e chefes, assim como os médicos e enfermeiras, esforçando-se para enfrentar as mudanças constantes, estão envolvidos na inovação. Este estudo examina se o estilo de liderança transformacional está relacionado com a adoção das sugestões dos funcionários e se a iniciativa pessoal e o controlo do trabalho moderam essa relação. Enfermeiros, médicos e colaboradores auxiliares e técnicos (n = 137) de um hospital público italiano participaram neste estudo. Os resultados mostram que a liderança transformacional se correlaciona com a adoção da inovação, mas, quando os moderadores examinados foram incluídos na análise, a relação não foi significativa. A iniciativa pessoal e o controlo do trabalho não moderam a relação entre a liderança transformacional e a adoção da inovação, mas têm um efeito direto significativo na adoção da inovação. Os resultados sugerem que a inovação nos hospitais está mais relacionada com variáveis pessoais, como iniciativa pessoal e controlo do trabalho, do que com a liderança transformacional.

Palavras-chave: adoção de inovação; liderança transformacional; iniciativa pessoal; controle de trabalho; hospitais

1. INTRODUCTION

Change is a constant in many organizations, and this also applies to health organizations and hospitals. Hospitals need to continuously innovate medical treatments and services because of the constant technological change (Speziale, 2015), the increasing requests of patients and families, and the frequent decrease of financial resources (Dubois, McKee, & Nott, 2006).

Changes in healthcare require to substitute the old-traditional physician-centered approach for an "organization-driven" approach (Speziale, 2015). As a result, multiple professional figures play a central role in hospitals' innovation processes and performance.

Hospital managers, head of wards or health-care professionals, in their daily management activities, may support or not the innovation (Mumford, Scott, Gaddis, & Strange, 2002). At the same time, the success of creative and innovative ideas depends very much also on the initiative of employees that implement the new ideas

and transform them into concrete practices (Fay & Frese, 2001; Martín, Potočnik, & Fras, 2017; Wu, Parker, de Jong, 2014).

This study investigates if transformational leadership style, due to its demonstrated role in fostering and supporting organizational innovation (Gumusluoglu & Ilsev, 2009; Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013) and performance (Wang, Oh, Courtright, & Colbert, 2011) is related to the innovative behaviour of employees. Furthermore, we want to investigate if personal initiative and job control moderate this relationship. These latter hypotheses are based on the interest of companies to increase employees' personal initiative in order to support change processes (Baer & Frese, 2003) and of employees to shape objectives, strategies and conditions of their own daily work (Petrou, Demerouti, & Schaufeli, 2018).

2. LITERATURE REVIEW

West and Farr (1990, p. 9) defined innovation as "the intentional introduction and application within a job, work team or organization of ideas, processes, products or procedures which are new to that job, work team or organization and which are designed to benefit the job, the work team or the organization". Two main steps characterize the innovation process: the "development of new ideas", or creativity, stage and the test, and implementation of the new ideas, or innovation stage (Amabile, 1988; West, 2002). While creativity concerns the generation of solutions, implementation refers to the "transition period during which targeted organizational members ideally become increasing skilful, consistent and committed in their use of an innovation" (Klein & Sorra, 1996, p. 1057).

The organizational implementation of innovative ideas aims to anticipate or match environmental changes and to improve the effectiveness of services (Shipton, West, Parkes, Dawson, & Patterson, 2006).

Studies regarding the implementation of new ideas generally focus on individual and organizational-related processes. On one hand, studies focused on individuals examine employees' behavioural responses to innovation, such as the psychological commitment to the innovation and intention to use it or the actual use of innovation (Choi & Price, 2005; Hartwick & Barki, 1994). On the other hand, studies focused on organizational-level innovation examine institutional resources, structures and practices of the implementation units (Chatterjee, Grewal, & Sambamurthy, 2002).

These two different approaches have been integrated by Greenhalgh, Robert, Macfarlane, Bate and Kyriakidou (2004), who found that institutional factors influence employees' attitudes and behaviours to innovation. For instance, employees' job satisfaction can

indeed increase the probability that innovations or changes are introduced in a work context (Shipton et al., 2006). In addition, individuals who experience positive feelings at work may be ready to develop good ideas and also prone to build constructive relationships with colleagues and managers (Shipton et al., 2006). Furthermore, Staw, Sutton and Pelled (1994) observe that employees that have positive emotions experience also greater optimism, perceived control, persistence and creativity, that may lead to innovation.

Literature has shown that leaders play an important role in creating and supporting organizational change and innovation (Leonard, Lewis, Freedman, & Passmore, 2013), because they actively create the context in which change-oriented behaviours (adaptive and proactive behaviours above all) can develop.

In 1978, Burns introduced the distinction between transactional and transformational leadership. Transactional leadership is based on the conservation of the status quo, advancing well-defined tasks and monitoring employee's performance through rational and economic means; transformational leadership, instead, has been conceptualized as a set of components (idealized influence, inspirational motivation, intellectual stimulation and individualized consideration) oriented to change and innovation (Bass & Riggio, 2006). A great emphasis has been devoted to the intellectual stimulation components of transformational leadership. Jung, Chow and Wu (2003) observed that it encourages to reframe problems, approach situations in new ways and modify existing rules in order to achieve goals and think "outside the box", which may be relevant for innovative processes.

Furthermore, transformational leaders have also been depicted as creating opportunities for professional development of team members, also in the healthcare field (Stanley, 2006). These leaders "partner" much more with followers, which means higher levels of information sharing, mentoring and one-on-one coaching (Dong, Bartol, Zhang, & Li, 2017). In short, transformational leaders are supposed to challenge the traditional barriers and to look for new ways of doing things; they might support for the implementation of innovations and changes, which encourages the innovative behaviour of followers. Thus, we argue that:

H1) Transformational leadership is positively related to the innovative behaviour of employees.

Leadership is important, but leaders cannot carry out projects alone, and that is why it is also important to keep in account the personal initiative of their followers, especially if the leadership style tends to promote initiative and autonomy.

As stated by Frese, Fay, Hilburger, Leng and Tag (1997), personal initiative is the tendency to overcome rules and barriers in order to carry out a task or goal by engaging in proactive behaviours. Three important aspects of personal initiative are self-starting,

proactivity and persistence (Frese et al., 1997). Self-starting means that employees, feeling free from external pressure, instructions and role duties, direct their behaviours to the goals developed during their work. Proactivity is the capacity to anticipate problems and opportunities and to try to take advantage from them. Persistence refers to the will to overcome barriers and difficulties even when the situation seems to be insurmountable.

Dimensions of personal initiative reinforce each other, and people who develop these attitudes not only follow orders by supervisors and the organization, but also actively carry changes forward (Frese & Fay, 2001) and convert new ideas into concrete applications (Fay & Frese, 2001). Accordingly, we argue that the positive effect of transformational leadership on employee's innovative behaviours will be enhanced when employees have also a higher level of personal initiative. Thus, we hypothesize that:

H2) Personal initiative moderates the relationship between transformational leadership and innovative behaviour of followers.

The positive effect that transformational leadership might have on innovative behaviours may also be related to the job control, or the range of autonomy, that workers can use to introduce innovation in their organization. Job control refers to the influence that employees have over their actions and over the conditions under which the work is conducted (Frese, 1989). High levels of job control seem also related to personal initiative and a proactive orientation toward work (Parker, Wall, & Jackson, 1997). Accordingly, we argue that the positive effect of transformational leadership on employee's innovative behaviours will be enhanced when employees also have a higher level of job control. Thus, we hypothesize that:

H3) Job control moderates the relationship between transformational leadership and innovative behaviour of followers.

3. METHOD

3.1 Participants

The study was conducted in two wards of a public hospital in central Italy. One ward had faced important changes and innovations in previous years for the merging of three equivalent wards of different hospitals into a single one. The other

ward, instead, had faced minor changes, mainly consisting in the integration of a surgical structure with a medical one.

Employees had been informed of the present study by their supervisors and participated on a voluntary and anonymous basis after being informed about the processing of their personal data and about their rights to privacy.

A self-report questionnaire was administered to 137 workers of the hospital; 49 respondents were men (36%) and 88 women (64%); nurses were 118, doctors and biologists were 9, while 10 respondents were auxiliary and technical collaborators. More than two third of the respondents (n = 98; 71.5%) were working in the ward facing multiple changes, and the remaining (*n* = 39, 28.5%) were working in the other one. The average age was 33.9 y. o. (*SD* = 8.47; *Min*. = 22; *Max*. = 60). Workers with a permanent contract were 123, while 16 had a fixed-term contract.

3.2 Measures

Transformation leadership style: Transformation leadership style was measured using 16 items of a shortened version of the Multifactor Leadership Questionnaire (MLQ) by Bass & Avolio (2000). Items asked to rate the frequency of specific actions and behaviours implemented by the leader, on a 5-point Likert scale, from 0 ("*Not at all*") to 4 ("*Frequently, if not always*"). The items measure the four different dimensions of transformational leadership (idealized influence, inspirational motivation, intellectual stimulation and individualized consideration). Respondents had to report, for example, the extent with which the leader "spends some time in coaching and mentoring his/her collaborators" or "suggests new ways of doing things". Internal consistency showed that Cronbach's α for this scale was .88.

Innovation adoption: Innovation adoption was estimated using the 5-item Italian version of the scale developed by Axtell et al. (2000). The scale measures the extent to which employees' suggestions are implemented. Participants indicated the frequency with which their suggestions about, for example, "new services or improvement of services" or "new ways of managing and transmitting information", have been effectively implemented. Answers were given in a 7-point Likert scale, from 0 ("*Never*") to 6 ("*Always*"). The Cronbach's α for this scale was .96.

Personal Initiative: Personal Initiative was measured with the 7 items of the Italian version of the scale developed by Frese et al. (1997). Answers were given on a 7-point Likert scale, from 0 ("*I completely disagree*") to 6 ("*I completely agree*"). Some examples of items are: "I face problems actively"; "Every time that something goes wrong, I immediately look for a solution"; "I quickly take the initiative, even if others don't do it". Cronbach's α for this scale was .93.

Job control: Job control was assessed using the control dimension of the Italian and shortened version of Cenni & Barbieri's (1997) translation of the Job Content Questionnaire originally developed by Karasek (1985). The subscale is composed of 7 items on a 7-point Likert scale, from 0 ("*I completely disagree*") to 6 ("*I completely agree*"). Participants had to think about their own work situation and indicate their agreement with items such as "I have not enough time to do all I should do". Cronbach's α for this scale was .83.

3.3 Data analysis

Before testing our hypotheses, after preliminary analysis we removed three outliers. Then, correlations between all the examined variables were computed. Subsequently, using the PROCESS Macro in SPSS (Hayes, 2013), we tested the direct relationship between transformational leadership and innovation adoption (H1), and also the influence of personal initiative (H2) and job control (H3) as moderators of that relationship. All variables were standardized before conducting the regression analyses. All statistics were computed using SPSS 25.0 for Windows.

4. RESULTS

Descriptive statistics are reported in Table 1. Averages show that transformational leadership behaviours are often showed by the direct supervisor ($M = 2.79$; $SD = 0.47$), that respondents moderately agree with items concerning their personal initiative behaviours ($M = 4.52$; $SD = 0.90$) and job control ($M = 4.11$; $SD = 0.92$) and, finally, that employees' suggestions are rarely adopted within the organization ($M = 2.57$; $SD = 1.47$). Bivariate Pearson correlations show significant relationships between all the variables in this study. In particular, significant positive results are observed between transformational leadership and innovation adoption ($r = .30$, $p < .01$).

Table 1
Means, standard deviations and correlations of study variables (N = 134)

	M	SD	1	2	3	4
1. Transformational Leadership	2.79	0.47	*(.88)*			
2. Personal initiative	4.52	0.90	.33**	(.93)		
3. Job control	4.11	0.92	.42**	.58**	*(.83)*	
4. Innovation adoption	2.57	1.47	.30**	.55**	.48**	*(.96)*

Note. ** $p < .01$ level. Cronbach's alphas on the diagonal (between brackets)

To test our hypotheses, two moderation analyses were performed using the Model 1 of PROCESS Macro for SPSS. Results of these two analyses are reported in Table 2.

The first analysis, testing personal initiative as a moderator of the relationship between transformational leadership and innovative behaviours, returned a significant model ($F(3, 124) = 20.20$, $p < .001$, $R^2 = .33$). In this model, transformational leadership ($\beta = .13$; $p = .17$) does not predict significantly innovation adoption. On the contrary, personal initiative results a significant predictor of innovation adoption ($\beta = .49$; $p < .001$), while no moderating effect of personal initiative is observed.

The second analysis, testing job control as a moderator of the relationship between transformational leadership and innovation adoption, returned a significant model ($F(3, 124) = 14.34$, $p < .001$, $R^2 = .26$). As in the previous model, also in this model transformational leadership ($\beta = .14$; $p = .20$) does not predict innovation adoption. On the other side, job control ($\beta = .44$) results as a significant predictor, but the same is not true the interaction term ($\beta = -.02$; $p = .87$).

Table 2
Moderation analyses with transformational leadership as independent variable and innovation adoption as dependent variable

	Innovation adoption			Innovation adoption		
	β	*S.E.*	*Sig.*	*β*	*S.E.*	*Sig.*
Transformational Leadership (T.L.)	.13	0.10	.17	.14	0.11	.20
Personal Initiative (P.I.)	.49	0.08	.00			
T.L. x P.I.	.11	0.10	.27			
Job control (J.C.)				.44	0.08	.00
T.L. x J.C.				-.02	0.10	.87
R^2	.33			.26		
F	20.20			14.34		

In conclusion, on the basis of the reported data, H2 and H3 were only partially confirmed: although, in fact, both personal initiative and job control singularly predicted innovative behaviours, neither transformational leadership, nor its interaction with personal initiative and job control showed significant results.

5. DISCUSSION AND CONCLUSION

The purpose of this study was to clarify the role that transformational leadership style and personal initiative and job control have in determining the adoption

of employees' ideas and, more specifically, considering our sample, the adoption of nursing staff's ideas, in an Italian health context.

Our results showed a significant correlation between transformational leadership and innovative behaviours but also that this relationship is no more significant when personal initiative and job control are introduced as moderating variables. This result suggests that although scientific literature generally shows that transformational leadership usually promotes change and innovation (Bass & Riggio, 2006), this may not be the case for any organizational context; on the contrary, there may be cases in which innovations are adopted but this is not related to the direct contribution of transformational leaders or supervisors. In fact, although many studies suggest that transformational leadership predicts innovative behaviours, both at individual and group-levels, in a research, similarly conducted in a Taiwanese hospital, it was observed that transformational leadership was related to team innovation only when it was considered alone in the regression, and such effect disappeared, supporting an indirect effect, when patient safety climate and innovation climate were entered in the regression as mediators (Weng, Huang, Chen, & Chang, 2015).

Such result is also consistent with the contribution by Eisenbeiss, van Knippenberg and Boerner, who found that "transformational leadership may be instrumental in team innovation but is not sufficient to stimulate team innovation" (2008, p. 1443). All this suggests that further studies are needed, especially in health care organizations where rigid protocols have to be respected in order to secure patient health and patient safety, and leaders may try to directly orient individual developments in areas not related to creativity and innovation.

At the same time, however, this study suggests that personal initiative and work control may facilitate the adoption of innovations in hospital environment. Personal initiative and job control resulted to be both predictors of the perception that employees' ideas may be adopted, which confirms the important role these two personal-level dimensions have as drivers of entrepreneurial and wellbeing oriented behaviours (Frese & Fay, 2001; Frese & Gielnik, 2014; Martín et al., 2017; Wu et al., 2014). Future studies might investigate which type of ideas and suggestions are more often suggested and implemented in hospital wards and, in addition, which are the specific procedures through which such ideas are implemented.

This study has some limitations. Two limitations concern the self-report nature of the questionnaire and the cross-sectional design. Given the specific context and the relatively small sample, also the generalizability of results is limited. Therefore, other research, conducted with larger samples, with a longitudinal design and the adoption of more objective measures, could more clearly investigate the relationships between transformational leadership, personal initiative and job control, and adoption of nurses' suggestions.

Practical implications of this study are related especially to the presence of those micro level innovations in hospitals that can be suggested by doctors and nurses. Innovation adoption average in this study was not very high, which suggests that healthcare organizations are so complex and require so high coordination that hierarchy continues to be preferred to bottom-up suggestions (Ramanujam & Rousseau, 2006). Anyway, this study suggests that employees' and nurses' personal initiative and job control are related to the perception that suggestions are implemented. Consequently, an interesting practical implication of this study is that innovation may also be related to employees' job proactivity and job control, which are two relevant characteristics of healthcare staff performance.

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