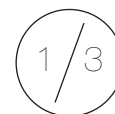


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Research



Experiences & Tools



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# Transformational leadership and turnover intention: Mediating effect of commitment to the organization and commitment to the job

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• **ABSTRACT.** L'obiettivo del presente studio trasversale è stato quello di verificare la relazione tra le strategie di leadership trasformazionale, i due tipi di impegno (quello per il lavoro e quello per l'organizzazione) e l'intenzione di un dipendente di lasciare comunque il posto di lavoro e quindi l'organizzazione stessa. Il campione era composto da 478 intervistati che svolgevano diverse professioni sia nel settore privato che in quello pubblico (168 uomini, 310 donne). I risultati dello studio hanno dimostrato che l'impegno nel lavoro non mostra un impatto significativo sull'intenzione di licenziarsi mentre quello nei confronti dell'organizzazione funge sia da fattore diretto che di mediazione nel ridurre l'intenzione di lasciare il posto di lavoro.

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• **SUMMARY.** Considering diversity of commitments to multiple targets in the organization, this cross-sectional study investigates the strength and direction of the relationships between perceived strategies of transformational leadership, two types of commitments (commitment to the organization and commitment to the job), and the intention to quit. The sample consisted of 478 respondents working in different professions in both the private and public sectors (168 male, 310 female). The findings from the structural equation mediation model reveal that commitment to the organization serves as both a direct and mediating factor in reducing the intention to quit. Conversely, commitment to the job does not exhibit a significant impact on the intention to quit, either directly or as a mediator. Consequently, the association between transformational leadership and the intention to quit is only partially mediated by commitment to the organization, while commitment to the job shows no effect on the intention to quit. These results emphasize the significance of prioritizing the unidimensional commitment model and recognizing distinctions among various commitment targets when assessing the influence of transformational leadership strategies on the attitudes of followers.

**Keywords:** Transformational leadership, Intention to quit, Commitment to organization, Commitment to job

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## INTRODUCTION

### The intention to quit and transformational leadership

The intention to quit (ITQ), generally refers to an employee's intention to move from their present employment to other employment in the near future (Nadiri & Tanova, 2010). It represents a deliberate thought process in which an individual employee evaluates their present job conditions in order to determine their continued membership in the organization they work for. Conceptual and empirical models of turnover intentions provide strong support for the proposition that behavioural intentions constitute the most immediate determinant of actual behaviour (withdrawal) (Ajzen & Fishbein, 1977). A high rate of turnover thus has a potentially negative outcome for the level of organizational productivity, customer service delivery, and an organization's profitability (Dechawatanapaisal, 2018).

Studies suggest that job abandonment is most often associated with things such as job satisfaction, organizational justice, organizational commitment, group norms, job insecurity, lack of growth opportunities, low decision-making, lack of communication, and a lack of promotion opportunities. (e.g. Dechawatanapaisal, 2018; Thurston & Glendon, 2018). Recent studies have documented the important role of transformational leadership (TL) in relation to employees' intention to leave in different industries (El Badawy & Bassiouny, 2014). Mittal (2016) explored the impact of transformational leadership on employees' intention to leave. Additionally, Amankwaa and Anku-Tsede (2015) contended that the presence of transformational leaders within an organization lowers employees' inclination to resign. Consistent with this, Sun and Wang (2017) have also highlighted that the presence of transformational leadership serves to diminish employees' intentions to quit.

The connection between transformational leadership (TL) and the inclination to leave an organization has been implicitly established through meta-analytical research, which consistently highlights the beneficial impact of TL on employee satisfaction (Procházka & Vaculík, 2015) and employee performance (Wang et al., 2011). Various studies have found that TL has an indirect influence on ITQ through perceived organizational support (Rhoades & Eisenberger, 2002), organizational justice and trust (Engelbrecht & Chamberlain, 2005).

Widely known as full-range leadership (FRL), the transformational leadership theory places an emphasis on the moral values of the followers, provoking their sensitivity to ethical problems and mobilizing their energy for reforming institutions. Within TL, leaders emphasize a higher motive development and arouse followers' motivation and positive emotions by creating and representing an inspiring vision of the future. Transformational leadership pertains to the role modeling behaviors of a leader who seeks to transform her followers' attitudes and behaviors to perform beyond expectations. Bass and Avolio (1992) identified behaviour which represent four basic components ("I's") of transformational leadership:

- Idealized influence (charisma) arouses strong emotions from followers and identification with the leader when they act as strong role models for followers;
- Individualized consideration involves providing support, encouragement, coaching delegation, advice, and feedback for use in the personal development of followers;
- Intellectual stimulation increases the awareness of problems and influences followers to be creative and innovative, and it seeks to challenge their own beliefs and values and those of their leaders and organization;
- Inspirational motivation refers to developing and communicating an appealing vision using symbols and images to focus the efforts of subordinates and modelling behaviours that are deemed appropriate.

A transformational leader promotes trust, job satisfaction, job performance, altruistic behaviour, civic virtues, civility and fairness, engagement, and innovation (Lišková & Tomaščíková, 2019). TL significantly influences followers' job satisfaction, affective commitment, and levels of burnout (Xu et al., 2021), service quality, innovation in a team (Tipu, Ryan & Fantazy, 2012). Eisenberger and colleagues (Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002) in their study found that employees' perception of supervisor support completely mediated a negative relationship between perceived organizational support and employee turnover.

### Commitment and the intention to quit

Highly committed employees have a strong desire to stay in their current organization, which reduces their turnover intention. This relationship has been documented by a number of studies, most of which rely on the Three-Component

Model (TCM) of commitment formulated by Meyer and Allen (1991); here, commitment can express a desire, need, or obligation to remain a member of an organization, which is shown in three commitment dimensions: affective (desire), continuance (need), and normative (obligation).

In particular, studies point to the direct influence of affective commitment to the organization on the intention to leave (Meyer & Allen, 1997; Stallworth, 2003). Van Steenbergen and Ellemers (2009) noted that there was a difference between the intention to leave an organization, which was most closely related to affective commitment, and actually leaving, whose only predictor was continuous commitment. They explain this finding by the fact that the intention to leave is primarily related to one's emotions towards an organization, whereas an individual primarily takes into consideration real losses and available alternatives when they are actually leaving. Examining actual employee turnover, Griffeth et al. (2000) documented that organizational commitment was found to explain 20% of the variance in actual employee turnover. In their meta-analysis, Meyer and colleagues (Meyer, Stanley, Herscovitch & Topolnytsky, 2002) reported correlations of affective, normative, and continuance commitment with withdrawal cognitions and actual turnover. As expected, they reported the strongest correlations between withdrawal cognitions and affective commitment ( $\rho = -.56$ ) followed by normative ( $\rho = -.33$ ) and continuance ( $\rho = -.18$ ) commitment. Commitment to the organization in the position of its affective component demonstrates a direct effect on the intention to leave one's job, and it also acts as a mediator of studied relationships with turnover (Renaud, Morin & Béchar, 2017). Three foci of affective commitment (organization, team, and supervisor) have been confirmed in a study by Holzwarth and colleagues (Holzwarth, Gunnesch-Luca, Soucek & Moser, 2021) as significant mediators between perceived organizational communication and turnover intention.

Studies based on TCM confirm, that affective commitment exhibits the strongest relationships and is the most significant predictor of work behaviours such as staying at work, intending to leave or quitting (Harris & Cameron, 2005; Vandenberghe & Bentein, 2009; Zhu, Wang & Jiang, 2022), absenteeism (Hausknecht, Hiller & Vance, 2008), performance (Luchak & Gellatly, 2007) and OCB (Cetin, Gürbüz & Sert, 2015); consequently, numerous authors suggest that it should be regarded as the primary and fundamental representative of the attitudinal concept

of commitment (Mercurio, 2015; Solinger, Van Olffen & Roe, 2008). Despite its dominant position in research, TCM has been subjected to critical evaluation due to the unclear distinction between affective, cognitive, and behavioral aspects as well as due to the wording of TCM questionnaire items that directly contain behavioral readiness (e.g., intention to leave) (Jaros, 2007; Solinger et al., 2008). Klein, Molloy and Brinsfield (2012), however, came up with a more fundamental notion of commitment reconceptualization. They sought to conceptually purify commitment and do away with any overlap and confusion with other types of workplace bonds (e.g., acquiescence, instrumental, identification). They understand commitment to be a specific type of bond that is characterized by (1) volition, (2) dedication, and (3) responsibility. Commitment is a conscious state of mind that is socially constructed and that dynamically changes over time. In contrast to Meyer and Allen's TCM, Klein et al. (2012) see commitment as unidimensional, universal, and suitable for different entities; social entities (organizations or teams), people (co-workers or leaders), or goals (careers or roles). Klein and colleagues (Klein, Cooper, Molly & Swanson, 2014) pointed out that their unidimensional construct of commitment to an organization as measured by the KUT target-free scale in a validation study showed a negative relationship with the intention to leave ( $r = -.43$ ).

Commitments to workplace entities other than the organization itself and the implications for employee behaviour have not been explored to the same extent. Snape and Redman (2003) found a negative association between affective occupational commitment and occupational withdrawal cognitions. Landry, Panaccio and Vandenberghe (2010) examined employees' commitment to supervisors from the point of view of Meyer and Allen's three-component commitment model; their regression analysis showed that affective commitment to the supervisor is a better predictor of the studied consequences than other forms of supervisory commitment (both normative and continuance). Vandenberghe and Bentein (2009) found stronger links between commitment to supervisor and turnover intention in the case of employees with a lower organizational commitment.

Podsakoff, Lepine and Lepine (2007) examined the mediating role of organizational commitment between two types of stressors and the intention to leave. They found that hindrance stressors have a negative relationship with organizational commitment, which acts as a mediator



between the stressor and the intention to leave. Conversely, challenge stressors are positively related to organizational commitment, which further mediates the impact on the intention to leave in a negative direction. The relationships between turnover intentions and the commitment to different entities are more elevated than with actual turnover (Cooper-Hakim & Viswesvaran, 2005; Klein et al., 2014; Meyer et al., 2002; Vandenberghe & Bentein, 2009).

## THE CURRENT STUDY

Organizations are increasingly taking an interest in how to retain their staff and optimize leadership and commitment practices to maximize organizational outcomes. This leads organizations to find ways to understand and manage the psychological mechanisms that keep their employees highly committed and engaged in their jobs and to prevent them from intending to leave the company. The present study intends to empirically explore the strength and direction of the relationships between perceived strategies of transformational leadership as independent variable, two types of commitment (commitment to the organization and commitment to job) as mediators, and the intention to quit as dependent variable.

Accumulating evidence suggests that transformational leadership is positively related to follower job attitudes and behaviour. Walumbwa et al. (2004) document positive connections between transformational leadership and organizational commitment and job satisfaction, and negative relations between job and work withdrawal. In their research on transformational leadership, Avolio and colleagues (Avolio, Zhu, Koh & Bhatia, 2004) found that inspirational leader behavior affects organizational commitment. Lim, Loo and Lee (2017) reveal an insignificant negative relationship between transformational leadership and turnover intention, and indirect influence of transformational leadership on turnover intention through mediating role of job satisfaction. Negative effects of organizational commitment on intention to leave the company have been also very well documented (e.g., Sokmen & Ekmeckcioglu, 2016; Vandenberghe & Bentein, 2009; Zhu et al., 2022). Only a small number of studies reflect commitment to job and its connection with leadership style and work outcomes, intention to quit including. Relationships between leadership style and commitment to job we can partially support by results of Purba and colleagues

(Purba, Oostrom, Born & Van Der Molen, 2016) who examined the mediating effect of on-the-job embeddedness on the relationship between trust in a supervisor and turnover intention. Their results revealed that supervisor's trustworthiness (important facet of transformational leadership) positively affects job embeddedness, and job embeddedness negatively correlates with turnover intention. Testing predictive efficacy of commitment to different foci (Cooper, Stanley, Howard, Klein & Tenhiälä, 2016) showed that high commitment to profession, organization and job was associated with significantly higher positive work behaviours and work effort and lower turnover intention. Based on the above positions, our study is an attempt to analyse the relationship between transformational leadership and intention to quit with commitment to the organization and commitment to job as the mediators. The intention to explore the mediating role of commitments to both job and the organization stems from Furnham's (1990) perspective, which delineates two primary commitment categories. The first pertains to commitments influencing work attitudes, such as those tied to career, occupation, and work ethics, with a lesser association to the organization. The second category encompasses commitment to the organization. Both commitments to job and the organization are deemed significant, interrelated factors that exert influence on global attitudes like job satisfaction and intentions to stay or leave. Employees who derive satisfaction from their roles tend to exhibit heightened dedication and longevity with their employers compared to those who do not.

A lot of research focused on variables contributing to the intention to quit and turnover has been conducted in a frame of the Meyer and Allen's model of organization commitment (Meyer et al., 2002; Mowday, Porter & Steers, 2013), dual commitment to organization and to job (Morin, Meyer, McInerney, Marsh & Ganotice, 2015), and profiles of commitments to several targets from person-centred perspective (Cooper et al. 2016; Morin, Morizot, Boudrias & Madore, 2011). Our study is to our knowledge unique in combining two kinds of commitment (organization, job) aiming at the possibility to open new way of research regarding number and nature of different commitments combination explaining larger portion of effect of transformational leadership on intention to quit. In contrast to the previously mentioned studies, which were based on the TCM, our approach to studying commitment is grounded in Klein et al.'s (2012) unidimensional model. We expected that commitment

to organization and commitment to job would emerge as a significant mediator of transformational leadership and turnover intention, and that transformational leadership and the abovementioned commitments would attenuate behavioural intentions to leave a company. It is assumed that a better understanding of these interrelationships will enable researchers to explain the influence of these constructs on one another and present useful outcomes to help organizations in sustaining performance and competitiveness through effective retention. The verification of the mediating effect of two unidimensional commitments on the relationships between transformational leadership and the intention to quit would indicate the importance of developing more specific interventions aimed at turnover prevention.

## METHOD

### Participants and procedure

The sample consisted of 478 respondents working in different professions, various organizations in both the private and public sectors. The inclusive criterion for including respondents in the research was working for the organization on a full-time basis, either on an indefinite or fixed-term contract. 168 (35.1%) of participants were male and 310 (64.9%) were female; 225 (47.2%) were single, 213 (44.5%) were married, and 40 (8.5%) indicated they were divorced or other. The age range was from 19 to 70 years, with the average age being 37.2 ( $SD = 11.75$ ). One hundred and twenty-three people had their highest completed education level at high school (25.6%), 11.5% (55 people) had a bachelor's degree, and 62.3% (300 people) had a master's degree. The minimum tenure was .5 years, the maximum was 42 years, and the average tenure was 8.44 ( $SD = 9.5$ ) years. Two hundred and forty respondents (50.2%) worked in private sector organizations and 238 (49.8%) worked in public sector organizations. 351 (73.4%) respondents had fixed-term employment contracts and 127 (26.6%) had employment contracts for an indefinite period.

A cross-sectional survey was conducted using an online platform ([doc.google.com/forms](https://docs.google.com/forms)) available from February to March 2022. We utilized our networks to share and disseminate the survey via social media platforms such as Facebook, Instagram, and LinkedIn. A standardized general description of the research was provided in emails and

messaging/social media posts. Participants were requested to read the instructions and provide informed consent. They were informed that their participation in this study is voluntary, not mandatory, and they could withdraw at any time and for any reason. Additionally, participants were assured that all collected data would remain anonymous and solely be used for research purposes.

## Measures

All measures used in this study were translated into Slovak by at least one native speaker and one psychologist. The correctness of the scales for the Slovak versions was evaluated by using a back translation.

– *Multifactor Leadership Questionnaire, Form 6-S*. The 12 items *Multifactor Leadership Questionnaire, Form 6-S (MLQ-6S)* (Vinger & Cilliers, 2006) was used to measure four transformational strategies – idealized influence, individualized consideration, intellectual stimulation, and inspirational motivation. Previous research (e.g. Mittal, 2016; Sun & Wang, 2017) has demonstrated that leadership style, particularly transformational leadership, serves as an effective predictor of outcomes such as employee intention to quit. This provides a robust basis for concentrating on these specific items in our study. Utilizing a focused set of items facilitates a clearer and more precise measurement, specifically addressing the factors most likely to influence employee attitudes, particularly the intention to quit, and makes it easier to draw meaningful conclusions about the relationship between transformational leadership and the intention to quit. Sample items include “My supervisor makes me proud by associating with me” (idealized influence); “My supervisor articulates a compelling vision of the future” (inspirational motivation); “My supervisor seeks differing perspectives when solving problems” (intellectual stimulation); and “My supervisor treats me as an individual rather than just a member of a group” (individual consideration). Respondents were asked to judge how frequently each statement matched their direct manager or supervisor using a five-point scale (1 = not at all to 5 = frequently, if not always). We modified the wording of the items so that the respondents were asked to report the extent to which they perceived their formal direct supervisor as transformational. Similar item adjustments have been used in other studies (e.g. Frieder, Wang & Oh,

- 2018). The reliability of the scale is reported in Table 1.
- Klein et al.'s *Unidimensional Target-free Measure*. The KUT scale was created by Klein et al. (2014). This tool originally consists of four questions that are answered using a five-point scale (1 = not at all to 5 = extremely). The Czech adaptation provided evidence of the KUT scale's robustness regarding internal consistency as well as content, factor, convergent, discriminant, and incremental validity (Procházka, Židlická, Cígler, Vaculík & Klein, 2019). Based on the proximity of the Czech and Slovak cultural contexts, this validation study can be relied upon in the present research. For the purposes of the present research, the items were edited so that respondents could express their commitment to two targets: commitment to organization (CO), item example: "How committed are you to your organization?" and commitment to job (CJ), item example: "To what extent do you care about your job?" Depending on the commitment target, Klein et al. (2014) report a reliability of .86-.97 for their scales, we obtained similarly high values (see Table 1).
  - *Intention to quit*. The ITQ measure was applied according to Wayne, Shore and Liden (1997). This tool originally

contains five items that express the intention to leave (e.g., "As soon as I will be able to find a better job, I will leave this organization") and they are measured on a scale from 1 to 7 (1 = totally disagree to 7 = totally agree). The items were translated from English into Slovak and their accuracy was verified by a back translation. The value of the Cronbach's alpha of the original scale was .89; we report reliability measures of ITQ in our sample in the Table 1.

## The statistical procedure

The data were analysed in Jamovi (2022) using the lavaan (Rosseel, 2012) R package. In the first step, we estimated the measurement model representing each questionnaire (commitment to organization; commitment to job; MLQ; ITQ) by confirmatory factor analyses, allowing for covariances among latent factors. We had no intention to explore differences among transformational leadership facets, therefore for the MLQ questionnaire, we utilized the overall MLQ transformational (one-factorial) model. Measurement model was evaluated by a goodness-of-fit test statistic ( $\chi^2$ ), Comparative Fit Index ( $CFI \geq .90$ ), Tucker-Lewis

**Table 1** – Summary statistics and reliability coefficients

Measure	<i>M</i>	<i>SD</i>	MIN	MAX	Cronbach's $\alpha$	McDonald's $\omega$
CO	14.70	3.31	4	20	.813	.832
CJ	16.66	3.24	4	20	.882	.890
MLQtransf	38.75	11.91	12	60	.946	.946
ITQ	11.60	6.98	4	28	.931	.934

*Legenda.* CO = commitment to organization; CJ = commitment to job; MLQtransf = transformational leadership; ITQ = intention to quit.

*Note.* The statistics were calculated from raw scores of respective questionnaires.



Index ( $TLI \geq .90$ ), Root Mean Square Error of Approximation ( $RMSEA \leq .08$ ), and Standardized Root Mean Residuals ( $SRMR \leq .08$ ) fit indices (Hu & Bentler, 1999). In the second step, the latent factors from the previous CFA were used to specify the structural equation model (SEM) of the hypothesized direct and indirect effects. All effects were estimated by percentile bootstrap with 1000 repetitions. For direct effects, we regressed the ITQ (dependent variable) onto MLQ transformational as well as onto CO and CJ respectively, allowing a covariance between the mediators. The CO and CJ variables were included as variables mediating the respective effects of overall MLQ on ITQ. The standard errors of the direct and indirect effects were approximated from 1000 bootstrapped samples.

## RESULTS

### Measurement models

We used an initial CFA model to examine relationships between latent variables and their measures and to estimate the validity and independence of CO, CJ, ITQ, and transformational leadership (MLQ), as the collection of these measured constructs derived exclusively from employees. The results of the analysis suggest that the constructs were independent, as the model specifying separate factors provides an adequate fit ( $\chi^2_{(747)} = 246$ ,  $p < .05$ ; CFI = .942; TLI = .935; RMSEA = .065; SRMR = .046). Moreover, Harman's test attributed only 33.764% of the variance to a single factor, and the estimated standard correlations between the latent measures assessed using Pearson correlations also supported the existence of independent factors (all  $p < .001$ , and all absolute values of  $r < .55$ ). The estimated measurement model (see Figure 1) showed a good and reliable approximation of the data with all fit indices within recommended levels (Hu & Bentler, 1999).

The only problem we had to address was the low standardized factor loadings of two items. Item KUT14 (from the CO scale), we decided to retain despite its  $\beta = .51$ . However, according to the criteria proposed by Cheung and colleagues (Cheung, Cooper-Thomas, Lau & Wang, 2023) or Hair and colleagues (Hair, Black, Babin & Anderson, 2009), it is on the border of acceptability. On the contrary, according to the same criteria, we had to unequivocally exclude item ITQ5 (from the ITQ scale), whose  $\beta = .38$ . This implies that

the latent factor does not explain even 15% of its variance, which is clearly less than the required 25%. The loadings of all other variables, as well as their internal consistencies (see Table 1), were satisfactory. In the case of MLQ, measurement model working with transformational leadership as a unidimensional construct resembled a very good fit with robust factor loadings (all  $p < .001$  and all  $\beta \geq .63$ ) and internal consistency (see Table 1), the MLQtransf overall score can be considered a reliable measure.

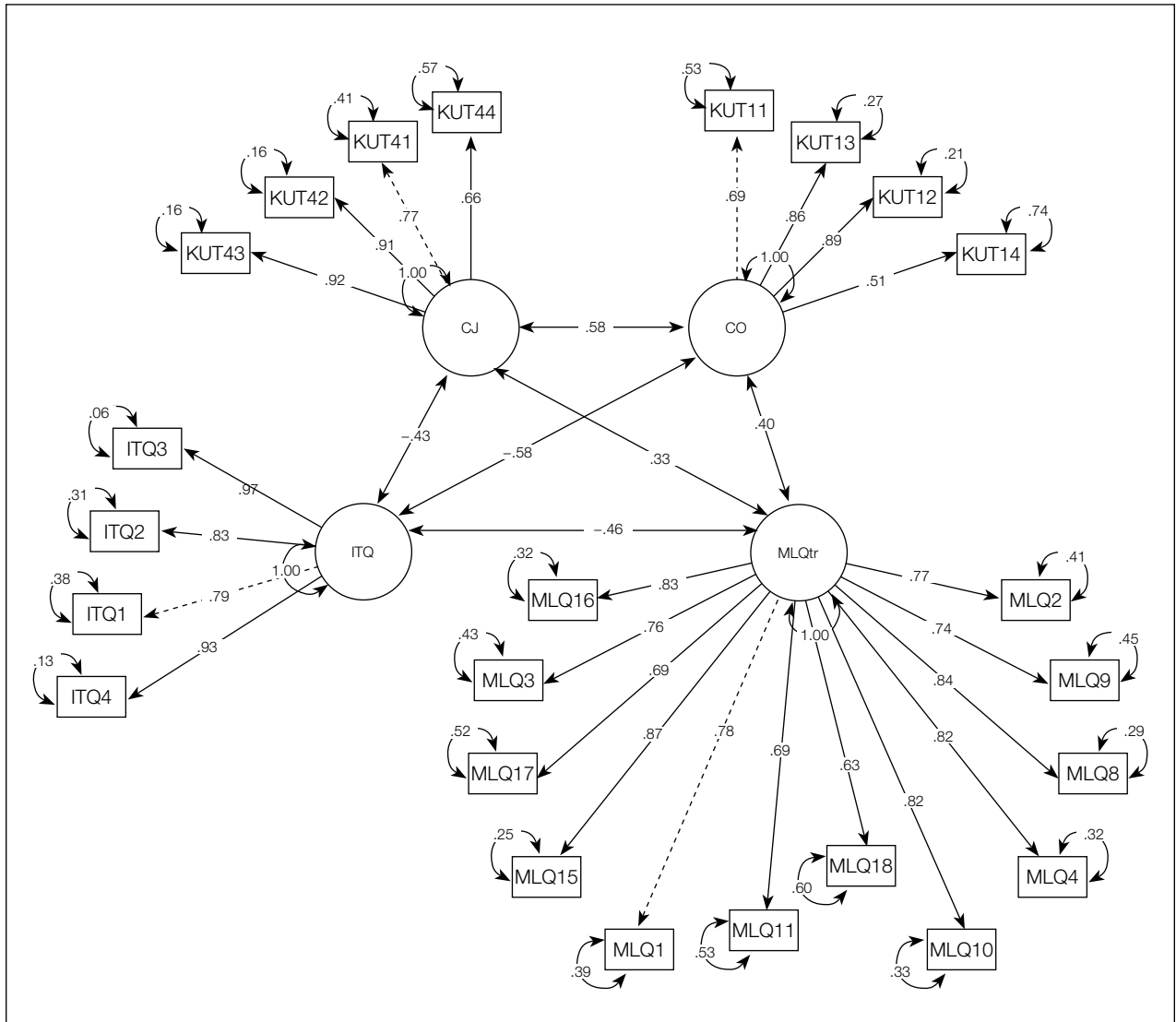
### Structural equation mediation models

Table 1 provides summary statistics and reliability coefficients for the variables included in the mediation models. The prerequisite relationships between the latent measures were assessed using Pearson correlations (all  $p < .001$ , and all absolute values of  $r < .55$ ).

In the model, we specified the direct effects from MLQ on the ITQ and the indirect effects as a product of the mediators CO and CJ with the overall MLQ in total sample (see Figure 2).

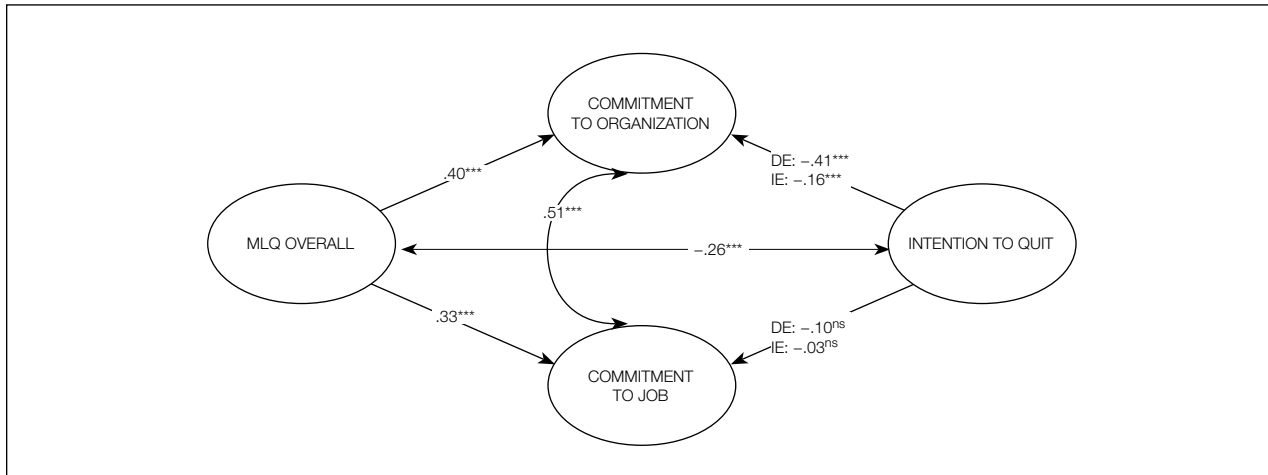
The model indicates that transformational leadership directly significantly enhances both organizational commitment ( $\beta = .397$ ;  $p < .001$ ), CI [.250, .421] and job commitment ( $\beta = .335$ ;  $p < .001$ ), CI [.180, .374] while also significantly decreasing the intention to leave the organization ( $\beta = -.264$ ;  $p < .001$ ), CI [-.537, -.262]. The direct effect of CO on ITQ is statistically significant as well ( $\beta = -.413$ ;  $p < .001$ ), CI [-.966, -.498], however the direct effect of CJ on ITQ does not reach statistical significance ( $\beta = -.102$ ;  $p = .060$ ), CI [-.391, -.863e-4]. The mediators shared a small portion of common variance. Importantly, however, only CO was found to mediate a significant negative indirect effect of transformational leadership on ITQ ( $\beta = -.164$ ;  $p < .001$ ), CI [-.342, -.151], whereas CJ did not show the any significant indirect effects ( $\beta = -.034$ ;  $p = .066$ ), CI [-.107, .00]. Thus, according to these results, ITQ is negatively affected by both MLQtransf and CO variables directly while the direct effect of CO on ITQ is clearly the strongest of all observed effects, and indirectly in the configuration in which MLQ acts as a predictor and CO as a mediator. The CJ variable has no significant effect on ITQ, either directly or indirectly. Direct effect of MLQ transformational on CO, CJ and ITQ and of CO and CJ on ITQ and indirect effects of MLQ transformational on ITQ mediated by CO and CJ respectively are displayed in Table 2.

**Figure 1** – Factor loadings and residual variances



Note. Factor loadings and residual variances for commitment to organization (CO) and commitment to job (CJ) both as measured by KUT, intention to quit (ITQ), and transformational leadership (MLQtr) as measured by MLQ instrument items. Beta coefficients are displayed; all factor loadings and covariances were significant at  $p < .001$ .

**Figure 2** – Path diagram of structural equation mediation model



Note. Direct effect (DE) and indirect (IE) (mediated) effect (IE) in total sample. Standardized estimates are shown. Exact values for DE and IE are presented in Table 2 and approximated from 1000 bootstrapped samples.

\*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , <sup>ns</sup> non-significant

**Table 2** – Summary of direct and undirect effects

Direct effects		95% Confidence intervals							
Dep	Pred	Estimate	SE	Lower	Upper	$\beta$	$z$	$p$	
CO	MLQtransf	.334	.0441	.250	.421	.397	7.58	<.001	
CJ	MLQtransf	.276	.0487	.180	.374	.335	5.67	<.001	
ITQ	MLQtransf	-.391	.0715	-.537	-.262	-.264	-5.47	<.001	
ITQ	CO	-.725	.1236	-.966	-.498	-.413	-5.87	<.001	
ITQ	CJ	-.183	.0977	-.391	-8.63e-4	-.102	-1.88	.060	
Indirect effects									
Dep	Pred $\Rightarrow$ Med	Estimate	SE	Lower	Upper	$\beta$	$z$	$p$	
ITQ	MLQtransf $\Rightarrow$ CO	-.242	.049	-.342	-.151	-.164	-4.951	<.001	
ITQ	MLQtransf $\Rightarrow$ CJ	-.051	.028	-.107	-.000	-.034	-1.839	.066	

Legenda. Dep = dependent variable; Pred = predictor; SE = standard error; MLQtransf = transformational leadership; CO = commitment to organization; CJ = commitment to job; ITQ = intention to quit.  $p$ -values are approximated from 1000 bootstrapped sample

## DISCUSSION

The voluntary departure of high-performing employees diminishes the effectiveness of organizations. Therefore, it is crucial to comprehend the processes that underlie such decisions to leave. Significant research within the field of organizational commitment or commitment to other entities has been rooted in Meyer and Allen's TCM model. This model emphasizes the pivotal role of the affective dimension of commitment in predicting work-related behaviors and attitudes, including thoughts about turnover (Allen, Evans & White, 2011; Luchak & Gellatly, 2007; Meyer et al., 2002). Holzwarth et al. (2021) examined the effect of perceived organizational communication (both vertical and horizontal) via commitment to different foci on turnover intentions. These studies confirmed importance of the bond to organization when considering leaving it. Unlike the earlier studies, which relied on the Targeted Commitment Model (TCM), our approach to investigating commitment is rooted in Klein et al.'s (2012) unidimensional framework. In 2014, Klein and their colleagues introduced a novel survey called the KUT (Klein Unidimensional Target). Unlike conventional evaluations that encompass a wide range of workplace affiliations and connections, the KUT is specifically crafted to gauge commitment as a distinct, isolated concept, untouched by other closely related workplace attitudes such as identification and satisfaction. The goal of the present study was to verify how perceived leadership behaviours are associated with followers' commitment focusing on a discrete and novel form of unidimensional commitment (commitment to job and commitment to organization) and an employee's intention to leave an organization. The obtained results partially supported our expectations, providing evidence that the positive relationship between transformational leadership and commitment to organization contributes to respondents' decisions to leave an organization. Such a result is expected, given that transformational leaders are able to empower staff and provide a positive work climate, thus leading to higher levels of commitment and a lower degree of turnover intention (Labrague, Nwafor & Tsaras, 2020). Structured mentorship, support, feedback, the availability of professional advancement, positive relationships, and leaders as a role model for followers were all essential aspects of TL which impacted employees' decisions to remain committed, enhancing the direct role of TL in reducing followers' turnover intentions. Involving employees in decision-making within an

organization strengthens overall organizational effectiveness and the retention process as well (Boamah, Spence Laschinger, Wong & Clarke, 2018). TL has been found to be associated with turnover intention in a study by Dupré and Day (2007), who found that factors associated with the supportive management of personnel are indirectly related to turnover intention through the mediating influence of job satisfaction. Alexandrov, Babakus and Yavas (2007) demonstrated that employees' perceptions of management's concern for both employees and customers have a significant effect on turnover intention. Albrecht (2006) has argued that turnover intention is influenced by employees' trust of management. Similar results have been documented internationally, such as in a systematic review by Cummings et al. (2018) that linked relational leadership styles, including transformational leadership, to better nursing workforce outcomes and overall organizational effectiveness. Our findings are consistent with the authors mentioned earlier, who similarly found that commitment to the organization serves as a partial mediator in the association between transformational leadership and the intention to leave a company. In essence, this implies that when followers perceive their leader as transformational, inspirational, and supportive, it not only increases their commitment to the organization but also augments their likelihood of remaining with the company. Crucially, it's worth noting that only commitment to organization was identified as a mediator with a significant negative indirect impact on ITQ resulting from transformational leadership, while commitment to job did not exhibit the anticipated effects, as illustrated in Figure 2.

The finding of a greater strength of commitment to an organization as both a direct and indirect predictor of considering leaving supports Klein et al.'s (2014) idea that employees reliably distinguish between their commitment to different entities at work and assign different meanings to them. A relevant explanation for the differing patterns of commitment to organization (CO) and commitment to job (CJ) in predicting or moderating the intention to leave is provided in Cheng, Jiang and Riley's study (2003). The study highlights that commitment to the organization and intention to leave share the same object, whereas commitment to work may not be directly linked to the organization. "According to Ajzen (1989), the principle of compatibility suggests that the relationship between a given attitude and other attitudes or behaviors is based on them having the same targets" (Cheng et al., 2003, p. 314). Cheng

et al. (2003) argue that commitment to the organization is a global concept and is more suitable for predicting outcomes relevant to the organization, such as intention to leave (global hypothesis). A positive perception of the organization can significantly impact an employee's intention to stay. While job commitment is important, its impact on retention may not be as broad as that of organizational commitment.

Ultimately, the distinct impact of commitments to these two entities on withdrawal cognitions serves as the most compelling confirmation of this notion. Similar conclusions can be identified in a study by Lee, Carswell and Allen (2000), where the finding was that occupational commitment is less strongly related to organizational turnover variables than affective organizational commitment. Our results suggest that being less committed to an organization has a greater impact on turnover intention than binding with one's job. These results therefore contradict the conventional myth that employees who are committed to their job will be loyal to the company.

In line with Rossenberg et al. (2022), we argue that on one hand, we might anticipate that commitment, as measured by the KUT, may exhibit weaker associations with certain outcomes when compared to the TCM's measure of affective commitment due to the reduced conceptual overlap. On the other hand, the heightened conceptual clarity provided by the KUT allows us to attribute the effects observed to commitment with greater confidence, rather than other types of workplace bonds.

A key contribution of this study is that, in addition to replicating previous findings linking leadership with organizational commitment (e.g., Meyer & Allen, 1997), it examined a new specific concept of commitment to job and commitment to organization in the framework of Klein's (2012, 2014) concept of unidimensional commitment. This extension strengthens the inferences about these modes of commitment and transformational leadership strategies and their effect on followers' attitudes; it also provides wider support for the ability to generalize the theoretical model presented in the current study.

## Practical implications

Based on these presented findings, developing transformational leadership practices can be incorporated into organizational initiatives to promote employees'

commitment and retention. Education, training, and professional development are some of the key strategies to enhance TL. This study supports the formulation of evidence-based educational programmes, leadership training, and interventions to foster desirable leadership practices in managers. Search and selection committees tasked with recruiting qualified candidates for leading positions may consider using a leadership assessment tool to screen and detect unfit profiles and to attract leaders who can support organizational goals, strategies, and development.

New leaders may also benefit from mentoring and coaching from experienced leaders. Clear guidelines that outline behaviour expectation (including in leadership) for all employees should be the norm in every organization. Our findings suggest that commitment to organizations is still an important component of organizational policy and can influence turnover cognitions. On the other hand, it is important to distinguish between organizations and other possible targets in the work context by using the target-free model/scale. Rossenberg et al. (2022) emphasize the importance of the commitment concept in HRM research and practice. They also criticize the fact that only two out of 209 HRM articles (investigated up to July 2021) adopt the commitment concept in the sense of Klein's definition, which is a narrower and clearer understanding of the bonds to work objects, as opposed to the more commonly used TCM (Three-Component Model).

## Limitations

Several limitations in this study should be noted. The dependent variable (the intention to quit) and the independent variables (commitment to organization, commitment to job, and transformational leadership) are self-reporting measures obtained from one source (employees). It can be argued that self-reporting measures have their strengths, because incumbents in a job have the best knowledge of that job and their supervisors. Additionally, a self-reporting measure can result in a restricted range of values on a variable which attenuates the estimated relationships among variables. Another criticism of self-reporting is that it may involve a social desirability problem, which is deemed to be a typical potential source of common-method bias (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Neither Harman's test nor inspection of the correlation matrix for excessive values

of correlation coefficients detected common-method bias. Finally, most of these results are consistent with previous empirical and theoretical research. It therefore seems that common-method effects did not significantly influence study findings.

This study only focused on two potential targets of commitment. It would be useful in the future to include other objects of work commitment in such investigations (e.g. team, supervisor, and career) using the unidimensional commitment model. Another limitation of the study is the cross-sectional research design. The findings of Bentein and colleagues (Bentein, Vandenberghe, Vandenberg & Stinglhamber, 2005) highlighted the importance of detecting change in commitment degree across time; the decline in an individual's level in commitment across time was associated with an increase in that individual's intention to quit the organization. We acknowledge the limitations of cross-sectional studies in verifying mediation models. In the future, we deem it imperative to conduct longitudinal research to substantiate the impact of the independent variable (transformational leadership) and the mediators (commitments) on the dependent variable (intention to leave),

as recommended by numerous researchers (Baron & Kenny, 1986; MacKinnon, Lockwood, Hoffman, West & Sheets, 2002). Maxwell, Cole and Mitchell (2011) emphasizes a related limitation of cross-sectional designs in the study of mediation: a specific pattern of cross-sectional correlations can result from various combinations of underlying longitudinal parameters. A key takeaway from their research is that the substantial bias frequently observed in cross-sectional mediation analyses can make p-values or confidence intervals calculated from such data lose their essential meaning. In the context of mediation, it's crucial to remember that they inherently address matters of causation. Additionally, cross-sectional correlations that appear to support full mediation may actually reflect a longitudinal process devoid of any mediation (Maxwell et al., 2011). A longitudinal study could bring a deeper understanding of the turnover context. Indeed, the importance of time in predicting the intention to stay through organizational affective commitment was recently stressed by Renaud et al. (2017).

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# Relationship of job crafting with job outcomes among frontline customer service employees: Moderating role of dysfunctional customer behavior

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• **ABSTRACT.** Questa ricerca si propone di presentare l'effetto moderatore del comportamento disfunzionale dei clienti sulla relazione tra job crafting e risultati lavorativi (soddisfazione lavorativa, stress lavorativo e lavoro emotivo) alla luce della teoria della conservazione delle risorse. Lo studio trasversale è stato condotto su 440 dipendenti del servizio clienti (345 uomini e 94 donne) che prestano servizio nei centri commerciali situati a Islamabad e Rawalpindi, in Pakistan. Questo studio conclude che il comportamento disfunzionale dei clienti è motivo di preoccupazione perché influisce sui risultati lavorativi dei dipendenti: le organizzazioni dovrebbero responsabilizzare i dipendenti formandoli per migliorare le loro risorse.

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• **SUMMARY.** *Dysfunctional customer behavior is a cause of concern due to its short and long-term impact on both employees as well as organizations. This paper aims to present the moderating effect of dysfunctional customer behavior on the relationship between job crafting and job outcomes (job satisfaction, job stress, and emotional labor) in light of the conservation of resource theory. This cross-sectional study was comprised of 440 frontline customer service employees (345 males and 94 females) serving in shopping malls located in Islamabad and Rawalpindi, Pakistan. Results indicated a negative relationship of job crafting with job stress and a positive relationship with job satisfaction. Moreover, a positive relationship of dysfunctional customer behavior was found with job stress and emotional labor, and a negative relationship with job satisfaction was also found. Furthermore, it was found that dysfunctional customer behavior moderated the relationship of job crafting with job stress and emotional labor, but it didn't moderate the relationship of job crafting with job satisfaction. This study concludes that dysfunctional customer behavior is a cause of concern as it impacts the job outcomes of employees. Organizations should empower employees by training them to enhance their resources. Future studies may check for mediational pathways to enrich this finding.*

**Keywords:** *Dysfunctional customer behavior, Job crafting, Job outcomes, Conservation of resource theory, Frontline customer service employees*

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## INTRODUCTION

In any service setting, frontline customer service employees (FLCSEs) play a key role in customer satisfaction. Frontline service work (FLSW), which refers to the work in a subservient position, involves FLCSE's direct contact with a customer or recipient of a service, in which he/she is expected to focus on customer's satisfaction and well-being, (Subramony, Groth, Hu & Wu, 2021) along with managing workplace tensions to meet the goals specified by the management (Bélanger & Edwards, 2013). Notions like customer-first strategy and customer centrism, are widely adopted by individuals, businesses, and society, which keep prime focus on customers during service encounters (Bi, Choi, Yin & Kim, 2021). This creates an illusion (of social inequality) that employees have secondary importance (Hu & King, 2017), emitting a signal of superiority among customers, which also compels employees to perceive themselves as inferior since their job is to fulfill customers' needs (Kashif & Zarkada, 2015). This broadened gap makes the customers feel licensed to bargain with the employees (Bélanger & Edwards, 2013), be reluctant to stand in a queue or behave politely, in case of delayed services (Kashif, Braganca, Awang & De Run, 2017), and get involved in verbal abuse (even in physical abuse), thinking of them as inferior (Kashif & Zarkada, 2015). Dysfunctional customer behavior (DCB) is frequently seen (Harris & Daunt, 2013) to negatively impact employees, organizations, and other customers as well (Harris & Reynolds, 2003).

This paper aims to study the phenomenon of DCB in Pakistan. Having conservation of resource (COR) theory as the theoretical underpinning of our research framework, we assume that DCB acts as a stressor that impacts the relationship between personal resource (job crafting) and job outcomes (job stress, job satisfaction, and emotional labor) among FLCSEs in shopping malls. In Pakistan, limited findings exist in this realm with focus on service sectors such as beauty salons and transport industry (Nawaz et al., 2020), clothing retail outlet (Nawaz & Khan, 2020), banks (Kashif & Zarkada, 2015), cafés and coffee shops (Ahmed, Islam, Ahmad & Kaleem, 2021), hospitality industry (Raza, St-Onge & Ali, 2021), restaurant industry (Baig, Kamran & Malik, 2022), and in malls and shopping centers (Ali & Sajjad, 2018). Through this research, we have tried to bring attention to the occurrence of this behavior in shopping malls. No matter in which setting they work, FLCSEs face several challenges

that lead to many negative outcomes. DCB, being one of the biggest challenges, holds enough potential for further exploration.

## Dysfunctional customer behavior

In the past, several terms such as consumer misbehavior (Fullerton & Punj, 2004), customer unfairness (Berry & Seiders, 2008), jay-customer behavior, coined by Christopher Lovelock (Harris & Reynolds, 2003), deviant consumer behavior (Mills & Bonoma, 1979) and customer badness behavior (Yi & Gong, 2006) have been used to refer to this concept. The term DCB refers to certain actions by customers in service settings that violate general norms of conduct (Daunt & Harris, 2012; Kang & Gong, 2019), and may intentionally or unintentionally, overtly or covertly, disturb the functional service encounters (Harris & Reynolds, 2003). Kang and Gong (2019) conceptualized it in three dimensions. First is verbal abuse, which refers to communication of anger (Grandey, Dickter & Sin, 2004) such as impolite language or yelling to humiliate the employees (Bi et al., 2021), which brings discomfort and hurts them because of disrespectful, devaluing, impatient, and rude verbal expressions (Li & Zhou, 2013). It may be observed during face-to-face, telephonic, or even virtual customer-employee interactions (Berry & Seiders, 2008). Second is disproportionate demands which come with an uneven power relationship whereby the customer puts forward excessive demands that the employees find difficult to meet (Kang & Gong, 2019), and is also reflected in the customer's belief in his authority to bargain with the supplier (Bélanger & Edwards, 2013). The third is illegitimate complaints (occur in rare circumstances) which refers to complaints that are made at any time for any reason in an attempt to attain the desired outcomes, unlike legitimate complaints which are functional (i.e. legitimate expressions of dissatisfaction) (Kang & Gong, 2019).

As Harris and Reynolds (2003) cite, factors that predominantly result in DCB by customers as per Fullerton and Punj's model (1993) include psychological factors (e.g., personality characteristics, moral development, gratification of aspirations, and thrill-seeking desires, etc.), demographic factors (e.g., age, gender, qualification, and financial standing etc.), and contextual factors (e.g., physical surroundings, range types of products/services offered, associated risks as well as the public image etc.). As explained by the power



perspective (Mills & Bonoma, 1979), a customer's perception of a store's comparative power also determines DCB (Harris & Reynolds, 2003) and customer dissatisfaction is also a contributor (Harris & Reynolds, 2003). Three motive-based misbehaving customers are clustered as financial egoists, money grabbers, and ego revengers (Daunt & Harris, 2012).

Various findings have pointed out severe negative impacts of DCB in the form of emotional exhaustion (leading to employee withdrawal) (Kang & Gong, 2019), long-term psychological impact (sustained feelings of degradation and stress disorders), short-term emotional effects (emotional distress, feigned emotional response to mollify aggressive customers), behavioral effects, and in rare cases physical effects (Harris & Reynolds, 2003). The relationship between DCB-job stress-job satisfaction has also been pointed out (Bi et al., 2021). It is also a source of irritation, rage, remorse, worry, and depression among employees (Harris & Daunt, 2013). Moreover, it has also been found to affect cognitive performance (causing reduced task performance), recalling ability, working memory (Rafaeli et al., 2012), employee's capacity to satisfy customers (Al-Hawari, Bani-Melhem & Quratulain, 2020), and job performance along with job satisfaction (Chen, Kang, Wang & Zhou, 2021). Frequency of customer aggression was also found to significantly predict job-induced tension (Goussinsky, 2011). It is also notable that, in rare (non-injurious occasions), it draws a positive impact on teamwork (Harris & Reynolds, 2003); however, it is also associated with employee well-being (burnout), which further leads to employee incivility with customers as well (Nawaz et al., 2020).

## Job crafting

First devised by Wrzesniewski and Dutton (2001), the term job crafting is characterized as an informal process, whereby employees play an active role in designing their work practice by initiating cognitive, physical, or social changes to align it with their individualistic interests and standards (Slemp & Vella-Brodrick, 2013) which are primarily done individually. It can happen formally/informally, with/without the involvement of managers (Berg, Dutton & Wrzesniewski, 2008) and its core feature is the bottom-up approach which empowers the employees to exercise the knowledge they have about themselves and their jobs; which contributes to its meaningfulness (Berg, Dutton & Wrzesniewski, 2013).

Wrzesniewski and Dutton (2001) proposed three forms of job crafting. First is task crafting, which refers to altering a job's task boundaries (i.e., a formal set of responsibilities given in the job description). An employee can do it by changing the form (task nature), scope (amount of time, energy, and attention), and type or number of activities (adding or dropping tasks) while he/she performs his/her job. Second is cognitive crafting, which refers to a change in cognitive task boundaries, and focuses on an employee's vision and approach towards his job (i.e., either as a set of distinct work tasks or as a whole) making it personally more meaningful. Third is relational crafting, which refers to the changes in the relational aspects of the job; whereby an employee alters the quality, amount, and frequency of interaction, and decides whom to interact (more or less) with while executing his job (Wrzesniewski & Dutton, 2001).

According to Wrzesniewski and Dutton (2001), being in charge (over a job), enhancing self-image at work, and building connections act as driving forces to craft a job. Other determinants include situational predictors (i.e., decision latitude, task interdependence, discretion to craft a job, etc.) and individual predictors (i.e., proactive personality, regulatory focus) (Demerouti, 2014). Job crafting generally occurs in three stages in which an employee (a) feels motivated to craft his/her job, (b) identifies and engages in available opportunities, and (c) visualizes associated outcomes upon him/her (Berg et al., 2008).

According to Berg and colleagues (2008), job crafting can affect an employee and his performance depending upon which task he/she completes, how he/she completes it, and the interpersonal dynamics of the workplace. Limited findings address outcomes of job crafting (Demerouti, 2014), yet it has been suggested that job crafting enhances job satisfaction (Li, Chen, Lyu & Qiu, 2016), occupational well-being and work performance (Rudolph, Katz, Lavigne & Zacher, 2017), organizational commitment and job performance (Siddiq et al., 2022). Moreover, it is negatively correlated with negative job outcomes such as work-related negative affect (Slemp & Vella-Brodrick, 2013), role stress (role conflict, role ambiguity, and role overload), burnout (Singh & Singh, 2018), exhaustion, cynicism, and workload (Hakanen, Seppälä & Peeters, 2017), and turnover intentions (Rudolph et al., 2017). Job crafting also positively correlated with surface acting as well as deep acting (Kim & Lee, 2017; Yang et al., 2022). Another study mentions a positive relationship between job crafting and deep acting (Ko, 2019). Similar constructs

to job crafting (Wrzesniewski & Dutton, 2001), such as initiative taking had a positive correlation with surface acting (Ikhide, Timur & Ogunmokun, 2023); OCB (Shagirbasha & Sivakumaran, 2021), personal initiative, and initiative climate (Sok, Danaher & Sok, 2021) had a negative relation with surface acting and positive association with deep acting.

In the current scenario, we viewed outcome variables specifically about employees' emotional sphericity. Hereby, job stress is the natural outcome when an employee goes through uncomfortable and unwanted feelings because he/she does not find himself/herself aligned with normal or self-desired functioning under the influence of opportunities, restraints, or demands that are related to potentially crucial work-related outcomes (Parker & DeCotiis, 1983). Job satisfaction also refers to the affective state of employees with respect to different job facets (MacDonald & MacIntyre, 1997). Lastly, emotional labor is seen specifically in two dimensions, which are surface acting (employee's modification and control of emotional expression) and deep acting (control of internal thoughts and feelings in accordance with the mandatory display rules). These two dimensions represent an internal approach to emotional labor which makes it an employee-focused approach (Brotheridge & Grandey, 2002).

## Theoretical underpinning

According to the COR theory (Hobfoll, 1989), every individual has a pool of resources which he/she strives to obtain, retain, and protect (from losing). These resources, may vary from individual to individual (characterized by internal or external locus) and encompass anything which has value to the individual (in the form of objects, conditions, energies, and personal characteristics) (Hobfoll, 1989) or which help him/her combat against stressor(s) and gain further resources. Emphasizing personal characteristics, Hobfoll (1989) mentions that these act as resources as long as they help in alleviating stress. Moreover, investigations on various personal resources are also suggestive of the indication that many personal traits, as well as skills, assist in resisting stress (Hobfoll, 1989).

As highlighted by Lyons (2008) as well, frontline customer service employees, which is the target sample of our study, reflect a large amount of authority in their task responsibilities, and timings, as well as in their relationships at the workplace. The nature of this job demands spontaneous

and unsupervised changes in the individual's job roles with the aim to enhance its meaningfulness and to meet their own personal needs and do not primarily involve management in decision making. Furthermore, job crafting can majorly be studied under two broad conceptualizations that are role-based and resource-based approaches (Bruning & Campion, 2018). Resource-based approach, which follows the perspective given by Tims and Bakker (2010) revolves around an individual's alignment of job demands and resources as per his/her abilities and preferences (Szóts-Kováts & Kiss, 2023). Role-based approach, which is being discussed in our conceptual framework, follows Wrzesniewski and Dutton's (2001) perspective that focuses on the motivational aspect and puts emphasis on employee-driven changes in work role boundaries and perceptions, assuming that it fulfills work meaningfulness and its related positive outcomes (Lichtenthaler & Fischbach., 2019). As Lichtenthaler and Fischbach (2019) state, these motivations of an individual are grounded in his/her need to gain control, his/her positive self-image, and his/her workplace social relationships. Accordingly, Berg et al. (2013) noted that employees make use of three personal characteristics (motives, strengths, and passion) to support their crafting efforts to make their jobs more meaningful. From a COR perspective, job crafting can be viewed as motivational energy, and keeping in view the discussed arguments, it is visible that it closely aligns with the conceptualization of personal characteristics.

Revolving around the stress theory of COR (Hobfoll, 1989), stress may occur in response to the physical environment which holds (a) risk of net loss of resources (anticipated or feared stress), (b) the net loss of resources (actual stress), or (c) lack of resource gain following the investment of resources (unsuccessful investment of resources by the person himself). DCB may act as an overwhelming phenomenon in work settings, resulting in actual loss, fear of loss, or hindrance in gaining further resources. It may also result in 'loss spirals' (corollary 2; COR theory) and the resulting loss of resources (principle 1; COR theory) is more salient (disproportionately) than the resource gain, in speed and in degree, which may elevate negative outcomes of one's job.

In light of empirical and theoretical evidence, we propose the following hypotheses:

H1: dysfunctional customer behavior shall moderate the relationship between job crafting and job stress such that it will be weakened, among frontline customer service employees;

H2: dysfunctional customer behavior shall moderate the relationship between job crafting and job satisfaction such that it will be weakened, among frontline customer service employees;

H3: dysfunctional customer behavior shall moderate the relationship between job crafting and surface acting such that it will be weakened, among frontline customer service employees;

H4: dysfunctional customer behavior shall moderate the relationship between job crafting and deep acting such that it will be weakened, among frontline customer service employees (see Figure 1).

## METHOD

### Participants

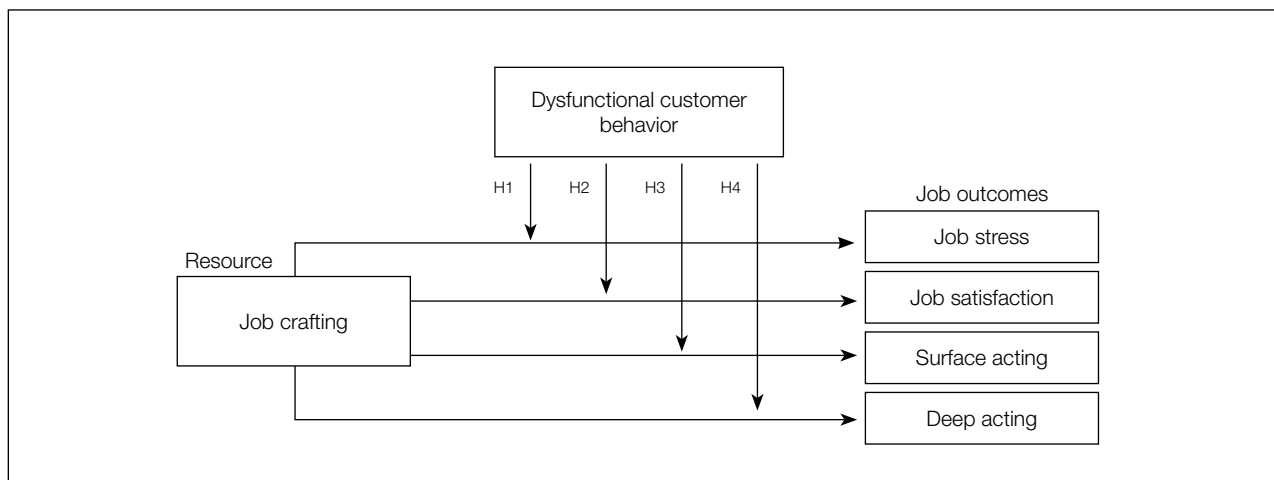
FLCSEs with an experience of 6 months (or more) at their workplace and having 12 years of education (and above) were included. FLCSEs ( $N = 440$ ; males = 345, females = 94) serving in shopping malls located in Islamabad and Rawalpindi, Pakistan having an age range of 17-56 years ( $M = 26.7$ ,  $SD = 5.8$ ) and work experience ranging from 1-30 years ( $M = 3.34$ ,  $SD = 3.31$ ) participated in this study.

Participants were undergraduates ( $n = 283$ ) and graduates ( $n = 154$ ), whose per day work hours ranged from 3-14 hours ( $M = 9.8$ ,  $SD = 1.44$ ). On average each participant took 15-20 minutes to complete the questionnaire.

### Measures

- *Demographic sheet*. The demographic sheet inquired the respondents about their job title, place of work (and branch), per day work hours, per week work hours, job experience, type of organization (clothing, restaurant, etc.), gender (male or female), year of birth and age, and qualification.
- *Dysfunctional Customer Behavior Scale*. It is a 13-item scale (Kang & Gong, 2019) that was used to measure how often the respondent has experienced DCB. It has three subscales verbal abuse, disproportionate demands, and illegitimate complaints which are measured via a 5-point Likert scale (1= never to 5= always). There is no reverse-scored item and the reliability value for the scale is .85.
- *Job Crafting Questionnaire*. It is a 15-item scale (Slemp & Vella-Brodrick, 2013) which was used to measure the extent to which an employee engages in job crafting activities. It has three subscales (5 items each) namely

**Figure 1** – Conceptual framework of this study



task crafting, relational crafting, and cognitive crafting measured through a 5-point Likert scale (1 = never to 5 = always). None of the items are reverse scored and Cronbach alpha for the entire scale as mentioned by the author is .91.

- *Job Stress Scale*. It is a 13-item scale (Parker & DeCotiis, 1983) which was used to measure job stress among employees specifically in time stress and anxiety dimension. It used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). None of the items are reverse-scored. The reliability of this measure is reported to be .91 (Shabir, Abrar, Baig & Javed, 2014). A modified version of this scale (Bukhari & Kamal, 2017) was used.
- *Generic Job Satisfaction Scale*. It is a 10-item scale (MacDonald & MacIntyre, 1997) which was used to measure job satisfaction on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree). None of the items is reverse scored. The Cronbach's alpha value of the scale reported by the author is .77. The word "get along" in item 9 of the scale was modified to "on good terms" with the author's permission.
- *Emotional Labor Scale*. It is a 15-item scale (Brotheridge and Lee, 2003) which measures emotional display in six dimensions (frequency, intensity, variety of emotional display, the duration of interaction, surface acting, and deep acting). The first four dimensions cover the job-focused emotional labor such that they showcase perceived interpersonal work demands. Having focus on employee's internal and affective state, the present study utilized 9 items from the two subscales (deep acting and surface acting) to measure employee-focused emotional labor, as these focus on employee's process of emotion management, which is an internal approach to emotional labor. It uses a 5-point Likert scale (1 = never to 5 = always). None of the items are reversed scored. Reliability values for subscales are .93 for surface acting and .95 for deep acting (Kim, Yoo, Lee & Kim, 2012).

## Procedure

After obtaining permission from relevant administrative authorities, FLCSEs working in different shopping malls in Islamabad and Rawalpindi were approached individually via convenient purposive sampling technique during their working hours and were requested to participate in the

research after signing out the consent form. Out of 500 distributed questionnaires, 462 were returned. Out of these, 440 were found acceptable.

## RESULTS

### Control variables

In the present study, gender, age (in years), educational qualification, job experience (in years), work hours per day, and work hours per week, were entered prior to study variables to control their impact on outcome variables as seen in light of literature (Ali & Sajjad, 2018; Cheng, Jiang, Xie & Liu, 2022; Dhamija, Gupta & Bag, 2019; Karatepe, Uludag, Menevis, Hadzimehmedagic & Baddar, 2006). The main focus of the study was to determine the moderating impact of DCB. Therefore, demographic variables were first entered together to view their combined effect.

### Data analysis

IBM SPSS Statistics (version 20) was used to carry out all the analysis except for CFA which was carried out with the help of IBM SPSS Amos (version 22). Mean, standard deviations and correlations were computed. CFA was performed to check the factor structure of the scales. Standardized scores were used to create interaction terms in priori to hierarchical multiple regression to check the moderating impact of DCB.

### Descriptive statistics and bivariate correlations among study variables

Table 1 shows that the alpha coefficients of all the instruments range from .73 to .88 indicating them as reliable (Field, 2013). As a general guideline, a skewness value between -1 and +1 is considered excellent (Hair, Hult, Ringle & Sarstedt, 2022), whereas an accepted range of value for kurtosis is -2 to +2 (George & Mallery, 2009). This indicates that data was normally distributed. Job crafting had a non-significant relationship with dysfunctional customer behavior, surface acting, and deep acting, whereas it was negatively associated with job stress, and positively associated with job satisfaction.

**Table 1** – Descriptive statistics and alpha reliability coefficients of instruments

Var.	$\alpha$	<i>M</i>	<i>SD</i>	Skew.	Kurt.	1	2	3	4	5	6
DCB	.86	29.25	9.47	.56	.19	–					
JC	.85	54.43	10.95	–.22	–.51	–.08	–				
JS	.88	40.41	10.07	–.65	.72	.43**	–.28**	–			
GJS	.86	38.63	6.54	–.44	–.07	–.28**	.35**	–.33**	–		
SA	.76	17.97	5.49	–.14	–.27	.38**	–.08	.54**	–.22**		
DA	.73	9.72	3.09	–.29	–.46	.28**	.02	.43**	–.12**	.56**	

*Legenda.* DCB = dysfunctional customer behavior; JC = job crafting; JS = job stress; GJS = general job satisfaction; SA = surface acting; DA = deep acting; Skew. = skewness; Kurt. = Kurtosis.

Table 2 shows that CFA validated the factor structure of all the instruments. It is suggested that  $\chi^2/df$  in the range of 2 to 1 or 3 to 1 indicates an acceptable fit (Carmines & McIver, 1981; Marsh & Hocevar, 1985 as cited in IBM SPSS AMOS). NFI and CFI having values greater than .90, and GFI, and AGFI with a value close to 1 indicate good fitness of model (Byrne, 2016). TLI with a value closer to .95 is indicative of good fit (as cited in Byrne, 2016). RMSEA value less than .05 indicates a good fit (Brown & Cudek, 1993 as cited in Byrne, 2016), and SRMR in a well-fit model stays small i.e. .05 or less (Byrne, 2016). Items are retained in their respective scales based on factor loading which should be equal to or greater than .3 (Stevens, 2012). All the values were in range. Errors were allowed to co-vary where values of model fit indices were not in range. From a single to a maximum of three covariances were added.

Table 3 presents the results of moderated multiple regression analysis with job stress, job satisfaction, surface acting and deep acting as outcomes, job crafting as predictor, and DCB as moderator. Model 1 in Table 2 explains the combined prediction of demographics as control variables (gender, age, education, job experience, and work hours per day), which in total account for a variance of 5% in

the outcome variable when it is job stress, 9% variance in job satisfaction, and 4% variance in surface acting, and 2% variance in deep acting. Model 2 explains that job crafting brings a 6% variance in job stress, 9% variance in job satisfaction, and 0% i.e. no variance in surface and deep acting. Model 3 explains that DCB accounts for a 17% variance in job stress, 6% variance in job satisfaction, and 13% variance in surface acting and 8% deep acting. Model 4 shows the interaction effect of the moderator variable on outcome variables. It is seen to be significant upon job stress ( $\beta = .15, p < .001$ ) bringing an additional variance of 2% (Hypothesis 1; supported); surface acting ( $\beta = .12, p \leq .05$ ) bringing an additional variance of 1% (Hypothesis 3; supported), and upon deep acting ( $\beta = .12, p \leq .05$ ) bringing an additional variance of 1% (Hypothesis 3; supported). It is also evident that it has a non-significant moderating impact on job satisfaction ( $\beta = .05, p = .86$ ) (Hypothesis 2; not supported). Altogether, models 1, 2, 3, and 4 account for a total of 30% of variance in job stress, 24% variance in job satisfaction, and 18% variance in surface acting, and 11% variance in deep acting.

From Figure 2, it is evident that the slope of inverse relationship between job crafting and job stress is the steepest

**Table 2** – Confirmatory factor analysis of all the instruments used in study

Variable	$\chi^2$	df	$\chi^2/df$	GFI	CFI	TLI	NFI	AGFI	RMSEA	SRMR
DCBS <sup>a</sup>	112.34	60	1.87	.96	.97	.96	.94	.94	.05	.04
JCQ <sup>b</sup>	180.12	87	2.07	.95	.94	.92	.89	.93	.05	.04
JSS <sup>a</sup>	118.98	62	1.91	.96	.97	.96	.94	.94	.05	.04
GJSS <sup>a</sup>	72.06	32	2.25	.97	.97	.96	.95	.95	.05	.03
ELS <sup>a</sup>	61.86	25	2.47	.97	.96	.95	.94	.95	.06	.04

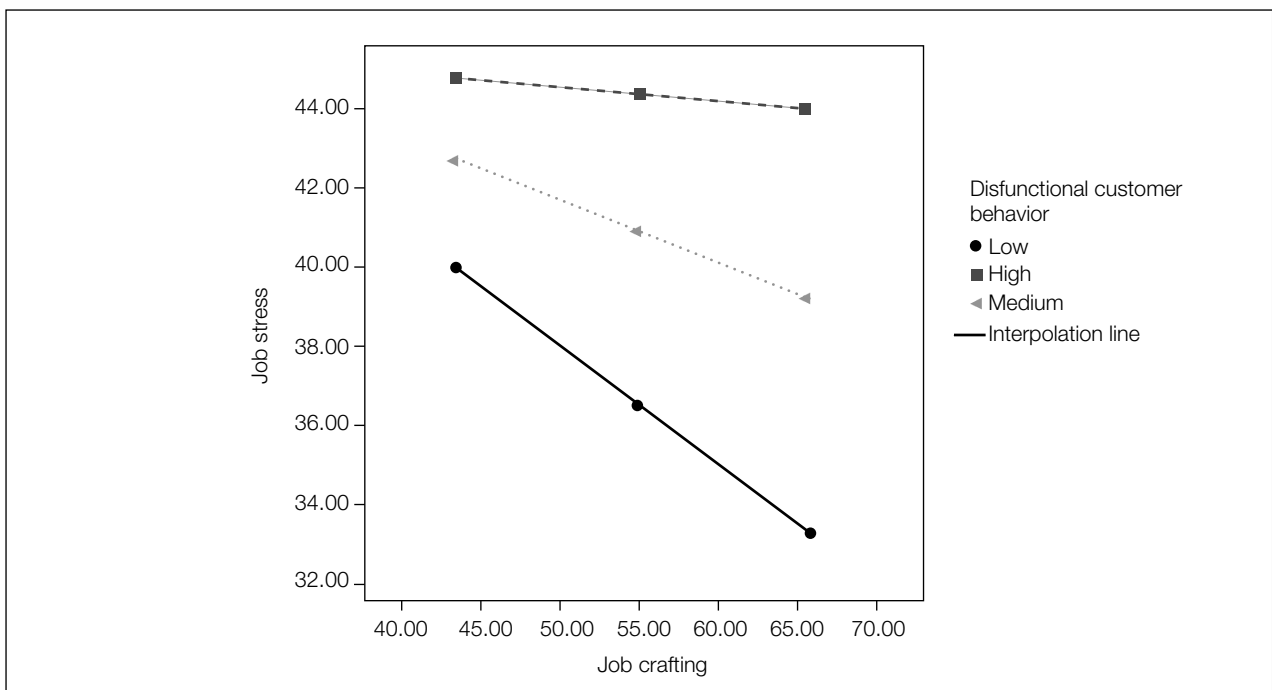
*Legenda.* df = degree of freedom; GFI = Goodness of Fit Index; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; NFI = Normed Fit Index; AGFI = Adjusted Goodness of Fit Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; DCBS = *Dysfunctional Customer Behavior Scale*; JCQ = *Job Crafting Questionnaire*; JSS = *Job Stress Scale*; GJSS = *Generic Job Satisfaction Scale*; ELS = *Emotional Labor Scale*.

*Note.* Table presents confirmatory factor analysis for all the instruments.

<sup>a</sup> Error covariances were added. <sup>b</sup> Error covariances were not added. For any instrument, single or a maximum of three error covariances were added.

Surface acting and deep acting are subscales of emotional labor scales.

**Figure 2** – Dysfunctional customer behavior as moderator between job crafting and job stress





**Table 3** – Moderated regression on job stress, job satisfaction, surface acting and deep acting with job crafting as predictor and dysfunctional customer behavior as moderator

Predictor	Job stress		Job satisfaction		Surface acting		Deep acting	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Model 1 (Control) <sup>a</sup>	.05		.09		.04		.02	
Model 2	.06		.09		.00		.00	.
Job crafting		-.25***		.31***		-.06		.04
Model 3	.17		.06		.13		.08	
Job crafting		-.21***		.29***		-.03		.06
DCB		.42***		-.25***		.37***		.28***
Model 4	.02		.00		.01		.01	
Job crafting		-.20***		.29***		.02		.08
DCB		.40***		-.25***		.35***		.26***
Job crafting x DCB		.15***		.05		.12*		.12*
Total $R^2$	.30		.24		.18		.11	

*Legenda.* DCB = dysfunctional customer behavior.

*Note.* <sup>a</sup> Control variables include gender (0 = male, 1 = female), age, education (0 = undergraduate, 1 = graduate), job experience, per day work hours and per week work hours.

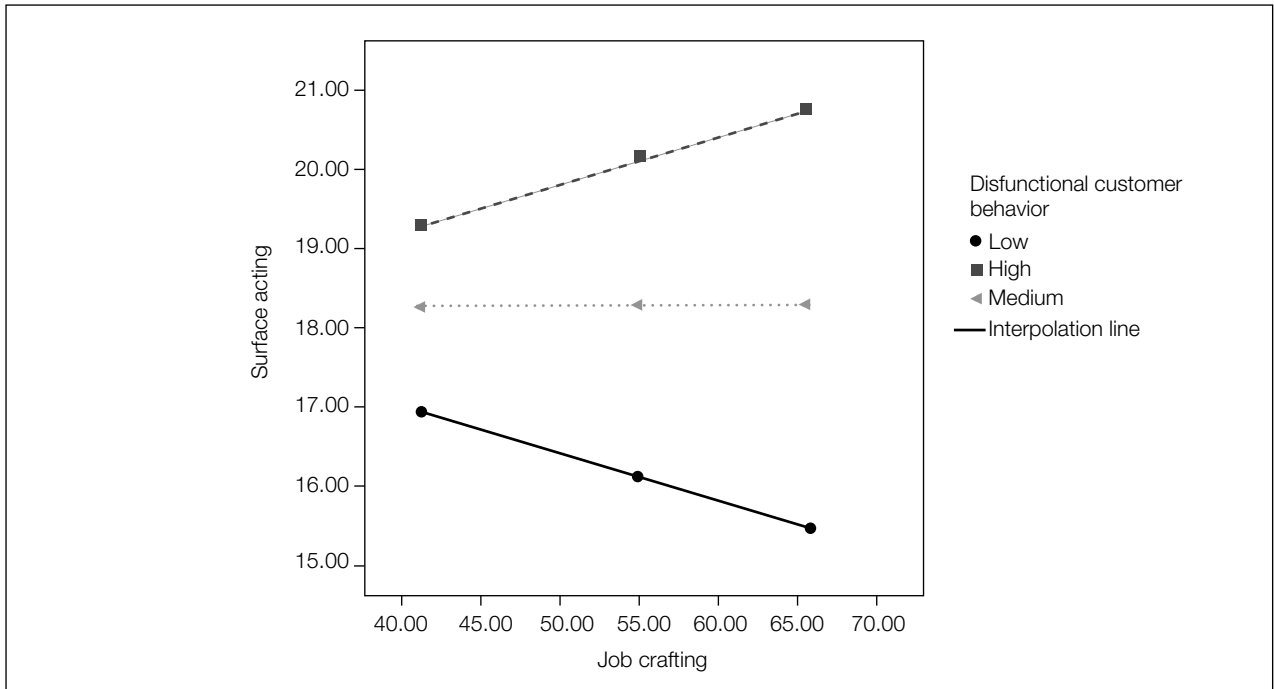
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

(i.e., strongest) when DCB is at the lowest. At the mean level of moderator, the slope for job crafting and job stress becomes less steeper which shows that the relationship is weakened. At the highest level of moderator, the steepness of the slope shows that the relationship between job crafting and job stress is the weakest, indicating that increase in level of job crafting and brings the least decrease in job stress at high level of DCB. This shows that as the level of DCB increases the negative relation between job crafting and job stress is weakened, which implies that more job stress is experienced.

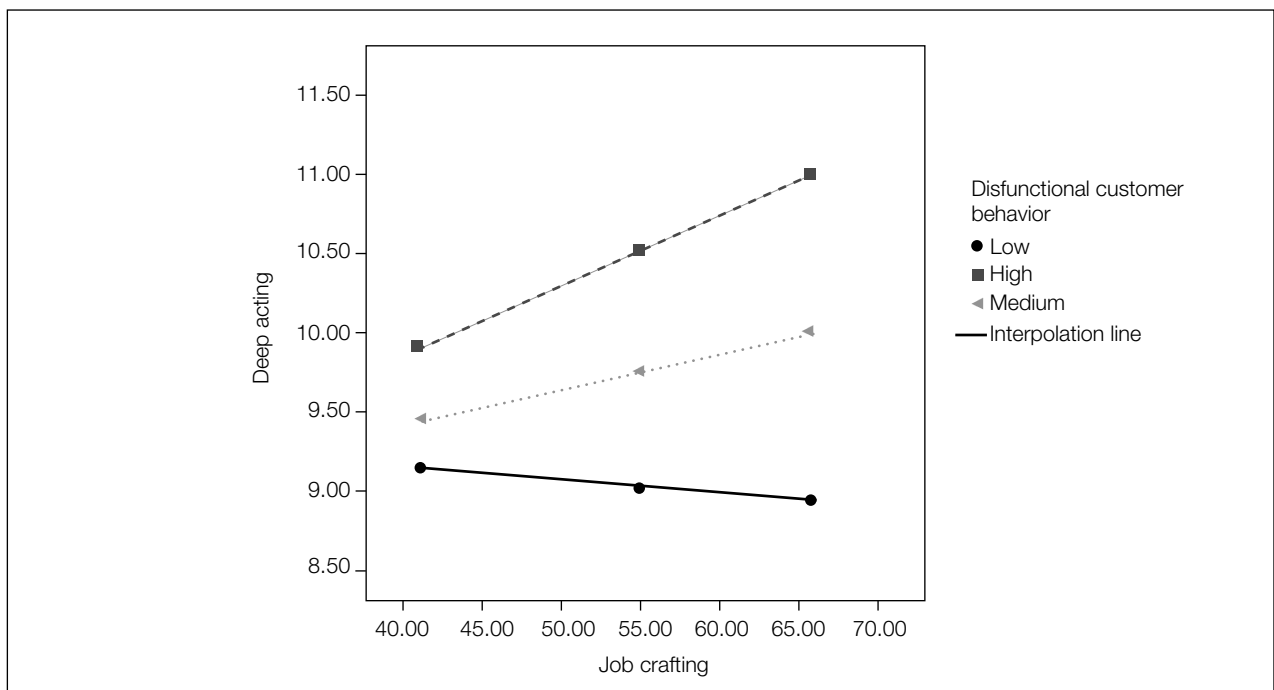
Figure 3 and Figure 4 represent the moderating effect of DCB on the relationship of job crafting with surface acting

and deep acting, respectively. In both the figures, it is evident that the slope of inverse relationship of job crafting with surface acting and deep acting is the steepest (i.e., strongest) when DCB is at the lowest. At mean level of moderator, the slope for job crafting and emotional labor becomes weakened (in both), and at the highest level of DCB, the steepness of the slope in positive direction shows that the relationship between job crafting and job stress becomes positive, indicating that as level of job crafting increases, increases amount of surface acting and deep acting both are experienced at the highest level of DCB. This proves that the stated Hypothesis 3 and 4 is supported.

**Figure 3** – Dysfunctional customer behavior as moderator between job crafting and surface acting



**Figure 4** – Dysfunctional customer behavior as moderator between job crafting and deep acting



**Table 4** – Mean differences in gender across study variables

Var.	Males (n = 345)		Females (n = 94)		t	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
DCB	29.70	9.57	27.56	8.97	1.94	.05	-.02	4.30	–
JC	54.13	11.25	55.63	9.74	1.17	.24	-4.00	1.01	–
JS	40.13	10.37	41.45	8.90	1.13	.26	-3.62	.98	–
GJS	38.18	6.75	40.26	5.50	3.08	.00	-3.41	-.75	.31
SA	17.84	5.47	18.43	5.62	.91	.36	-1.84	.67	–
DA	9.61	3.13	10.10	2.98	1.34	.18	-1.19	.23	–

*Legenda.* Var. = variable; CI = confidence interval; LL = lower limit; UL = upper limit; DCB = dysfunctional customer behavior; JC = job crafting; PC = psychological capital; JS = job stress; GJS = generic job satisfaction; SA = surface acting; DA = deep acting.

Table 4 reflects that gender wise significant difference only exists in job satisfaction, where it is evident that females experience more job satisfaction in comparison to males. There were non-significant mean differences found in both the genders across dysfunctional customer behavior, job crafting, job stress, surface acting, and deep acting.

## DISCUSSION

FLCSEs often experience rude and misbehaving customers, which tends to impact them in multiple ways (Chen et al., 2021; Goussinsky, 2011; Harris & Reynolds, 2003; Kang & Gong, 2019; Nawaz et al., 2020). The present study addresses the moderating impact DCB on the relationship between personal resource (job crafting) and job outcomes (job stress, job satisfaction, and emotional labor) under the theoretical support of conservation of resource theory. The framework is tested among FLCSEs who serve customers in shopping malls. More specifically, data was collected from (FLCSEs) from the twin cities i.e. Islamabad and Rawalpindi, in Pakistan. Findings unveiled that DCB

when interacts with job crafting accounts for 2% change in job stress which is significant (see Table 2), supporting Hypothesis 1 of the study. This implies that DCB weakens the negative relationship between job crafting and job stress among FLCSEs. It is evident from literature that DCB not only brings serious consequences in the form of job stress (Bi et al., 2021), but also has a negative impact on cognitive performance of employees which ultimately diminishes their task performance (Rafaeli et al., 2012). It emotionally impacts employees which causes them to feel negative emotions and causing them to feel worried and irritated (Harris & Daunt, 2013). In light of COR theory, it can be said that DCB tends to diminish the resources present, resulting in an increased negative impact in the form of job stress.

The interaction between job crafting and DCB brought no change when outcome variables were job satisfaction (Hypothesis 2; not supported). Job satisfaction is taken as an affective state, which also keeps a positive correlation with job crafting (see Table 1), implying that, as job crafting increases, job satisfaction also increases, by multiplying an employee's meaningfulness of his/her job. As a result, the relationship between these constructs is not diminished by DCB.

However, DCB significantly moderated the relationship of job crafting with surface acting and deep acting by weakening it (Hypotheses 3 and 4; supported). The results are in line with the previous literature which points out the negative impact of DCB on job outcomes (Al-Hawari et al., 2020; Bi et al., 2021; Chen et al., 2021; Goussinsky, 2011; Harris & Reynolds, 2003). Surface acting is about suppression of emotions, and DCB positively correlates with surface acting, giving a plausible explanation on its negative impact. Furthermore, acting as a stressor (based on COR theory), DCB also has the capacity to deteriorate resources. It is also seen to positively correlate with deep acting, which signifies that the employee puts in more effort in trying to genuinely feel the required emotions, which itself may be a cause of resource loss, as it consumes energy (in context of COR).

Overall, literature supports that job crafting itself occurs in stages and the very first step demands one's motivation to craft a job (Berg et al., 2008). Moreover, job crafting itself is said to be determined by situational as well as individual predictors (Demerouti, 2014). This explains that job crafting, although closely aligned with conceptualization of personal resource, has the capacity to be affected by an external stressor, that is also evident in our results.

Table 4 showed that there were non-significant mean differences, found in all the study variables except for job satisfaction, which was seen more in female FLCSEs. In accordance with socialization perspective (learning norms and beliefs in accordance with the society), individuals are expected to behave gender appropriately towards the opposite gender (Dormann, Brod & Engler, 2017). Additionally, females stand better at decoding non-verbal behavior than males (Hall et al., 2000 as cited in Dormann et al., 2017), implying that female employees are capable of detecting stressor earlier as compared male employees that helps them adapt accordingly, ultimately experiencing lesser stress and more satisfaction.

## Theoretical implications

As discussed previously, this research contributes by adding to the limited literature that has been discussed in this particular realm, specifically in Pakistan. This research taps many areas at once, such that it explains the powerful interaction of DCB with job crafting and its impact on job

outcomes. Secondly, most of the studies tend to focus on the moderating impact job resources on employee outcomes. To the best of our thorough literature search, none or only handpicked research findings have tried to explore moderating role of job demands or job stressors. Keeping this in view, it can be assumed that our study is among the first few studies to explore how job stressor in the form of DCB impacts the relationship between personal resources and job outcomes. It is evident from our study that DCB holds a powerful impact, that also affects the resource pool of FLCSEs. This calls for the need to introduce management strategies to cater the customers' needs as well as to provide FLCSEs with training that can give a boost to their personal resources, and hence enhanced profitability of the business. It suggests that organizational firms must take care of mental health of their employees by collaborating with counsellors to provide their services. Some useful strategies provided by Harris and Daunt (2013) include training via roleplays, footage of actual customers, emotional labor discussion sessions etc. can be practically implemented.

## Limitations

Due to paucity of time, the current study could only utilize data from malls located in only two cities of Pakistan. During the "sales promotion events" data could not be collected effectively due to enhanced customer influx in shopping malls. All the questionnaires used in this research were self-report questionnaires, which means that the responses may be subject to bias. Only shopping malls were marked to collect data, hence the results are limited towards generalization in other service settings where customer misbehavior is also faced. Uneven distribution of participants with respect to gender is attributed to cultural difference (male dominant society), as females are not commonly seen to be performing jobs, especially in service sector. Future research can address this limitation by taking care of sample distribution. In times of sale promotion offers, due to enhanced customer influx, data collection faced delays as well. Future studies can study this phenomenon in this specific context to analyze consumer behavior.

Conflict of interest to declare: none.

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# Psychological factors behind status updates: A qualitative analysis of the display of personal information on social media

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✎ **ABSTRACT.** Questo studio ha cercato di indagare i fattori psicologici che stanno alla base della pubblicazione di informazioni personali sui social media e in particolare ciò che spinge gli utenti a continui aggiornamenti. Il campione ( $N = 100$ ) era costituito dagli studenti (fascia di età 21-35 anni) di una delle università finanziate dal governo centrale del Punjab, in India. I risultati hanno rivelato che gli aggiornamenti frequenti rispondono al desiderio di accettazione sociale, di attenzione e combattono i problemi di insicurezza. Coloro che pubblicano frequentemente post sono in genere soggetti estroversi che trovano soddisfazione dal riscontro che i loro post ottengono. È stato anche riscontrato che coloro che aggiornano spesso potrebbero essere apatici o narcisisti, soggetti con una scarsa soddisfazione di vita e legami sociali e familiari non appaganti. L'obiettivo principale di questo studio è stato quello di discernere come fattori individuali contribuiscono all'autostima, allo stato emotivo, alla personalità e al benessere psicologico di coloro che hanno bisogno di aggiornare frequentemente i propri profili.

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✎ **SUMMARY.** Social media has become an open platform to display one's personal information that is accessible freely to an infinite audience. This study has tried to investigate the psychological factors behind the posting of personal information on social media. Since the construct of 'updating' is recent in origin and is least researched, the study followed an in-depth approach of focus group discussions (FGDs). The sample ( $N = 100$ ) for this study was the students (age range 21-35 years) of one of the central government funded universities of Punjab, India. The findings revealed that updaters update frequently since they long for social acceptance, seek attention, ensure self-verification and combat insecurity issues through updating. Extroverted participants upload frequently and introverts' posts rarely. Emotional upheaval makes updaters post more. And updaters feel better not after posting, but after getting viewers, comments and likes for their posts. Many updaters could be either apathetic or narcissistic. Updaters were also found to have low life satisfaction and unsatisfactory societal and familial bonds. Finally, the major focus of this study was to discern how these individual factors contribute towards the self-esteem, emotional state, personality and psychological well-being of updaters. This has been thoroughly discussed in light of previous research in this study.

**Keywords:** Social media, Status updates, Personal information, Self-esteem, Emotional state, Personality, Psychological well-being, Updaters

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## INTRODUCTION

### Short presentation

The present study was undertaken to understand the psychological factors influencing updating on social media. The sample consisted of university students ( $N = 100$ ; age range 21-35 years) from Central University of Punjab, India. The study found WhatsApp and Instagram to be the most popular social media platforms among the respondents, followed by Facebook and Snapchat. The majority of participants used social media for sharing personal information, such as travel pictures, selfies, and family photos. A smaller proportion used social media for sharing educational or news-related content, creating public awareness, or sharing finance and trading-related content. Through focus group discussions, several themes emerged regarding the reasons for posting personal information on social media.

The participants indicated that seeking social acceptance and approval was a prominent motive for sharing updates. They sought validation and positive feedback through likes, comments, and shares on their posts. Additionally, attention-seeking behaviour was another significant factor, as some participants reported that posting updates was a way to gain attention from others. Self-verification also emerged as a theme, with participants sharing idealized versions of themselves to seek confirmation from others. Furthermore, some participants displayed reaction formation, where they posted the content that was the opposite of their true emotions or feelings, possibly as a defense mechanism to resolve their insecurity issues.

Regarding offline and online connections, participants generally preferred offline connections but showed a dichotomy in their online behaviour. Introverted individuals tended to have more online connections and observed others' posts without sharing much personal information themselves. Extroverted individuals, on the other hand, had both online and offline connections and actively participated in social media, frequently updating their personal information.

In terms of mood and posting behaviour, the study found that participants were more inclined to post during emotional upheavals, particularly when experiencing negative emotions. Some participants posted content that aligned with their current moods, seeking attention and support from others. Others posted the content that was opposite to their true emotions, potentially using reaction formation to cope with

their insecurities. Participants reported feeling better when their posts received viewers, likes, and comments, indicating the importance of social validation and instant gratification.

Regarding the participants' thoughts on others' experience of FOMO (Fear of Missing Out) due to their posts, most participants mentioned that they did not consider others' feelings before or after updating. They emphasized that viewers had the freedom to choose whether to view their posts or not. This is particularly of interest to future research, as to whether social media behavior moderates empathy formation in individuals.

Finally, these individual factors contribute towards the lower self-esteem, confused emotional state, apathetic or narcissistic personality and low psychological well-being of updaters. These findings are especially important keeping in view this recent trend of endless postings on social media.

### A brief history of social media

The word social media is conceptualised as the ability of creating, sharing, exploring and collaborating contents online. The advent of social media in the 1990s heralded a new age in online communication and interaction. Using the conceptual and technical framework established by Web 2.0, social media "is a set of online applications that facilitates the production and dissemination of user-generated content" (Kaplan & Haenlein, 2010). The evolution of social media could be traced starting from the advent of the Telegraph in 1792, when long-distance communication was completely transformed, rendering the actual transfer of objects superfluous. After this, the telephone (1876) and the radio (1895) arose as innovative forms of communication (Dhingra & Mudgal, 2019). The 1940s saw the introduction of the first truly powerful computers, known as supercomputers. In addition, advancements in computing network technology afterwards set the ground for the birth and growth of the Internet (Lile, 2023). Users were able to sign in and interact with one another in a manner that was analogous to present practises, but at a substantially slower speed, on Bulletin Board Systems (BBS), which emerged as the initial type of social networking site in the late 1970s. UseNet, an early computer network communication system that developed in 1979, was the precursor of the World Wide Web (Bickart & Schindler, 2001). In 1985, General Electric introduced a text-based platform known as Genie, which was an acronym

for General Electric Network for Information Exchange. Genie emerged as a direct competitor to CompuServe by providing a diverse range of features, including gaming, e-commerce, email functionality, and a deliberation platform referred to as round tables (Emerson, 1983). When Facebook was first launched in 2004, it was a website accessible only to students enrolled at Harvard University but later expanded its horizons worldwide (Boyd, 2004). Both Facebook and Twitter remained among the most popular social networking sites since 2006 subsequently more social networking sites that catered to specialised subcommunities, such as Pinterest, Foursquare, Tumblr, and Spotify, came into existence (Lile, 2023).

Thus in the current scenario a wide number of social media platforms are easily accessible to almost everyone. As of January 2021, the global active social media user population is 4.2 billion individuals, which represents approximately 53% of the world's total population. Facebook remained the most widely utilised social media platform with a monthly active user base of 2.8 billion. However, other social media platforms such as YouTube, WhatsApp, and Instagram are also highly popular with respective monthly active user counts of 2 billion, and 1.2 billion (Kemp, 2021). In India, the number of Internet users has surpassed that of any other country in the world. As of January 2021, nearly 33% of India's total population was active on social media platforms (Kemp, 2021). By the year 2023, India is projected to have more than 900 million users of smartphone technology and 829 million users of mobile internet (Cisco Annual Internet Report 2018-2023).

Thus more and more people are enrolling each day over various social media platforms. Many studies have also found that online platforms serve as outlets for emotional expression and support, thereby making people feel happier and less lonely (Andalibi, 2020; Burke & Develin, 2016; Menon, 2022). Many users therefore have started using social media as a platform to share opinions, beliefs, knowledge and even personal information. Many times such personal information is irrelevant to most of the viewers yet it is shared with a known as well as strange audience. Social media has some unique features like large audience, asynchronicity, and sudden feedback which reinforce users to disclose personal information (Andalibi, 2020; Burke & Develin, 2016). Social media can also be a way for people to tell their stories and get support from others (Malak, Shuhaiber, Al-amer, Abuadas & Aburoomi, 2022; Subramanian, 2017; Teo & Lee, 2016).

Along with the benefits of sharing on social media, there comes the harmful effects of excessive sharing on social media and its psychological impact have drawn more attention from the public health sector. For example, Thompson, Wang and Daya (2020) utilised PLS structural equation modelling to examine data from 188 Facebook users in order to determine which factors contribute to news sharing on the platform. Results show that information sharing and status seeking gratifications effect news sharing differently depending on the setting. It has been observed that when the importance of news quality is downplayed, the impact of status-seeking satisfaction on news sharing increases. Similarly, in order to thoroughly examine the nature of the association between social media self-disclosure and psychological well-being, Tsz Hang Chu and colleagues did a meta-analysis using 38 empirical research. Using a multidimensional notion of self-disclosure, they investigated the relationships between psychological well-being and the quantity (volume and depth) and quality (intent, valence, and honesty) of self-disclosure. The findings showed that honesty and self-disclosure valence were positively connected with psychological well-being; however, the self-disclosure quantity was not substantially linked. The study discovered that the relationships between a variety of self-disclosure-related characteristics and psychological well-being were significantly influenced by the participant's gender, age, and cultural upbringing (Chu, Sun & Crystal Jiang, 2022). Also, people tend to report higher life satisfaction when they express themselves more honestly on social media and the inverse is also true (Bailey, Matz, Youyou & Iyengar, 2020).

Further, platforms like Instagram tend to encourage users to evaluate themselves by making upward social comparisons, which draws emphasis to parts of the body that are seen as less attractive. Instagram use has increased, which draws attention to areas of the body that are prone to worry and encourages comparison and body dissatisfaction (Couture Bue, 2020). Further, individuals with low levels of self-esteem accept requests from unknown people on Facebook (Tazghini & Siedlecki, 2013). People with lower self-esteem and higher levels of loneliness were more willing to share personal information on social media (Stone et al., 2022). Self-esteem was shown to be positively connected with the number of likes people received on their Facebook profile pictures. Further, the relationship between liking and self-esteem was less for those with more compelling goals (Burrow & Rainone, 2017). The frequency of sharing solo selfies and edited selfies was

significantly predicted by narcissism. Additionally, narcissists updated their Facebook, Instagram, and WhatsApp stories with a lot of frequency (Menon, 2022). The need for popularity, extraversion, and agreeableness all predicted the posting of group selfies (Balta, Emirtekin, Kircaburun & Griffiths, 2020). FOMO and narcissism have a positive correlation with Instagram usage, while FOMO has a negative correlation with self-esteem (Serrano, 2020). Overall updating on social media does seem to have psychological connotations.

## OBJECTIVE OF STUDY

There are various names for daily updates on social media, fleet for Twitter, pin for Pinterest, status for WhatsApp, and story for Instagram and Facebook. For the purpose of this study, the general term updates has been used for all. The primary aim of the study was the qualitative inspection of the factors associated with the posting of personal information on social media. In this study personal information pertains to postings that do not have any significance to the viewers, since it is not adding to the knowledge base of anyone, nor is spreading any kind of awareness in the society. Also, this personal information is not providing any kind of monetary gains (such as in YouTube reels) to the updater. Postings of personal pictures, and sharing information about one's holidays, trips, shopping, sharing daily routine, etc. come under the domain of this study. The study aimed to find out what is making people post their personal information on social media. The study aimed to find out why people are posting so much these days and why people don't feel hesitant in making their personal information available to an audience completely strange to them. Based on these what's and why's, the following was the main objective of this study:

to understand the psychological factors (psychological well-being, emotional state, self-esteem, and personality) that might be contributing to some people regularly updating their personal information on social media.

## METHOD

### Sample

The sample for this study consisted of university students ( $N = 100$ ; age range 21-35 years) from Central University

of Punjab, India. This university being a central university has students from all parts and cultures of India, and also has some international students. Thus the sample suggested a diverse range of students. Convenience, purposive and snowball sampling methods were used to obtain the final sample for the study. The participants were either using social media actively or had deleted their social media accounts because of social media fatigue, but all participants had complete familiarity with social media.

In all twelve focus groups, each with seven to eleven subjects, were formed. This is consistent with the general belief that each focus group should have 7 to 11 individuals in order to facilitate productive conversation (Morgan & Krueger, 1998).

## Materials

A self-made questionnaire asking participants about their demographic details, the kind of information posted on social media, and consent for participating in focus group discussions, was used.

Further, a semi-structured discussion guide consisting of a series of probe questions based on Krueger and Casey's principles (2000), was developed. Opening, introductory, transitional, and key inquiries are the four main types of questions that typically appear in the questioning route. The opening questions (such as participants' introduction, likes-dislikes, university life, general awareness about social media etc.) were designed just to spark conversation and to increase comfort levels of the participants. Introductory questions (such as spending time on social media, types of social media, and preferred types of social media) allowed participants to concentrate on the talk and to begin thinking about the research objective. Transition questions (such as personal benefits of social media, habit-formation for social media, posting on social media, kind of stuff posted on social media, etc.) made participants delve into greater detail than introductory questions. Finally, key questions were framed in a way so that the general aspects pertaining to psychological well-being, emotional states, self-esteem, and personality could be discerned. Following were the key questions that were discussed during all FGDs for the participants:

1. Do you post personal information on social media? If yes, why do you post on social media? If no, why don't you post on social media?

2. Do you have more online connections or offline connections?
3. When do you post more; When you are sad or happy, anxious or calm, stressed or relaxed?
4. Does it bring happiness or bring some change to your mood?
5. Do you feel good or bad about the thought that others could experience Fear of Missing Out on your posts?
6. How satisfied are you with your life?
7. Do you feel you are an important part of your family and society?

Key questions had direct implications for the research objectives. Only the scripts from the answers to key questions were analysed.

## Procedure

Before the start of FGDs phase of study, the self-made questionnaire was sent to the participants through email. Only the participants who gave their consent for participating in FGDs were enrolled for these. All the participants were randomly divided into 12 groups. In each FGD, the participants were provided a comfortable environment that allowed them to disclose their thoughts, perception, and attitude about updating. The participants were allowed to discuss their thoughts in their regional language or in any other language to enhance their comfort level, since the moderators and the researcher were familiar with English and most regional languages spoken in the university. It was made clear to all participants that the conversation was being recorded by the research assistant and participants' right to privacy was assured. Each discussion lasted roughly 100 to 120 minutes (with a ten-minute interval). After the conduction of FGDs, the next step was processing and analysing the data from key questions thoroughly.

## Ethical considerations

Informed consent was taken from all the participants before the start of the study. Required information related to the study was given to participants and all the queries of the participants were resolved before collecting data. The participants were aware of audio recordings. No videos were recorded in order to maintain the confidentiality of

the participants. Participants were allowed to talk in their regional language also. The participants were aware that they were free to leave the study at any point of discomfort. No participant was judged throughout the study, every participant was clear that there were no right or wrong statements, just the opinions of other participants.

## RESULTS AND DISCUSSION

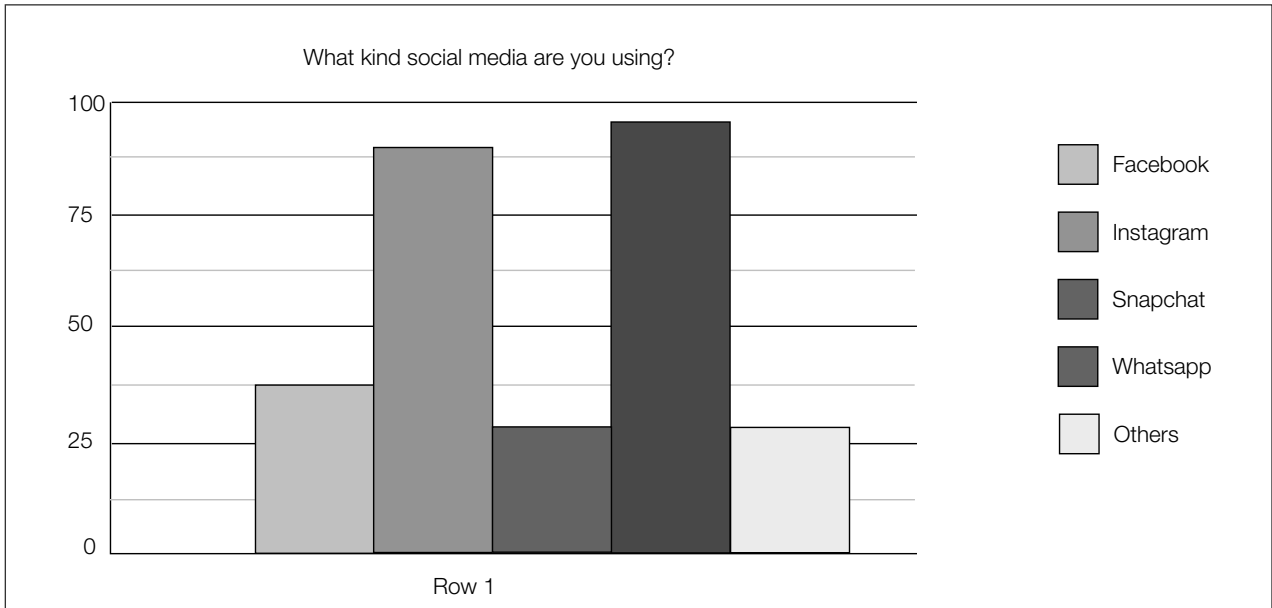
One not acknowledged purpose of social media platforms is to keep people online and monitor their screens for updates which also persuade people to share their personal information with the virtual world. This trend of updating is recent in origin and not yet widely researched, the approach for the study thus was qualitative. Along with the objectives framed, the investigators were also interested in knowing what more could come through the focus group discussions. Excess of everything is bad, so is this the excess of updating on social media? Or is this just the beginning of this trend? Are we making it a habitual response to check updates of other people regularly? Habits generally become a part of an individual's lifestyle. So, is updating and checking for other people's updates has become a habit for us? And is it a good habit or a bad one? The current investigation might not answer all these questions, but could definitely provide a food for thought to future investigations.

The general information collected from the participants suggested that the most popular choice of social media among university students is WhatsApp followed by Instagram, Facebook, and Snapchat respectively (see Figure 1). 79.4% of the total participants are updating their personal information such as travel pictures, selfies, family pictures, shopping pictures, and daily routine pictures, etc. in the virtual world. Meanwhile, only 40.7% of them use social media as a platform for sharing educational or news-related content. 31.4% of participants use social media to create awareness across the public on various topics and 3.6% share content related to finance and trading. 16.5% of participants update their social media with other content such as writings, memes, politics, music, and health-related content (see Figure 2).

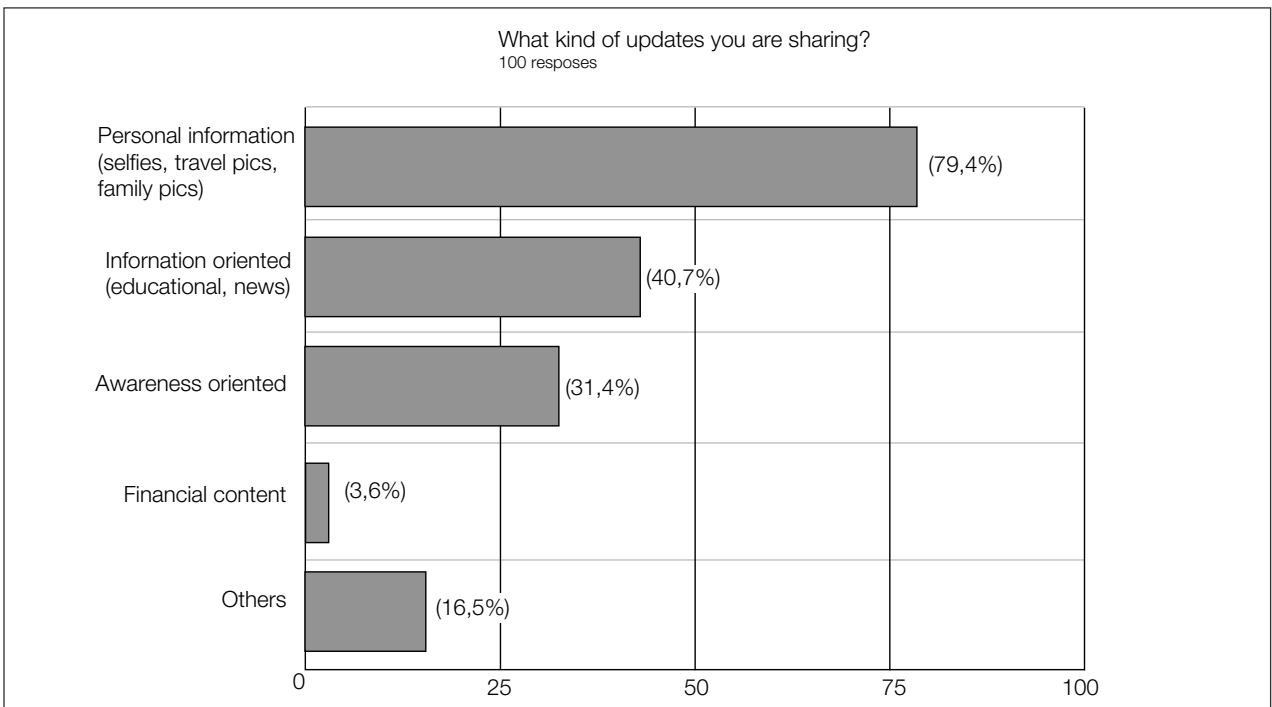
Results from the focus group discussion were structured into different themes based on the key questions used. The following are the themes that emerged from the transcript analysis:

When asked about the posting of personal information on

**Figure 1** – Social media used by the participants



**Figure 2** – Information uploaded on social media



social media, it became clear that most of the participants do post their personal information frequently on social media. The themes reported following:

The reasons why they post, that emerged from the themes, are mainly social acceptance through approval and recognition from society. Seeking approval from society and peers was raised as a popular theme in the focus group discussions. This approval can come in many ways such as from comments (or compliments), likes, and the number of views. Participants tend to maintain uniformity on their feed and make it more aesthetically beautiful in order to gain more recognition and approval from their followers. More likes, comments, and shares on a post make participants feel more socially recognized and accepted. As reported by APA, social acceptance is the formal or informal admission of an individual into some group, and it indicates the absence of social disapproval (APA, *Dictionary of Psychology*). When people get more views, likes or comments on their posts, it might confirm that their view is shared by others also, indicating the absence of social disapproval. Like as told by one of the participants:

“I feel more accepted by my friends if they like my post and if they share... then that would mean I am accepted by everyone. Just imagine you are putting a post and no one is viewing it, no one is liking it... Man! You will feel completely unwanted” (as told by a male subject, age 21 years).

Another main reason for posting was found to be attention seeking. Participants reported that the updating is sometimes the only way they get attention from others. Being seen sometimes is necessary to feel one is valuable to others. Attention-seeking behaviour is an unconscious or conscious attempt to become a centre of attention, to gain validation or admiration from others. Such behaviour may be driven by low self-esteem, jealousy and loneliness (Frothingham, 2020). Just as reported by one of the participants:

“How long can you stay without getting noticed by others? We all love to get attention. That’s a humane thing, we can’t stay lonely, without getting noticed by others... I want everyone to notice my new dress, notice my new phone. What’s the point in hiding stuff from the world” (as told by a female subject, aged 22 years).

Further, from FGDs it was discerned that for many updaters self-verification could be the reason for posting on social media. Participants in study tend to share selfies, travel pictures, family moments, and other personal happy moments with their followers to show others that they are

living a happy life, but in reality this could be a call for self-verification. As mentioned in self-verification theory, people form their self-views by observing how others treat them (Swann, 2012), and they want others to perceive them the way they themselves perceive (Evans, 2023). In other words, people want to be known and understood by the world according to their firmly held beliefs and feelings about their own-selves (Swann & Read, 1981). So, updaters might be posting an ideal image of themselves and in return might be expecting viewers to consider them like that only. As reported by one of the participants:

“I am a cool-type, happy-go-lucky person, and I want everyone to see only that side of mine. So I make sure I never miss uploading my vacation pictures. So that my friends don’t find me boring and a dull person” (as told by a male subject, age 23 years).

Another main theme that emerged was that many of the updaters were found to have insecurity issues. Some had relationship issues, some were having inferiority complexes, some felt they are not good academically, etc. and such updaters were posting completely opposite status. For example, someone who perceived herself as not meeting beauty standards of society, will use filters to post a picture as per the beauty standards of society. A participant was having relationship issues, yet was posting happy couple pictures on Instagram. So, this in some way resolves the insecurity issues of updaters. In other words, updaters might be unconsciously using the defence of reaction formation. Reaction formation is a defense mechanism proposed by Sigmund Freud where people tend to express the opposite of their true emotions and feelings. Just as reported by a study, people who constantly post Facebook status about their relationships are insecure and they post in order to get attention so as to get themselves distracted from their own feelings of insecurities (Hutchinson, 2015). Thus, updaters might be updating photos that are not reality, but a dream or longing for that fake-reality. As reported by one of the participants:

“I used to post my parents’ happy photos to show others that my parents are an ideal couple, but in reality, they won’t talk to each other” (as told by a male subject, age 22 years).

When asked from participants who don’t post or post little, most of them talked about valuing their privacy and never felt a need for sharing with a wide audience. Overall, the schematic analysis of themes for the question ‘why do people post on social media’ reveals that updaters might be longing for social acceptance, or seeking attention, or might



be posting for self-verification or finally they might have insecurity issues.

When investigated if updaters have more offline connections or online connections the themes suggested two categories of participants.

One category was more comfortable with online connections and hence had more online friends. Such participants were more comfortable with friends and even strange people of the virtual world. They felt that they don't have to do much for communicating in social media. For example, they don't have to worry about the feelings of their audience much; they don't have to display offline skills of communication such as manners, etiquettes, gestures, eye contact, body language, etc.; don't have to dress up nicely for any kind of usual conversation; don't have to worry about language issues such as stammering, lack of confidence, etc. Further online communications are self-paced, where replying back immediately is not required and it is not generally considered offensive to reply as per one's convenience. Online communications are generally straightforward and to the point, hence the awkwardness of formal, polite, wilful or non-wilful communication is not there in online communication. The ease of communication in the virtual world makes them interact more with online people. Thus, participants with lack of communication skills for the offline world had more online connections than the offline ones. But one noticeable trend for this category of participants was that although they had more online connections, they did not update much on social media. They generally are the observers of the happenings in other people's lives rather than displaying their personal information on social media. Introverts generally come under this category. Although they are more comfortable with online connections and have more online connections, still they don't post much about their personal lives on social media. As reported by some of the participants:

"Real life conversations are clumsy; I prefer to be in my own world of social media. But I also like to keep an eye on the lives of my friends through social media, instead of telling what I am going through" (as told by a male subject, age 25 years).

Then for the second category are the participants who were high on both online and offline connections. These are the people who do not fear the communication of the real world and also actively participate over social media. They don't hesitate for self-disclosure and sharing their personal

information on social media. These are extroverted people who enjoy both online as well as offline communication. Thus, the extrovert participants had both online as well as offline connections and also tended to post their personal information on social media. As reported by one of the participants:

"Most of my friends know that I got engaged, but I want others, such as friends of friends, my school friends, college friends and many others to know the same. It is really exciting to let people know about big happenings in my life. So, post it on social media..." (as told by a female subject, age 30 years).

Both categories have empirical evidence in their favours. Introverts are often successful in online interactions, as they find it easier to express themselves online, and therefore sometimes prefer it. Since, introverts feel the need to control the amount of social interaction and social media is the platform where they get this ability (Baxter, 1990). Social platforms, such as Facebook, offer introverts a painless and promising alternative to real-life face-to-face interactions (Harbaugh, 2010). Therefore, introverts prefer to use social media more for online interactions, but due to their personal nature might not be sharing their personal information much on social media platforms. Furthermore, extroverts are more outgoing and gregarious; thus, they may post frequently, interact with others, and actively participate in social media conversations. Extroverts are very active on social media updating their personal information frequently (Ross et al., 2009). Online social sharing highlights their high level of sociability thus extroverts are eager to share their experiences with friends. Along with being passionate, cheerful, self-assured, and extroverted, extroverts are also talkative. These traits suggest that extraversion may be particularly associated with online self-disclosure and hence might be uploading more personal information on social media.

This section will be explaining the outcome of the thematic analysis for next two questions of FGDs: when do updaters post more; when you are sad or happy, anxious or calm, stressed or relaxed? And does updating bring happiness or some change in your mood?

When asked about their mood while posting pictures most updaters reported that although they post whenever they feel like, but when they are undergoing emotional upheaval that time, they have more urge to post on social media. It was found that the experience of negative emotions makes the updaters post more. Such as some participants revealed that they post more when they are angry, sad, hurt and are

feeling low. Another finding from the thematic analysis for this question is that there are two categories of people who update during stressful and emotional times.

One category consists of updaters who post updates which are exactly similar to their current moods. For example, an updater reported to post quotes pertaining to heart-break when she was having a break-up. Another reported of posting sad and gloomy animated pictures when he himself feels low. Some reported to upload sick pictures of themselves when they get sick. This category of updaters reported that when people reply to their posts, they feel better and that changes their mood to some levels. More attention they get from viewers, the better their mood gets. The posts of such updaters may be a cry for seeking attention, as attention seeking, just explained previously, is an important reason for frequent updating on social media.

The other category consists of updaters who post the complete opposite of their current moods. For example, an updater reported to post his travel pictures at times when he feels bored and tired. Another told about posting healthy food pictures when he started gaining weight. Thus, for this category of updaters, it could be asserted that, as explained in the previous text, they might be unconsciously using the defense of reaction formation to deal with their insecurity issues.

Overall, it could be concluded that those who share personal information on social media revealed that posting pictures changes their mood, meanwhile those who are not active users said that posting doesn't make any impact on their mood. A person's mood can be affected in a variety of ways by sharing a photo on social media. According to research, sharing selfies on social media may affect self-esteem, and 'likes' on those posts may alter how young people feel about themselves. Face pleasure increased more after sharing selfies which received likes and comments (Coulthard & Ogden, 2018). Just as reported by following updaters:

"I used to share photos whenever I am feeling lonely, sharing stories helps to start the conversation with others which makes me feel better... also getting comments and likes from social media boosts my energy and it feels good for me" (as told by a male subject, age 26 years).

Overall, both categories of people reported that they feel better when people reply back to their posts. And definitely they feel better not after posting, but after getting viewers, comments and likes for their posts. And if they don't get viewers, likes or comments for their post their mood

deteriorates further. On the whole, it could be discerned that emotional upheaval makes updaters post more, since it could be providing them instant gratification when people view, like or comment on their posts. Getting reassurance from others is mandatory for social network users and the algorithm of social media is designed for this. According to the Uses and Gratifications Theory (UGT) people use media for the gratification of various needs including cognitive, affective, tension release, and social integrative needs (Ruggiero, 2000). Research suggests that social networking sites provide similar gratification (Sundar & Limperos, 2013).

This section is discussing the schematic analysis of the next question, asking about if the updaters feel good or bad about the thought that others could experience Fear of Missing Out on your posts. The participants were made clear about the concept of Fear of Missing Out (or FOMO). FOMO is an emotional response to the belief that other people are living better, have more satisfying lives and they are missing out on important opportunities in life (Brush, 2023). Majority of the participants were already aware of this concept. But when asked about participants' thoughts on others' Fear of Missing Out because of their posts, most of them responded as they never think about their viewers' feelings before or after updating. They mentioned that viewers watch their posts at their own choice. The viewers have all the freedom not to view their posts. The updaters never force anyone to view, like or comment on their posts, just as mentioned by following updaters:

"If you feel that your life is lacking something after viewing other people's posts, then simply don't watch. Use your brains..." (as told by a female subject, age 30 years).

Most of the updaters had a neutral response for this question, where they don't intentionally want to make their viewers feel good or bad about their updates. Although few reported that through updating they simply share their happiness or feelings with a wide audience. But there were many who reported to be concerned only with their own emotionality while updating. Such updaters could be either apathetic (where they simply don't have any concern for the feelings of their viewers); or narcissistic (having exaggerated view of one's attractiveness and wants to share it with others, where they are preoccupied with themselves only or lack empathy for their viewers). While people with great empathy would likely feel concerned for others, resulting in prosocial online behaviour, those with high dark triads would likely find offending others or acting selfishly appealing (Sparavec,

March & Grieve, 2022). Further, social media platforms such as Facebook, could be promoting narcissistic traits in its users (Alloway, Runac, Quershi & Kemp, 2014).

The next theme analysis is for the questions meant to have an idea about the general perception of participants about their lives, specifically how satisfied they are with their lives. And also, about how do the participants feel if they are an important part of their family and society, the themes that emerged report the following:

the FGDs revealed that participants who either don't update and update a little, were more or less satisfied with their lives. They were found to have goals and were working to achieve those goals. They were happy with their relations with family, teachers and friends and were having a support system when they needed that in crises. Overall, such participants were found to have adequate satisfaction from life. On the other hand, most of the updaters were found to be not much satisfied with their lives. Updaters were not clear about their life goals and some of them even had dissatisfaction with the fields they have chosen, which also adds to their dissatisfaction with life. They were dissatisfied with their interpersonal relationships and either lacked a support system or could not rely on the support system during crises. Just like Erikson's theory of psychosocial development in young adulthood, individuals feel dissatisfaction when they are still confused about their identity and when they feel isolated when not finding an intimate relationship (Hatano et al., 2022). Just as told by an updater:

"I don't feel satisfied maybe because I didn't reach anywhere, I am confused with my life and I don't know what to do next and most importantly I don't have anyone to guide me on this" (as told by a male subject, age 30 years).

In the context of family and society, those who don't update or update a little, most felt themselves as responsible and therefore an important part of their family and society. But the updaters were not sure about being an important part of either, they had certain doubts responding yes or no. Most of them responded that they are not accountable to society much and hence could be considered as not of much importance to society, and only a few considered themselves as important to their families. Such participants felt exhausted with the questions from the society and family regarding their personal life, career and future prospects. A significant number of updaters felt not being loved by family or had disputed families. They were not getting enough validation both from society and family. As mentioned

above, that updaters are pressurised with many stressors and societal and familial pressures and demands could be one of these. As reported by following participants:

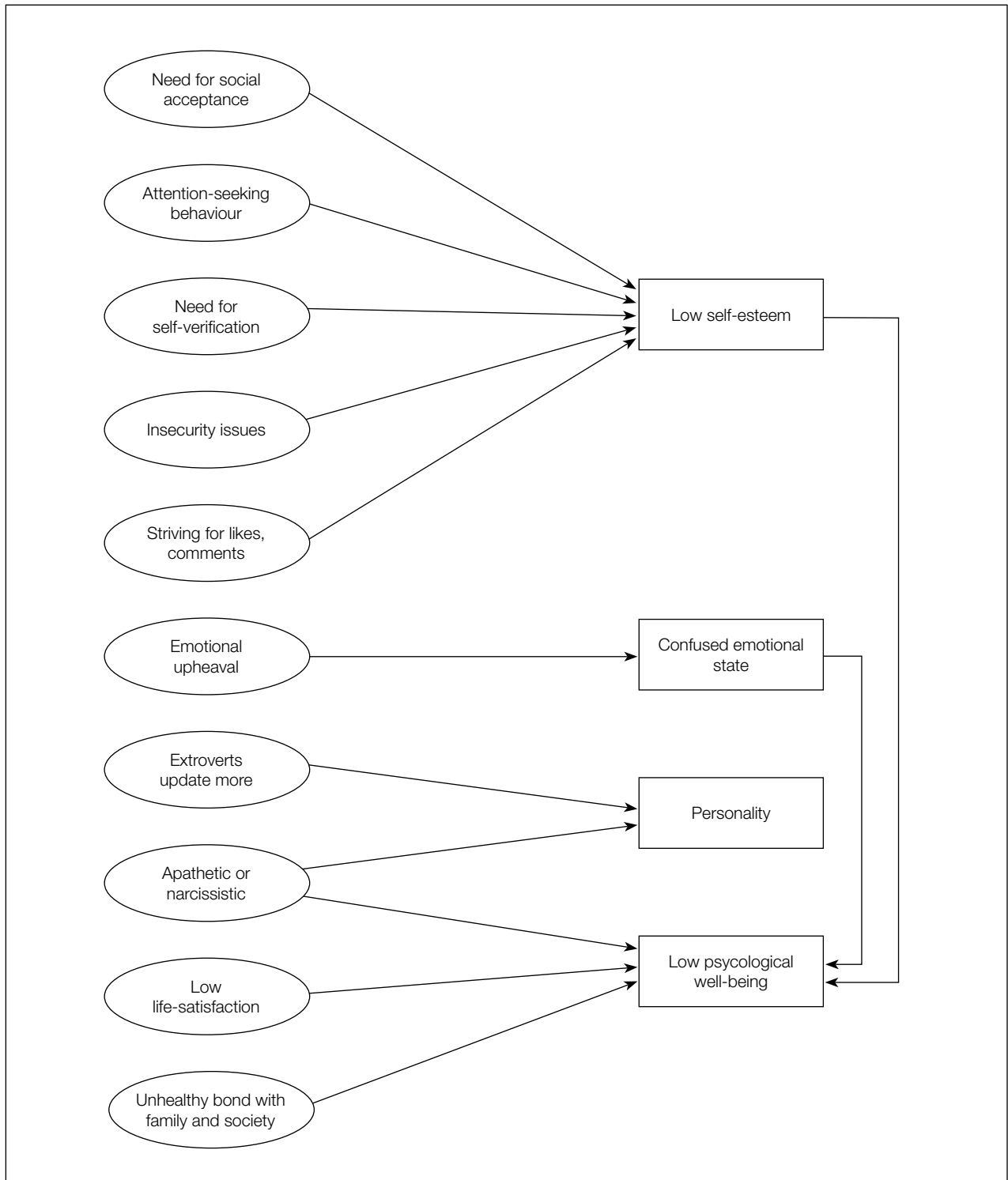
"I often feel that I am not good enough to be loved by others and am not sure whether I am important to society, I never felt that I am a responsible person" (as told by a female subject, age 29 years).

So for such updaters, who are facing life stressors, social media could be serving as an escape or distraction from daily stressors of life. Staying occupied with social media and playing an active role over it, such as updating frequently could serve as a temporary distractor for them. This could be an unhealthy way of coping for them. Social media usage has been found to be a maladaptive coping mechanism (Maftei, Merlici & Danila, 2023). Social media use can be an emotion-focused coping as a distraction (Dilek, 2020). Social media usage provides coping during stressful times for many individuals (Wolfers & Schneider, 2020). To conclude it could be stated that many times updaters could be posting to get distracted from a dissatisfied life owing to their life stressors, familial and societal pressures, posting and then getting occupied with the cycle of viewers, likes and comments could be a temporary relief for them.

The major findings from the theme analysis of FGDs has been discussed in the above section. But the major objective of this qualitative study was to investigate how various psychological elements interact to affect people's decisions to update their personal information on social media. These themes shed important light on various psychological factors which make people update or disclose personal information on social networking sites. All this has been summarized in Figure 3.

As shown in the figure, updaters have a high need for social approval, along with attention seeking behaviour, need for self-verification and various insecurity issues. These factors contribute to a lower self-esteem for updaters. Since self-esteem is the way an individual values and perceives himself or herself. In short, it is an individual's sense of personal worth or value. According to Rosenberg (1965), self-esteem is one's favourable or unfavourable attitude towards oneself. Various factors contribute towards self-esteem, such as personality, life experiences, social circumstances, reactions of others, social approval, etc. (Ackerman, 2018). A person with high self-esteem does not seek much for external validation. Although positive social factors add to self-esteem, yet it is not entirely based on these. But for updaters factors

Figure 3 – Summary of themes



such as need for acceptance (Kimble & Helmreich, 2013), attention-seeking behaviour (Frothingham, 2020), need for self-verification (Talaifar & Swann, 2017) and insecurity issues (Abdulgaffar, Eluwole, Dambo & Abdulbaqi, 2021) clearly indicate low self-esteem, as self for them is perceived from the external validation through viewers, likes and comments.

The support from low self-esteem of updaters also comes from the finding that the more the views, likes and comments for the posts, the better the mood of the updaters will get and vice versa is also true. Updaters are interested in sharing their ideal self on social media rather than real ones. Self-presentation on social media depends on different factors. The triangular theory of self suggests that during the social media era, the self can be presented in three ways, represented self, registered self, and inferred self. The user can represent their autobiographical memory as represented self and the technological characteristics of social media help the user in sharing information based on this motive which can be turned into a registered self. Virtual spectators make an inference from the registered self which creates an inferred self (Wang, 2022). Some people may have low self-esteem and use social media to get approval from others. From analysing the transcript, participants can gain likes, comments, and attention by posting personal images, which momentarily improves their self-esteem. Their vulnerability to variations in validation arises from an overreliance on social media feedback for their sense of self-esteem. According to a study, self-esteem was positively correlated with the number of likes people received on their Facebook profile photographs (Burrow & Rainone, 2017). Another study revealed that increased feedback relevance was linked to lower self-esteem and social standing; low social standing was also linked to increased engagement in several Instagram activities and opting to have a public profile (Diefenbach & Anders, 2022).

Further, the updaters generally post more under emotional upheavals, under the situations where they face negative emotions such as anger, sadness, despair, etc. The instant gratification that comes from the views, likes and comments comfort their emotionality at that time. And if they don't get viewers, likes or comments for their post their mood deteriorates further. According to Stsiampkouskaya and colleagues (Stsiampkouskaya, Joinson, Piwek & Ahlbom, 2021) also, users felt excited and enthusiastic after receiving more likes and sad and upset after receiving less likes. This clearly suggests that the on-off switch for making their

emotions better during the crisis is in the hands of viewers. The updaters themselves can't manage their emotions well under such situations. And the updaters themselves are not aware that viewers are managing their emotional state, since instant gratification happens at the level of unconsciousness. Therefore, the emotional state of updaters can be considered as a confused emotional state.

The themes also suggested some important observations about the personality of updaters. Most updaters were found to be the extrovert individuals. Although introverts were found to be more comfortable with the social media world, yet they don't display much of their personal information on social media. Just like the real world, in the virtual-world also introverts are quiet observers. Extroverts are more enthusiastic to share their experiences with others on social medium, as for them it is a platform that helps to reach people (Bowden-Green Hinds & Joinson, 2020). Extroverts often want to start a conversation with others by updating themselves on the virtual world. They also work to expand their social connections and build new networks (Guo et al., 2018), thereby being more active on social media, hence updating frequently on social media.

Other personality traits observed for updaters were apathy and narcissism. Updaters could demonstrate either being apathetic or being narcissistic. Apathetic updaters lack a general concern for the feelings of their viewers, whereas narcissistic updaters are consumed with their own attractiveness on social media, seeking too much attention and a need to be admired by viewers. Social media usage and being continuously active on it is making its users apathetic (Alfiah et al., 2021). Owing to the increased use of social media, a study in 2010 reported that 75% of students rated themselves as less empathetic than an average student of 1980, 30 years ago, with an exceptionally steep decline in empathy from 2000 to 2010 (as cited in Chan, 2015). Hence exploitation and over indulgence in social media might be making updaters comparatively more apathetic, where they generally are not concerned with viewers' experience of FOMO after viewing their posts.

Another set of updaters was found to exhibit narcissistic traits. Where such updaters were just concerned with the display of their pictures, lacking the ability to understand or care about the feelings of others such as those of FOMO in viewers. According to Angela Karanja, social media has created an environment where the number of followers and likes are a measure of success, and social media has fueled

youths' obsession to update for attention and validation. This often starts a cycle of addiction for getting more followers and likes, in order to fuel self-esteem. In an attempt to maintain the online image, users get obsessed with how they are perceived by viewers (cited in Yara, 2023), thereby posting the best pictures of theirs every time, and hence maintaining the cycle of likes and posting even better. Where every like might be strengthening their belief towards their own attractiveness, strengthening further this belief more and more with every new post, to the extent of rendering updaters indifferent to the feelings of viewers with a heightened self-occupation finally paving towards narcissism.

Finally, the analysis revealed updaters to have low life satisfaction due to various stressors of life, with unhealthy familial and societal bonds adding more to it, thereby suggesting the low psychological well-being of updaters. Overall many factors were found to indirectly contribute towards the low psychological well-being of updaters. These are low self-esteem (due to the need for social acceptance, attention-seeking behaviour, need for self-verification and insecurity issues of updaters), confused emotional state, and apathetic or narcissistic personality traits. Thus, for updaters lower psychological well-being could be concluded from the thematic analysis. The research on social media use and activity supports this. Where the higher the indulgence, the lower the psychological well-being has been found for the users (such as Chatterjee, 2020; Choi & Noh, 2019; Chotpitayasonondh & Douglas, 2018; Jiao, Jo & Sarigollu, 2017).

Thus, this qualitative study has found that updating statuses on a frequent basis does influence the self-esteem, emotional state, personality and overall psychological well-being of updaters. Social media use has become an inseparable part of our lives. While on one side social media can be a powerful tool, on the other extreme it could be an ailment too. It is affecting human psychology. This study was an attempt to highlight that even a small activity on social media i.e., updating status is exerting its influence on human psychology and behaviour. Most of the unhealthy behaviours through social media are considered normal and acceptable in today's world. Think rationally, is it normal to be online even while doing business on a toilet seat? Is it normal to carry a smartphone throughout the day in our pockets? Is it normal to show separation anxiety to smartphones and cyberspace even for a few minutes? Is it normal to be immersed in a virtual world at the cost of complete absence from the real-world? Is it normal to display personal information through

status updates to an endless audience who is completely strange to us? Why have all these previously unacceptable behaviours become a part of today's techno-culture? All such questions seek answers through research. All such questions could not be answered just through one investigation. More research investigations should be aimed in this direction. This study was just one attempt to highlight that even a minor activity of updating frequently can impact updaters, and the results have suggested that this impact is highly negative. Not all unhealthy activities on social media need approval and acceptance from all, status updating when excess, becomes one such unhealthy activity that definitely needs to be controlled. This investigation has suggested that future investigations should also aim at finding interventions specifically in the context of cyberspace and framing policies for the implementation of appropriate behaviour and etiquettes in cyberspace.

## Limitations of study

This study did have a few limitations. The first limitation was the sample of this research. The sample for this study was quite small and although composed of students from diverse backgrounds still needs little caution in generalising to other populations. Further gender differences in updating were not considered. Another major limitation of this study was the non-availability of sufficient empirical support, due to the absence of research in the field of study. The problem under investigation is a highly under-investigated topic. Hence the empirical support for obtained results either come from a few research publications or from some published articles.

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# Validation study of the Italian version of the Self-regulation for Learning Online (SRL-O) questionnaire in university students

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✎ **ABSTRACT.** Lo scopo di questo studio è contribuire alla validazione dello strumento *Self-regulation for Learning Online (SRL-O) questionnaire* su un campione di 193 studenti universitari italiani. Dall'analisi fattoriale confermativa è emersa una struttura a dieci fattori, sostanzialmente equivalente alla versione originale dello strumento, suggerendo dunque una comparabilità del costrutto di apprendimento autoregolato tra le diverse culture. I dieci fattori SRL-O hanno mostrato correlazioni significative con gli orientamenti verso l'apprendimento posseduti dagli studenti. L'uso dello strumento SRL-O permetterà di identificare gli studenti universitari a rischio di fallimento accademico e intervenire per promuovere alti livelli di autoregolazione nell'apprendimento online.

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✎ **SUMMARY.** With more learning occurring online, it is critical to have current ways of inferring how students in education are managing their learning in online and blended environments. The aim of this study is to contribute to the validation of the *Self-regulation for Learning Online (SRL-O; Broadbent et al., 2023)* questionnaire on a sample of Italian university students by analyzing its confirmatory structure and convergent validity. 193 Italian university students of master's and bachelor's degree programs completed a self-report questionnaire on online self-regulated learning (translated from the SRL-O by Broadbent et al., 2023), and a self-report instrument to assess conceptions on learning (LO-COMPASS; Vettori et al., 2020; Vezzani et al., 2023) for convergent validity. A confirmatory factor analysis confirmed the ten-factor structure for a forty-four-item version, suggesting comparability in self-regulated learning across cultures. The SRL-O factors showed significant correlations with LO-COMPASS factors. The SRL-O is a valid and reliable instrument, useful to identify university students at risk of academic failure.

**Keywords:** Self-regulated learning, Online learning, University students, Conceptions of learning

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## INTRODUCTION

Self-regulated learning (SRL) is defined as the learner's ability to control his/her own learning environment. SRL plays a key role in studying in higher education learning environments (Dent & Koenka, 2016; Theobald, 2021). This observation is increasingly the case given the amount of flexibility provided to students through new pedagogical approaches such as those associated with online and blended learning (Pillay, Irving & Tones, 2007; Yen, 2020). Results from numerous studies indicate that students who take a self-regulated approach are able to adopt effective study strategies and adapt their actions to different learning contexts and goals (e.g., Zimmerman, 2000), resulting in academic successes over school years (e.g., Duckworth & Carlson, 2013) until university (e.g., Kryshko, Fleischer, Waldeyer, Wirth & Leutner, 2020).

Understanding and assessing how students self-regulate their learning experiences is particularly important at university level to identify areas of strengths and areas in need of improvement. University students can find it difficult to manage learning online for several reasons. Students adapt their learning strategies and self-regulation to the characteristics of study tasks and instructional settings (García-Pérez, Fraile & Panadero, 2021). Increased flexibility in online learning means that more of the onus on decision-making is placed into students. The main critical challenges involve students making good decisions about learning strategies and staying motivated (Huang, Tu, He, Han & Wu, 2023).

The present study aimed to provide the validation of the Italian version of a new and agile measure, the *Self-regulation for Learning Online (SRL-O)* questionnaire (Broadbent et al., 2023) - originally designed specifically for undergraduate students in the [country] educational context - which assesses the profile of self-regulation approach in online learning environments. To our knowledge, there are no currently validated measures of university students' self-regulation for learning online in the Italian context. The aim of this cross-cultural validation study is to provide a reliable instrument for assessing and promoting undergraduate students' online self-regulation, easily usable by university learning support services and students' themselves.

### Self-regulated learning

Learners need to implement and integrate several cognitive, metacognitive, behavioural, motivational and

affective processes to control their own learning environment and pursue learning goals (Tarchi et al., 2022). Several theoretical models have been validated for self-regulated learning (Panadero, 2017). Despite some differences, all models agree that SRL is composed of different cyclical phases: (a) preparation, in which the learner analyzes the task, plans, identifies goals; (b) performance, in which the learner implements the processes need to complete the task (task strategies) while monitoring the progress; and (c) evaluation, in which the student assesses his/her performance, seeks help and reflects on the learning process for future performances.

While self-regulated learning has received wide attention in the context of traditional learning environments, the use of online environments for learning and studying is extensively spreading across cultures and educational systems, which requires a re-consideration of our approach to SRL to better support student's learning processes and professional development activities for teachers (Matteucci & Tomasetto, 2018). Several studies have extended the relevance of SRL to online learning environments too, although with different features (Anthonysamy, Koo & Hew, 2020; Broadbent, 2017; Broadbent et al., 2015; Roth, Ogrin & Schmitz, 2016; Wong et al., 2019). For instance, online learning environments require higher resources in planning and monitoring for studying and supporting one's motivation to learn than traditional environments (Weinstein, Acee & Jung, 2011). Moreover, asynchronistic and synchronistic interaction and communication in online learning require active participation, effort regulation and strategies to stimulate motivation (Broadbent et al., 2015). It is important to determine appropriate measures to assess undergraduate students' self-regulation in online environments to support academic success challenged by the new characteristics of online learning settings.

### Self-regulated learning and academic achievement

Previous research in traditional face-to-face settings revealed that the ability to self-regulate learning is crucial to succeed at school and university. Students' ability to plan, monitor and evaluate their own learning activities allow them to reach academic goals and also be aware of the need for help-seeking. For these reasons, the most effective teaching strategies to promote students' self-regulated learning have

been illuminated by scholars (e.g., Russell, Baik, Ryan & Molloy, 2022). However, the increase of online learning in the last two decades have stimulated several researchers to examine self-regulation in online learning environments (see, systematic review by Martin, Sun & Westine, 2020). In a meta-analysis including either online or offline/web-based educational setting, Jansen and colleagues (Jansen, Van Leeuwen, Janssen, Jak & Kester, 2019) revealed a positive effect of SRL interventions on both SRL activity as well as on achievement also thanks to motivational and behavioral levels of self-regulated learning. In a recent scoping review, Xu and colleagues (Xu, Zhao, Liew, Zhou & Kogut, 2023) explored the relation between self-regulated learning (SRL) and academic achievement in online and blended learning environments from intervention and cross-sectional studies. They explored various countries, study characteristics, methodology, and SRL dimensions and strategies. They reported the importance of self-regulation on academic achievement in online and blended learning. Finally, they also reported that research on adolescents' SRL cognitive and emotion regulation strategies in online learning contexts is urgently needed to inform instructional design and approaches.

To prevent academic failure and dropout, it is important to identify reliable and practical instruments to assess students' SRL. However, SRL instruments are predominantly developed for English speaking countries, and are not often extended across countries and educational systems. Translating and validating an English-speaking SRL instrument would achieve two important goals: extending SRL assessment to non-English-speaking countries and allowing cross-cultural comparison of SRL.

From a theoretical perspective, self-regulation connected to online learning maintains its multidimensional nature being composed by several sub-dimensions, such as online self-efficacy, online intrinsic and extrinsic motivation, online negative achievement emotion, planning and time management, and online social support strategies). From the assessment perspective, it is important to evaluate undergraduate students' self-regulation in online learning through an instrument able to cover this wide range of motivational regulation and learning strategies' dimensions. Broadbent and colleagues (2023) have recently developed an instrument specifically assessing self-regulated learning in online or blended learning, the *Self-regulation for Learning Online (SRL-O)* questionnaire. SRL-O has been selected

as, in comparison with other existing instruments, it has two important strengths: i) it is a comprehensive measure that includes motivational beliefs (such as self-efficacy) and learning strategies (such as metacognition); and ii) it has been specifically developed for online and blended learning contexts.

## THE PRESENT STUDY

The present study aims to analyze the psychometric properties of the Italian translation of *Self-regulation for Learning Online (SRL-O)* questionnaire (Broadbent et al., 2023) for university students with current and prior experiences with online and blended learning. We expected a substantial confirmation of the original factorial structure of the instrument. We also investigated the association between SRL-O factors and students' learning orientations for convergent validity purposes. Students' mental models about learning are a multidimensional construct encompassing regulative and motivational aspects of learning (Pérez-Tello, Antonietti, Marchetti & Liverta Sempio, 2005). Learning orientations were assessed with an instrument previously validated for the Italian population, the *Learning Orientation-Cognition Metacognition Participation Assessment questionnaire (LO-COMPASS)*; see Vettori et al., 2020; Vettori et al., 2022; Vezzani et al., 2023).

## METHOD

### Participants and procedure

We recruited a sample of 360 Italian university students aged between 19 and 59 years ( $M = 22 \pm 3.25$ ; 13.7% male, 85.2% female and 1.1% non-binary/third gender or "I prefer not to answer"). Moreover, 87.6% were master's degree Psychology students in the first year and 12.5% were bachelor's degree Languages, Literatures and Intercultural Studies students in the third year. All the participants had previous experience with online and blended learning. We administered our Italian translation of the *Self-regulation for Learning Online* questionnaire (SRL-O; Broadbent et al., 2023) and the Italian self-report *Learning Orientation-Cognition Metacognition Participation Assessment questionnaire (LO-COMPASS)*; Vettori et al., 2020; Vettori et al., 2022; Vezzani et al., 2023)

used as a measure of convergent validity. The present study was approved by the ethical committee of the Department of Education, Languages, Intercultures, Literatures and Psychology, University of Florence, Italy. The study was conducted during regular class time in presence. Students accessed an online platform (Qualtrics) through their own devices. The online questionnaire included: demographic questions, the SRL-O questionnaire and the LO-COMPASS questionnaire.

## Measures

- *Self-regulation for Learning Online (SRL-O)* questionnaire: it consists of 44-items and it measures ten factors: (1) online self-efficacy, (2) online intrinsic motivation, (3) online extrinsic motivation, (4) online negative achievement emotion, (5) planning and time management, (6) metacognition, (7) study environment, (8) online effort regulation, (9) online social support, and (10) online task strategies. Students respond on a 7-point scale ranging from 1 = not true for me to 7 = very true for me. The psychometric values were the following:  $\chi^2_{(850)} = 1478.31$ ,  $p < .001$ ,  $\chi^2/df = 1.74$ , CFI = .901, RMSEA = .048. The original English version of the SRL-O questionnaire was translated into Italian language and back-translated for language validation. See Appendix for Italian translation of the SRL-O.
- *Learning Orientation-Cognition Metacognition Participation Assessment (LO-COMPASS)*: the self-report questionnaire (see Vettori et al., 2020; Vettori et al., 2022; Vezzani et al., 2023) was used as a measure of convergent validity. LO-COMPASS consists of 20 items scored on a five-point rating scale ranging from 1 = strongly disagreeing to 5 = strongly agreeing. The self-report LO-COMPASS shows a 4-factor structure. Each factor showed a good internal coherence, and represents a specific typology of learning pattern of cognitive, affective and regulative dimensions, as follows: (1) Learning as a self-regulated and strategic experience (7 items;  $\omega = .76$ ); (2) Learning as a process of affective, motivational and co-constructive activation of self (5 items;  $\omega = .71$ ); (3) Learning as a guided practice (4 items;  $\omega = .64$ ); and (4) Learning as participation in school practices (4 items;  $\omega = .64$ ). The psychometric values were the following: CFI = .89; RMSEA = .04; SRMR = .06.

## Data analyses

Analyses were conducted using the Jamovi statistical software (2022 Version 2.3). Significant Mardia's multivariate skewness and kurtosis tests (SRL-O kurtosis coefficient: 2256, skewness coefficient: 437,  $p < .001$ ; LO-COMPASS kurtosis coefficient: 437.3, skewness coefficient: 48.1,  $p < .001$ ) violated multivariate normality. However, the Mardia test is sensitive to large sample sizes (Cain, Zhang & Yuan, 2017: in their article, 94% of Mardia's measures were statistically significant when the sample size was larger than 106), thus we explored skewness and kurtosis values for each item. Univariate analysis of individual items showed significant normality regarding skewness and kurtosis of all items. In fact, items ranged between  $-2$  to  $+2$  (Hair, Hult, Ringle & Sarstedt, 2022).

Confirmatory factor analyses (CFAs) were first conducted on each scale to evaluate model fit. The estimation method was maximum likelihood (ML). The adequacy of model fit was verified by referring to conventional cut-offs: non-significant  $\chi^2$  (of notice, the chi-square has several limitations in its use as a goodness-of-fit measure), CFI/TLI  $\geq .90$ , and RMSEA  $\leq .08$  (Hair et al., 2010). For the RMSEA index we also report the 90% confidence intervals.

Furthermore, convergent validity analyses were carried out through a series of correlations.

## RESULTS

### Confirmatory factor analysis and reliability estimation

The confirmatory factor analysis on the Italian translation of SRL-O questionnaire confirmed the original 10-factor structure: (1) online self-efficacy ( $\omega = .81$ ), (2) online intrinsic motivation ( $\omega = .89$ ), (3) online extrinsic motivation ( $\omega = .76$ ), (4) online negative achievement emotion ( $\omega = .87$ ), (5) planning and time management ( $\omega = .83$ ), (6) metacognition ( $\omega = .79$ ), (7) study environment ( $\omega = .77$ ), (8) online effort regulation ( $\omega = .82$ ), (9) online social support ( $\omega = .80$ ), and (10) online task strategies ( $\omega = .65$ ). Factor loadings from confirmatory factor analysis in the SRL-O are reported in Table 1 with standardized estimates.

Initially, the Italian translation of SRL-O showed a slightly sub-optimal goodness-of-fit,  $\chi^2_{(857)} = 1635$ ,  $p < .001$ ,

**Table 1** – Factor loadings from confirmatory factor analysis in the SRL-O with standardized estimates

Factor	Items	Standardized estimates	Z	p
Factor 1 Online self-efficacy	SE1	.72	12.65	<.001
	SE2	.69	13.12	
	SE3	.85	16.39	
	SE4	.68	12.93	
Factor 2 Online intrinsic motivation	IM1	.79	16.30	<.001
	IM2	.91	19.95	
	IM3	.81	16.82	
	IM4	.81	16.83	
	IM5	.60	11.25	
Factor 3 Online extrinsic motivation	EM1	.75	12.59	<.001
	EM2	.75	12.58	
	EM3	.64	11.01	
Factor 4 Online negative achievement emotion	NE1	.66	12.52	<.001
	NE2	.66	12.61	
	NE3	.75	14.89	
	NE4	.89	19.45	
	NE5	.84	17.81	
Factor 5 Online planning and time management	P&TM1	.70	13.09	<.001
	P&TM2	.81	15.88	
	P&TM3	.71	13.45	
	P&TM4	.56	9.79	
	P&TM5	.67	12.26	
Factor 6 Online metacognition	Met1	.49	8.22	<.001
	Met2	.60	10.6	
	Met3	.64	11.66	
	Met4	.75	14.34	
	Met5	.80	15.59	
Factor 7 Online study environment	SET1	.60	9.01	<.001
	SET2	.82	15.96	
	SET3	.87	17.14	
Factor 8 Online effort regulation	ER1	.74	13.70	<.001
	ER2	.74	13.62	
	ER3	.65	11.61	
	ER4	.75	14.12	

*continued on next page*

continued

Factor	Items	Standardized estimates	Z	p
Factor 9 Online social support	SS1	.51	8.89	<.001
	SS2	.55	9.49	
	SS3	.73	13.87	
	SS4	.75	14.16	
	SS5	.79	15.24	
Factor 10 Online task strategies	TS1	.35	5.76	<.001
	TS2	.24	3.92	
	TS3	.79	15.02	
	TS4	.81	15.36	
	TS5	.44	7.51	

*Legenda.* SE = Factor 1 online self-efficacy; IM = Factor 2 online intrinsic motivation; EM = Factor 3 online extrinsic motivation; NE = Factor 4 online negative achievement emotion; P&TM = Factor 5 online planning and time management; Met = Factor 6 online metacognition; SET = Factor 7 online study environment; ER = Factor 8 online effort regulation; SS = Factor 9 online social support; TS = Factor 10 online task strategies.

CFI = .88, TLI = .86, RMSEA = .05 [90% CI = .05; .06]. The fit of the ten-factor model improved after correlating six residuals (all theoretically plausible), as suggested by the analysis of the modification indexes. This model had an acceptable goodness-of-fit,  $\chi^2_{(851)} = 1427$ ,  $p < .001$ , CFI = .91, TLI = .90; RMSEA = .04 [90% CI = .04; .05]. More specifically, we correlated the residuals for the following items:

- online intrinsic motivation item 3 with online intrinsic motivation item 4;
- online planning and time management item 4 with online planning and time management item 5;
- online task strategies item 1 with online task strategies item 2;
- metacognition item 1 with metacognition item 2;
- online effort regulation item 1 with online effort regulation item 2;
- online self-efficacy item 3 with online self-efficacy item 1.

These residual correlations are theoretically justified, as the items are related to the same factor (absorption) and their content is much similar as compared to the other absorption item, which refers to the same component related to self-regulation for learning online.

As shown in Table 2, similarly to Broadbent and colleagues (2023), correlations among factors from CFA ranged from small or moderate to high inter-relations, suggesting that all dimensions measured by this instrument concur to determine a global score of undergraduate students' self-regulation in online learning, but also adequate conceptual separation of these subscales is present. We discuss here the most relevant relationships:

- online extrinsic motivation (SRL-O Factor 3) was significantly positively correlated with online negative achievement emotion ( $p < .001$ ) and correlated weakly with the other SRL-O factors;
- online negative achievement emotion (SRL-O Factor 4) was strongly and negatively correlated with most of SRL-O factors covering motivational regulation and learning strategies' dimensions.

## Convergent validity

The convergent validity of the Italian version of the SRL-O was analyzed by exploring its association with LO-COMPASS, an instrument to investigate students'

**Table 2** – Correlations between SRL-O and LO-COMPASS (n=almost 311)

Factor	SRL-O										LO-COMPASS			
	Factor 1 SE	Factor 2 IM	Factor 3 EM	Factor 4 NE	Factor 5 P&TM	Factor 6 Met	Factor 7 SET	Factor 8 ER	Factor 9 SS	Factor 10 TS	Factor 1 SR	Factor 2 MOT	Factor 3 GP	Factor 4 Part
1 (SE)	–													
2 (IM)	.41***	–												
3 (EM)	-.07	.10	–											
4 (NE)	-.32***	-.12*	.26***	–										
5 (P&TM)	.26***	.20***	-.01	-.3***	–									
6 (Met)	.37***	.24***	.11*	-.09	.4***	–								
7 (SET)	.25***	.26***	-.07	-.35***	.4***	.22***	–							
8 (ER)	.40***	.25***	.06	-.3***	.5***	.54***	.35***	–						
9 (SS)	.15***	.22***	.06	-.12*	.4***	.34***	.27***	.39***	–					
10 (TS)	.28***	.35***	.07	-.11	.34***	.50***	.21***	.39***	.44***	–				
1 (SR)	.31***	.33***	-.07	-.21***	.3***	.33***	.27***	.4***	.25***	.35***	–			
2 (MOT)	.32***	.39***	-.00	-.05	.12	.4***	.12	.26***	.22***	.32***	.39***	–		
3 (GP)	.12	.30***	.23***	.08	.13*	.3***	.05	.33***	.23***	.24***	.3***	.25***	–	
4 (Part)	.36***	.29***	-.07	-.14*	.18**	.24***	.27***	.29***	.07	.24***	.4***	.25***	.14*	–

*Legenda.* SRL-O: SE = Factor 1 online self-efficacy; IM = Factor 2 online intrinsic motivation; EM = Factor 3 online extrinsic motivation; NE = Factor 4 online negative achievement emotion; P&TM = Factor 5 online planning and time management; Met = Factor 6 online metacognition; SET = Factor 7 online study environment; ER = Factor 8 online effort regulation; SS = Factor 9 online social support; TS = Factor 10 online task strategies.

LO-COMPASS: SR = Factor 1 Learning as a self-regulated and strategic experience; MOT = Factor 2 Learning as a process of affective, motivational and co-constructive activation of self; GP = Factor 3 Learning as a guided practice; Part = Factor 4 Learning as participation in school practice.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; values rounded up.



conceptions of learning. Before testing the convergent validity, a confirmatory factor analysis was run for LO-COMPASS. The results confirmed the four-factors model with an acceptable goodness-of-fit,  $\chi^2_{(145)} = 228$ ,  $p < .001$ , CFI = .92, TLI = .91; RMSEA = .04 [90% CI = .03; .05].

Regarding the results of the convergent validity, there was a significant association between the factors of the two questionnaires (see Table 2).

The SRL-O online-academic self-efficacy scale (Factor 1) had a significantly strong positive correlation with all the LO-COMPASS (Factors 1, 2 and 4) scales except Factor 3 - Learning as a guided practice.

The SRL-O intrinsic motivation scale (Factor 2) had a significantly strong positive correlation with all four of the LO-COMPASS scales (Factors 1, 2, 3 and 4).

The SRL-O extrinsic motivation scale (Factor 3) had a significantly unique positive correlation with the LO-COMPASS Factor 3 - Learning as guided practice.

The SRL-O negative achievement emotions scale (Factor 4) had two significantly negative correlations with the LO-COMPASS Factor 1 - Learning as a self-regulated and strategic experience and LO-COMPASS Factor 4 - Learning as participation in school practice.

The SRL-O planning and time management scale (Factor 5) had significantly positive correlations with all the LO-COMPASS scales (Factors 1, 3 and 4) except Factor 2 - Learning as a process of affective, motivational, and co-constructive activation of Self.

The SRL-O metacognition scale (Factor 6) had significantly strong positive correlations with all the LO-COMPASS scales (Factors 1, 2, 3 and 4).

The SRL-O study environment scale (Factor 7) had significantly strong positive correlations with the LO-COMPASS scales Factor 1 - Learning as a self-regulated and strategic experience and Factor 4 - Learning as participation in school practice.

The SRL-O online effort regulation scale (Factor 8) had significantly strong positive correlations with all the LO-COMPASS scales (Factors 1, 2, 3 and 4).

The SRL-O online social support scale (Factor 9) had significantly positive correlations with all the LO-COMPASS scales (Factors 1, 2 and 3) except Factor 4 - Learning as participation in school practice.

The SRL-O online task strategies scale (Factor 10) had significantly strong positive correlation with all the LO-COMPASS scales (Factors 1, 2, 3 and 4).

## DISCUSSION

This study addressed the need to validate reliable and practical tools to assess university students' self-regulation of learning in blended and online contexts. To this end, we identified the SRL-O questionnaire (Broadbent et al., 2023) as it included both motivational and strategic components, and it was specifically designed for online or blended learning environments. The specific objective of the study was to validate and provide the psychometric properties of the Italian translation of the SRL-O. To the best of our knowledge, this is the first study to evaluate its cross-cultural validity. This is a relevant step towards the validation of equivalent instruments across countries and it facilitates cross-cultural comparisons. In an increasingly globalized higher educational system, it is important to assess how students coming from culturally different backgrounds are prepared for online or blended learning environments.

The results provide support for the ten-factor structure of the forty-four-item original version indicating the equivalence in measurement of online self-regulation in Australian and Italian university populations. Importantly, self-regulated learning is a complex set of processes encompassing cognitive, metacognitive as well as motivational aspects of learning. A recent review of instruments assessing self-regulated learning in higher education (Roth et al., 2016) found that only few studies used instruments providing situational specificity. Thus, it is important to validate instruments that are specific to the contextual (online, blended or face-to-face) or cultural characteristics of a learning environment.

Similarly to Broadbent and colleagues (2023), all factors in the SRL-O are related to other factors, supporting the notion of the existence of a latent overarching factor defining the student's approach to the learning task. Indeed, self-regulated learning processes are hypothesized to be intricately linked to an individual's goal structure, that is their own higher-order (such as being successful) and personal goals (such as passing an exam with an excellent grade) (Boekaerts, 2002). In an adaptive perspective, individuals engage most of their efforts to pursue and protect the goals that they value.

Online extrinsic motivation is the only factor that seems unrelated with other SRL factors, except for an association with negative achievement emotions (and a negligible association with the metacognition factor). Extrinsic motivation is controversial: on the one hand it is not ideal to learn because of external sources of motivation (e.g., to

satisfy parents or to be better than anyone else) rather than for internal reasons (e.g., to feel more competent), but on the other hand in complex learning environments sometimes it is important to sustain learning effort through some external reward associated with the completion of an activity. Extrinsic motivation works well with well-defined tasks (e.g., reading 100 pages in a day) but not with ill-defined tasks (e.g., studying well and deeply). For this sort of task, intrinsic motivation is optimal. Lin, McKeachie and Kim (2003) showed that extrinsic motivation is not necessarily incompatible with intrinsic motivation. Specifically, they found that the highest grades were associated with high intrinsic motivation coupled with moderate extrinsic motivation.

Of notice, the analysis suggests the existence of a cluster represented by correlations of medium effect size. Online effort regulation seems well associated with planning and time management. Space and time are two dimensions particularly affected when we move learning from physical to online platforms. Learners have to make more choices (especially if asynchronous video lessons are available) and lack the co-regulation from other peers (Tarchi et al., 2022). Moreover, online effort regulation is associated with the metacognitive factor, suggesting that students are able to sustain effort if metacognitively aware and if efficient in their task strategies (as suggested by the association between metacognition and task strategies).

Finally, SRL-O allows also to investigate the role of emotions in learning within the self-regulated learning framework. Specifically, negative emotions were strongly and negatively associated with several SRL factors covering motivational regulation and learning strategies' dimensions, in line with the predictions of the control-value theory of achievement emotions (see Pekrun, 2006).

The Italian version of the SRL-O was found to have a good convergent validity with the Italian instrument LO-COMPASS measuring learning orientations. The results showed that all dimensions of the SRL-O were associated with regulative and motivational aspects of the LO-COMPASS learning orientations. A recent cross-cultural study confirmed that conceptions of online learning vary between contexts, but are also generally underdeveloped if compared with existing theoretical frameworks (Tarchi et al., 2022). This finding is worrisome especially in light of the results of the present study, which confirm an association between conceptions of learning and self-regulated learning. Specifically, among SRL

factors, intrinsic motivation, metacognition, effort regulation, and task strategies are associated with all the dimensions of concepts of learning, that is, considering learning as a self-regulated, strategic, affective, motivational, co-constructive, guided and participative experience.

## Limitations

Some limitations should be considered when considering our results. Firstly, the study was conducted with a population of higher education students from the Social Sciences and Humanities disciplines. It is still unclear the extent to which SRL is discipline-general or -specific (see Bembunty, Cleary & Kitsantas, 2013; Rotgans & Schmidt, 2009; Vanderstoep, Pintrich & Fagerlin, 1996), thus future studies should replicate the validation with students from the physical, engineering, and life sciences. Secondly, SRL competences may improve as students' progress in their higher education studies, thus it would be interesting to investigate differences across different cohorts of students (e.g., freshmen vs graduate students). Thirdly, there may be a gap between what students consider important to do and what students actually do when studying online. Thus, self-report measures, such as the SRL-O, should be validated with instruments tapping on genuine learning processes, such as learning diaries (e.g., Schmitz & Perels, 2011).

## CONCLUSIONS

The present study introduced a new instrument in the Italian context to assess university students' self-regulation in blended and online learning. The instrument might be adopted for research purposes, especially to investigate the relations between online self-regulation and academic outcomes in online and blended environments. Self-regulated learning may provide the theoretical framework to identify learning analytics and support students through an adaptive system (Lodge et al., 2018). The instrument could also be useful for prevention interventions or tutoring sessions to improve students' awareness of their own strengths and weaknesses when learning online. Higher education all over the world are building increasingly inclusive systems and this instrument may be useful for academic support services.

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## APPENDIX

*Italian translation of the SRL-O questionnaire*

<b>Nome scala</b>	<b>Autoefficacia accademica online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"> <li>1. Sono sicuro di essere in grado di padroneggiare i contenuti e i compiti di questo corso online.</li> <li>2. Sono fiducioso nella mia capacità di persistere con successo in questo corso online, anche se dovessi trovare il contenuto difficile.</li> <li>3. Sono sicuro di poter mettere in atto l'impegno necessario per ottenere un voto alto in questo corso online.</li> <li>4. Sono sicuro di essere in grado di capire con precisione cosa mi viene richiesto di fare.</li> </ol>
<b>Nome scala</b>	<b>Motivazione intrinseca (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"> <li>1. Trovo sempre aspetti del programma di studio che suscitano la mia curiosità.</li> <li>2. Mi piace imparare cose nuove in questo corso online.</li> <li>3. Trovo piacevole studiare per questo corso online.</li> <li>4. Trovo molto stimolante apprendere i contenuti di questo corso online.</li> <li>5. Provo un senso di realizzazione quando acquisisco competenze o informazioni.</li> </ol>
<b>Nome scala</b>	<b>Motivazione estrinseca online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"> <li>1. Voglio fare bene questo corso online per poterlo esibire ai miei amici e alla mia famiglia.</li> <li>2. Voglio fare bene per le aspettative reali o percepite degli altri nei miei confronti.</li> <li>3. Voglio ottenere un voto migliore degli altri nel mio corso online.</li> </ol>
<b>Nome scala</b>	<b>Emozione negativa per il raggiungimento dei risultati online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"> <li>1. Mi sento così impotente da non poter dedicare tutto il mio impegno agli studi online.</li> <li>2. Sto pensando di abbandonare gli studi perché mi sento sopraffatto dagli studi online.</li> <li>3. Mentre studio cerco di distrarmi per abbassare il livello di ansia.</li> <li>4. Sono così ansioso che non voglio nemmeno iniziare a studiare online.</li> <li>5. Quando devo studiare online inizio a sentirmi a disagio.</li> </ol>
<b>Nome scala</b>	<b>Pianificazione e gestione del tempo (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"> <li>1. Stabilisco obiettivi a breve termine (giornalieri o settimanali).</li> <li>2. Stabilisco tempistiche realistiche per l'apprendimento.</li> <li>3. Suddivido gli obiettivi più grandi in obiettivi più piccoli e perseguibili.</li> <li>4. Faccio un elenco di azioni dettagliate che devo completare.</li> <li>5. Ogni settimana pianifico i miei impegni, in modo da avere a disposizione il tempo necessario per lo studio online.</li> </ol>

<b>Nome scala</b>	<b>Metacognizione (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"><li>1. Penso a quali strategie di apprendimento hanno funzionato per me in passato quando ho svolto compiti simili o tipi di studio.</li><li>2. Trascorro del tempo cercando di comprendere il compito per assicurarmi di capire con precisione ciò che devo fare.</li><li>3. Di solito autovaluto la mia prestazione una volta terminata.</li><li>4. Esamino i feedback ricevuti in passato e verifico se ho apportato miglioramenti al mio percorso di apprendimento attuale.</li><li>5. Penso a come migliorare il mio lavoro, valutandolo in base ai criteri di valutazione forniti dall'insegnante.</li></ol>
<b>Nome scala</b>	<b>Ambiente di studio (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"><li>1. Sono in grado di studiare per il mio corso online senza distrazioni.</li><li>2. Ho a disposizione un luogo tranquillo e privo di distrazioni per studiare.</li><li>3. So dove posso studiare in modo più efficiente per questo corso online.</li></ol>
<b>Nome scala</b>	<b>Regolazione dello sforzo online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"><li>1. Mi impegno molto nello studio online, anche quando ci sono cose più interessanti da fare.</li><li>2. Quando lo studio online diventa difficile, mi impegno a raggiungere i miei obiettivi di studio.</li><li>3. Quando la mia mente inizia a vagare durante una lezione di questo corso online, faccio uno sforzo supplementare per continuare a concentrarmi.</li><li>4. A prescindere da come mi sento, persevero nello studio online.</li></ol>
<b>Nome scala</b>	<b>Supporto sociale online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"><li>1. Cerco di aiutare gli altri studenti quando fanno una domanda online a cui posso rispondere.</li><li>2. Chiedo aiuto ad altri esperti attraverso i canali online quando non sono sicuro di cosa fare nel mio corso online.</li><li>3. Chiedo all'insegnante e/o ai miei compagni di fare chiarimenti nel mio corso online.</li><li>4. Quando ho difficoltà con il mio corso online, cerco supporto dagli altri attraverso mezzi online (forum di discussione, social media, e-mail, messaggistica istantanea, ecc.).</li><li>5. Uso la posta elettronica, i forum di discussione, i social media, ecc. per mettermi in contatto con l'insegnante e gli altri studenti quando ho bisogno di aiuto.</li></ol>
<b>Nome scala</b>	<b>Strategie di lavoro online (scala di risposta 1-7)</b>
<b>Items</b>	<ol style="list-style-type: none"><li>1. Quando studio online, creo i miei schemi per rendere i contenuti più significativi.</li><li>2. Quando studio online, organizzo i miei ragionamenti facendo dei riassunti di ciò che sto imparando.</li><li>3. Quando studio online, cerco di collegare i contenuti a ciò che già conosco.</li><li>4. Quando studio online, cerco di sviluppare le mie idee in merito ai contenuti che apprendo.</li><li>5. Cerco di ampliare le mie conoscenze svolgendo attività supplementare al di là del programma principale (ad esempio, svolgendo attività extra di problem solving o letture extra).</li></ol>

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# Driving innovation in the third millennium: A measurement tool for assessing innovative leader

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✎ **ABSTRACT.** La leadership è essenziale per promuovere l'innovazione e la creatività all'interno delle organizzazioni di oggi, in continua evoluzione. Pertanto, la necessità di leader in grado di guidare l'organizzazione verso l'innovazione è divenuta fondamentale. Nato da questa esigenza, l'*Innovative Leader Test (ILT)* è stato progettato per misurare le caratteristiche personali e le competenze distintive che determinano il comportamento innovativo del leader. Viene presentato lo studio di validazione del test, condotto su un campione di 660 manager di organizzazioni private e pubbliche italiane. Le analisi fattoriali esplorativa e confermativa hanno evidenziato un modello a 7 fattori. Sono state inoltre testate la validità concorrente e predittiva del ILT che si è rivelato un nuovo strumento valido e affidabile per valutare le dimensioni chiave del leader innovativo.

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✎ **SUMMARY.** Leadership is essential in building and fostering innovation and creativity within today's ever-changing organizations. Thus, the need for innovative leaders capable of driving innovation and innovative behaviour has become paramount. The study presents a new self-report tool, namely the *Innovative Leader Test (ILT)* that consists of 28 items and is aimed to measure the core set of characteristics and competencies that are distinctive in determining leader's both innovative behavior and capacity to lead organization toward innovation. To assess the factorial validity of the seven ILT scales covering personal traits (Openness to change), capabilities (Anticipation, Self-reflection and Self-regulation) and competencies (Problem solving, Knowledge sharing and Change involvement), an exploratory factor analysis, reliability analyses and confirmatory factor analyses were performed ( $N = 660$ ). Alpha values and confirmatory factor analysis provided good reliability of the scales and model fit indices ( $CFI = .96$ ,  $SRMR = .04$ ) for the seven factors structure. Concurrent validity was examined by analyzing the relationships between ILT dimensions, transformational leadership, and work engagement and found positive significant correlations. Finally, the extent to which ILT factors predict specific innovation outcomes, namely innovative work behavior and reputation as an innovator, was demonstrated through correlation and regression analyses. Overall, results indicate that the *Innovative Leader Test* is a valid and reliably self-report measures assessing the key dimensions of innovative leader. Both theoretical and practical implications are discussed, as well as limitations and indications for future research.

**Keywords:** Innovative leader, Agentic capabilities, Innovative work behavior, Innovative leadership assessment, Innovative leadership skills

## INTRODUCTION

The theme of innovation is nothing new for the survival and development of organizations nowadays. In the current era of continuous technological and business change, the main resource for competitiveness is based on innovation. Work has become more knowledge-based and less rigidly defined, performed in a complex and constantly changing environment. Given the importance of innovation for the success and survival of most organizations, understanding the skills and attributes required to achieve success in change and innovation management is crucial. In this framework, leadership is regarded by some scholars as one of the most influential predictors of innovation within organizational contexts (Mumford, Scott, Gaddis & Strange, 2002; Yukl, 2009).

For decades, most studies on innovation management focused on employees in the belief that one way for organizations to become more innovative is to capitalize on their employees' ability to be innovative (de Jong & Den Hartog, 2007). Several other studies focused their attention on contextual factors that impact employees' work environment, showing that leadership is one of the most critical factors when it comes to achieving individual and organizational innovation (Engelen, Schmidt, Strenger & Brettel, 2014). The most recent literature in the field considers the role of leadership as crucial in building the process, structures and in promoting innovation and creativity within organizations (Chan, Liu & Fellows, 2014; Wipulanusat, Panuwatwanich & Stewart, 2017). While much has been written about the attributes of effective leadership for innovation (i.e., Yukl, 2009), limited literature is available regarding the specific attributes of successful innovation leaders, so the core questions about characteristics and behaviors of innovative leader which foster individual innovation still remain widely under-explored (de Jong & Den Hartog, 2007; Eisele, 2017).

The need for leaders capable of promoting and governing change in organizations is so relevant that it has been acknowledged, among others, in the outlined principles of the recent international standard ISO 56002 (2019) on *Organizational Innovation Management*, which mentions the need for future-oriented leaders. Hence, to contribute to the definition of an innovative and future-oriented leader, our research aims to identify the leader's core competencies and characteristics required to achieve innovation.

Thus, the *Innovative Leader Test (ILT)* was purposely

designed to address this gap, to achieve the definition of a core set of leader's characteristics and competencies that are distinctive in determining his/her innovative behavior and, consequently, his/her ability to lead employees and organization toward innovation. ILT is a self-report test grounded on an integrated configuration of traits, competencies, and capabilities and seven dimensions, as described below. Accordingly, the objective of the study is threefold: (1) to introduce the instrument, its construction and psychometric properties; (2) to assess concurrent validity by exploring the relationship between innovative leader factors and other competing measures; (3) to verify ILT relationship with innovative behaviors by exploring relationship between its factors and several organizational outcomes.

## The theoretical background of innovation leadership

In most research studies, the terms innovation and creativity are often used interchangeably so that several research focus mainly on the creative or idea generation stage of innovation (McAdam & McClelland, 2002; Mumford, 2000). However, unlike creativity, innovation also includes the implementation of ideas (Janssen, 2000; Scott & Bruce, 1994) and, according to West and Farr, is "the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society" (West & Farr, 1990, p. 9). Therefore, to identify the determinants of innovative leader's behavior, it is not enough to reason in terms of leaders' creativity, but attention must be paid on the individual characteristics that enable them to promote and to implement what has been devised.

Most studies on organizational innovation have attempted to link leadership style to organizational innovation (i.e., Zacher, Robinson & Rosing, 2016). Transformational leadership (TFL) has frequently been showed as a determinant of organizational innovation in a number of studies (i.e., Sethibe, 2018). Transformational leaders, as change agents, are expected to inspire and intellectually stimulate their followers. By acting as a model for subordinates, communicating the vision (inspirational motivation), providing and eliciting new challenging ideas to stimulate rethinking old ways of doing things (intellectual



stimulation), transformational leaders may activate the followers' creativity potential (Avolio, 1994; Bass & Riggio, 2006). Likewise, also charismatic leadership (Chang, 2018) as well as participative and supportive leaders have been found to enhance creativity and innovation (Tung & Yu, 2016). Thus, the literature review shows not only that transformational leadership as the widely studied leadership style associated with innovation, but also the multiplicity of approaches to the study of innovation leadership. In a recent systematic literature and content analysis review, Fuad and colleagues (Fuad, Musa, Yusof & Hashim, 2022) found that 44% of studies on innovation leadership consisted of multiple leadership skills, while 36% used transformational leadership.

As described above, innovation leadership has to keep up with the complexity and speed of innovation (Rosing, Frese & Bausch, 2011). Furthermore, the plurality of approaches to the study of innovation leadership makes its unambiguous operationalization complex, as well as the identification of the underlying dimensions. Considering that different leadership styles are required at different levels and innovation processes (Haapaniemi, 2017), to drive innovation more effectively a mix of cross-cutting leadership competencies becomes more useful than a single style (Fuad et al., 2022; Rosing et al., 2011). This challenge oriented our research towards defining a heterogeneous core profile of characteristics, competencies and capabilities of the innovative leader with the ultimate goal of providing a tool to measure them.

## The innovation leadership scales in the literature

The relevance of leaders capable of driving change, together with the complexity of achieving an unambiguous measure of innovation leadership, make a direct measurement of leadership for innovation necessary (Eisele, 2017). The existing literature on innovation leadership reflects a high heterogeneity and plenty of overlap regarding the leadership competencies that facilitate innovation in organizational contexts (Fuad et al., 2022). Previous studies, using well-established leadership approaches, have produced a considerable collection of measures of leadership for innovation. De Jong and Den Hartog (2007) developed an inventory of leader behaviors that are likely to enhance employees' innovative actions, based on thirteen related

leadership attitudes. The *Leadership for Innovation Scale* (Eisele, 2017) is a hetero-rating scale that focuses on how employees rate their leaders on innovation-related behaviors, while Vincent-Höper and Stein (2019) validated *Leader Support for Innovation Questionnaire (LSIQ)*, a measure of specific leadership behaviors that support employees' innovation activities. To develop their *Principal Innovation Leadership Scale*, Fuad and colleagues (2022) conducted a systematic literature review to identify the key leadership styles that will support innovation in the educational Malaysian context. However, measures on innovation leadership generally refer to hetero evaluation of leaders by employees and to the innovation process as a whole, not considering the multidisciplinary nature of leadership to the right extent.

The literature scales' review thus highlighted both different proxies of innovation leadership and the need for a universal reference framework and measurement tools that clearly detect leadership competencies capable of stimulating and facilitating the innovative behaviors.

## THE PRESENT STUDY

### Development of the Innovative Leader Test scales

In the instrument development and validation process, we considered previous measurement scales in the literature, as well as the main theoretical approaches identified for the study of innovation leadership (de Jong and Den Hartog, 2007; Eisele, 2017; Fuad et al., 2022; Yukl, 2009). For the purposes of the implementation of the *Innovative Leader Test*, we posited innovative leaders' characteristics as the set of traits, competencies and capabilities that predispose leader to innovative behaviors and actions towards the organization, which are considered functional in facilitating the innovative behaviors of his/her co-workers at various stages of the innovation process.

After literature review, the ILT was developed through the following steps: i) determination of the constructs that enable innovative leader in the examined context; ii) comparison with literature and integration of dimensions; iii) generation of items and construction of the instrument.

First, a series of three different focus groups of leaders considered as key innovators by their respective organizations

was conducted. Following the critical incident technique method (CIT, Flanagan, 1954), the key competencies and effective behaviors that enable leaders to address innovation and organizational change in their respective organizations were identified. Secondly, the results of the focus groups were analyzed by comparing them to the outcomes emerged by a substantial amount of research has produced on a wide range of individual-level factors considered to be antecedents of innovative behavior: taxonomy and review of leaders' behaviors (i.e., de Jong & Den Hartog, 2007; Yukl, 2002), overview of antecedents of individual innovation (i.e., Moussa, McMurray & Muenjohn, 2018), others innovation leadership scale (Eisele, 2017; Vincent-Höper & Stein, 2019). In addition, the literature explored was enriched by the theoretical framework of social cognition theory (Bandura, 1986) and by the related agentic capabilities (Bandura, 1999; Cenciotti, Borgogni, Consiglio, Fedeli & Alessandri, 2020). According to our idea, the more the innovative leader is capable of managing change and innovation in an agentic manner, the more effective he/she will be in his/her innovative action. Thereby, we have spotted seven dimensions namely: Openness to change, Problem solving, Anticipation, Self-reflection, Self-regulation, Knowledge sharing and Change involvement. Finally, a battery of items was identified by adapting it from the literature and customizing it for the purposes of this study, while Change involvement scale's items were specially generated following the Hinkin's criteria for the development of new scales (Hinkin, 1998). Both the adapted and newly generated items were shown to a panel of three experts in the field of innovation to assess their content validity. Based on the experts' feedback, some items were eliminated or modified and total of 28 items were finalized in this phase. In its main structure ILT presents seven different subscales measuring as many dimensions covering three individual domains of innovative leader, namely personal traits (Openness to change), capabilities (Anticipation, Self-reflection and Self-regulation) and competencies (Problem solving, Knowledge sharing and Change involvement); all ILT dimensions are already available in the literature, with the exception of change involvement.

Openness to change is a construct introduced by Wanberg and Banas (2000), who describe it through a list of variables, from participation in the process of change, to self-efficacy in the belief of the ability to change and the personal impact of change. In our research Openness to change is considered a trait that enables to initiate, manage and respond to change.

A leader who is open to change welcomes new information, discards old assumptions and modifies his or her way of working when faced with new situations.

Problem solving appears as an antecedent of individual innovation and an essential ability for change management in a number of studies (Mumford et al., 2002; Scott & Bruce, 1994). Historically, a wide range of researchers have given attention to specific dimensions of cognitive style as antecedents of innovative behavior (e.g., Jabri, 1991; Kirton, 1976). Creative problem-solving has been pointed out as a critical determinant of effective leadership behaviors within innovative teams in several studies (i.e., Basadur, Runco & Vegaxy, 2000; Mumford et al., 2002) recalling how leaders must possess problem solving skills to effectively evaluate creative ideas. In Yukl's (2002) taxonomy of managerial practices Problem solving is defined as identifying work-related problems, analyzing problems in a timely but systematic manner, to identify causes and find solutions, and acting decisively to implement solutions to resolve important problems or crises. Hence, through this competence, the leader provides the necessary advice and support to co-workers regarding how they can adjust and refine their creative ideas to meet the needs of the organization (Desouza, 2011). In our model the innovative leader is a problem solver as he/she is able to recognize problems and act effectively in complex and rapidly changing scenarios.

Anticipation, Self-reflection and Self-regulation capabilities refer to a set of individual capacities, the agentic capabilities (Bandura, 1999), which enable people to motivate themselves, plan and manage their behaviors, develop their knowledge and adapt their actions in order to achieve personal and professional goals (Cenciotti et al., 2020). From an organizational innovation perspective, being able to anticipate provides the leader with an anticipatory view and helps him/her to foresee likely organizational needs and possible obstacles to change management. The Self-reflection capability facilitates leaders' learning through their direct successes and failures, allowing them to gain awareness and reinforcing the most effective behaviors towards innovation. Finally, the Self-regulatory capability enables leaders to lead themselves, regulating their emotional reactions so that they can direct and harness their energetic and emotional resources. Thus, they improve their job performance even under stressful conditions, fostering the achievement of favorable outcomes (such as organizational change or innovation).

The relational aspects of the innovative leader who drives followers towards innovation in our model comes through Knowledge sharing and the ability to involve in change.

Knowledge sharing competence is the way in which the leader, together with co-workers, can contribute to the application of knowledge, innovation and, ultimately, the competitive advantage of the organization where he/she operates. Knowledge sharing has been shown to increase the competitive capabilities of organizations, to retain intellectual capital thereby increasing the productivity (Lin, 2007) and to enhance employee creativity (Dong, Bartol, Zhang & Li, 2017; Lee, 2018). Knowledge sharing among members of the organization is not only about the effective reorganization and transfer of knowledge and information, but becomes an important resource that facilitates individual creativity, the creation of new knowledge and innovative ideas (Cabrera & Cabrera, 2005). Through Knowledge sharing, the innovative leader not only makes it easier for the employees to acquire knowledge and thus express creativity at their best, but also orients them towards a culture of information sharing, so that others can learn from it.

Change involvement competence is a new construct based on participative leadership that clearly emerged from the focus groups. It aims at intercepting the leader's behaviors that involve employees in the promotion and implementation of change to achieve future scenarios. In our research it describes the innovative leader's ability to involve co-workers, not only in envisioning attractive future situations, but also in fostering and carrying out the changes required to achieve such future scenarios. Aware that he/she cannot bring about any effective transformation in a complex environment alone, he/she aims at activating his/her network to have a higher probability of success.

## The validation study

The main goal of the present study is to define and validate the factor structure and the content validity of the *Innovative Leader Test (ILT)*. Through reviewed literature and focus groups on innovation leadership we consider (1) Openness to change, (2) Problem solving, (3) Anticipation, (4) Self-reflection, (5) Self-regulation, (6) Knowledge sharing and (7) Change involvement as antecedents of the leader's innovative behavior. Hence, we expected that they represent seven different but related latent factors and each item will

load on the corresponding factor. To assess concurrent validity, we expected that the constructs underlying innovative leader would be positively related with leadership styles that encourage creativity and stimulate followers to view problems in new ways and with leaders' positive job state of mind, namely transformational leadership (TFL) and work engagement (WE). Transformational leadership (Bass & Riggio, 2006) has widely been studied in the organizational innovation context and, mainly for its intellectual stimulations and inspirational motivation dimensions, it has been found to be positively correlated with innovative employee behaviors and innovation (Avolio, 1994; Bass & Riggio, 2006; Chen, Zheng, Yang & Bai, 2016; Rosing et al., 2011). Work engagement, defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Bakker & Demerouti, 2008, pp. 209-210; Schaufeli, Salanova, González-Romá & Bakker, 2002), has been found to be an antecedent for employee innovative behavior, whereby highly engaged employees are expected to produce initiatives that will have an impact on innovation (Ariyani & Hidayati, 2018). Furthermore, work engagement has been shown to mediate the relationship between job characteristics and workers' innovation in several studies (e.g., Park, Song, Yoon & Kim, 2013).

Lastly, since innovative leaders are supposed to be motivated towards innovation in their job and acknowledged for this, we expected them to enact innovation-driven behavior and their social reputation at work to be affected by this. Thus, we expect ILT factors to be positively related with specific innovation outcomes, namely innovative work behavior and reputation as innovative. Innovative work behavior (IWB, de Jong & Den Hartog, 2010) is currently considered an outcome of innovative leaders and refers to a broad set of behaviors related to ideas generation, creating support for ideas and helping their implementation (e.g., de Jong & Den Hartog, 2010; Janssen, 2000; Scott & Bruce, 1994). Reputation as innovative refers to the leader's informal social reputation that may influence the image and expected results of innovative behavior (Yuan & Woodman, 2010). In the authors' opinion, those with a reputation for being innovative are also more likely to internalize the value of innovation and are more likely to believe that innovative behavior will benefit their work.

Accordingly, we derived our study hypotheses as follows:

Hypothesis 1: the *Innovative Leader Test* dimensions represent seven different but related latent factors of the same factorial structure;

Hypothesis 2: the *Innovative Leader Test* factors will be positively related to transformational leadership (TFL) and work engagement;

Hypothesis 3: the *Innovative Leader Test* factors will be positively related to innovative work behavior and reputation as innovative.

To this end, we carried out this study to test the factorial validity of the ILT. After an exploratory factor analysis (EFA) approach to assess the factor structure of the ILT, reliability analyses (corrected item-total correlations and Cronbach's alphas) and confirmatory factor analyses (CFA) were performed with a total sample of 660 employees (Hypothesis 1). Moreover, to verify the association of innovative leader factors with transformational leadership and work engagement (Hypothesis 2) correlations were investigated on the overall sample by using Pearson's  $r$  coefficient, while correlational and regression analyses were used to determine whether ILT factors predicted other relevant outcomes variables (Hypothesis 3) as reputation as innovative and innovative work behavior.

## METHOD

### Sample

Participants included 660 supervisors (managers and middle managers) with executive responsibilities working in private (47.6%) and public (52.4%) organizations. Questionnaires were collected in the period from November 2020 to June 2021, during which organizations were not in a changing time. Response rate was 82.5%. Females were 163 (24.7%), males were 495 (75%), while two people did not disclose their gender. Age varied from 20 to 66 years ( $M = 46.2$ ,  $SD = 8.7$ ). Participant education varied from high school ( $N = 131$ , 19.8%), to University degree ( $N = 449$ , 68%), to postgraduate ( $N = 80$ , 12.1%). Organizational tenure was 11-15 years for 35.1%, 16-20 years for 20.5%, 26-30 years for 18.0%, 21-25 years for 9.8%, 6-10 years for 8.8%, and 0-5 years for 7.8%.

### Procedure

Participants (managers and middle managers) were contacted by their own companies via an e-mail, in which

they were informed about the research purpose (validation of a new instrument on innovative leader) and invited to answer an online and anonymous questionnaire via a specific link or Qr code implemented on Qualtrics XM platform. Participation in the study was voluntary. Informed consent was obtained, and anonymity in line with the ethical standards of the American Psychological Association (APA), and according to the principles expressed in the Declaration of Helsinki. All responses to the survey were complete and, thus, no missing values were found. Descriptive statistics as well as skewness and kurtosis indices of items were assessed to check data normality.

## Measures

In order to measure the hypothesized seven dimensions of innovative leader, items were formulated or re-adapted by two organizational psychologists on the basis of the existing literature reviewed. Statements were contextualized in the organizational setting by explicitly relating the item content to the work domain through appropriate lexical solutions. The Appendix gives all the scale items.

Openness to change: in order to measure this dimension, items were generated on the basis of Di Fabio and Gori (2016) *Acceptance of Change Scale (ACS)* and others existing in the literature on the construct (i.e., Sinval, Miller & Marôco, 2021). The statements were measured on a 7-point scale ranging from 1 = strongly disagree to 7 = strongly agree.

Problem solving: taking into account Jabri's scale (1991), as well as the *Problem Solving Inventory (PSI)* (Heppner and Petersen, 1982), this scale consists of four items measured on a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree) and refers to the problem solving abilities in everyday working situations (e.g., "when faced with a problem in my work, I define the essential alternatives and, whenever possible, broaden the choice options").

Anticipation, Self-reflection and Self-regulation: in order to measure these dimensions items were formulated or re-adapted starting from the *Work Agentive Capabilities (WAC)* questionnaire (Cenciotti et al., 2020). More specifically, anticipation items refers to the capability to anticipate events that are likely to occur and define one's future actions (e.g., "I foresee in advance the possible risks and opportunities of the work situation I will face"); Self-reflection items capture the capability to analyze one's direct experience and thus to learn

from past events (e.g., “at the end of each new job, I pause to reflect on what I have learnt from the experience I have just had”); Self-regulation items refers to the capability to regulate one’s personal and emotional states (e.g., “I can remain calm even in difficult or conflict work situations”). The statements were measured on a seven-point scale ranging from 1 = never to 7 = always.

Knowledge sharing: items of this scale were generated with reference to the *Knowledge Sharing Behavior Scale* (KSBS) developed by Rajput & Talan (2017) that consists of 30 items measuring level of interaction, information and knowledge sharing behaviors. More specifically, items detect the leader’s personal interactions aimed at sharing information, experiences and organizational innovations (e.g., “I regularly share my experiences and learnings with other colleagues”). They scored on a seven-point Likert scale ranging from 1 = strongly agree to 7 = strongly disagree.

Change involvement: items were newly generated starting from focus groups activities and critical incidents technique (Flanagan, 1954). This dimension refers to the leader capability to involve employees in the management, promotion and implementation of organizational change (e.g., “In facing a change in my organization I consider how to involve different stakeholders and collaborators”). Item responses were recorded on a 7-point frequency scale ranging from 1 = never to 7 = always.

Transformational leadership: items regard intellectual stimulation and inspirational motivation components of transformational leadership (Bass & Avolio, 1992), considered as predictors of creativity and change management. They have been adapted from the *Multifactor Leadership Questionnaire 6S* (Bass & Avolio, 1992, 2000). An example item is “I stimulate employees to tackle problems in an unconventional way”. Alpha was: .83. Items scored on a seven-point Likert scale ranging from 1 = never to 7 = always.

Work engagement (WE): the positive and fulfilling state of mind that implies a persistent sense of well-being in one’s work, namely work engagement (Schaufeli et al., 2002), was measured by the *Ultra-Short Work Engagement Scale* (UWES 3) where three items from the UWES-9 were selected, each or every dimension of work engagement: (1) “At my work, I feel bursting with energy” - vigor; (2) “I am enthusiastic about my job” - dedication; (3) “I am immersed in my work” - absorption (Schaufeli, Shimazu, Hakanen, Salanova & De Witte, 2017). Alpha was: .74. Item responses were on a 7-point Likert scale ranging from 1 = never to 7 = always.

Innovative work behavior (IWB): for IWB measurement, we used Janssen’s (2000) scale as revised by Amir (2015) on a three-factor structure with 9 items consisting of idea generation (3 items, e.g. “generating new ideas”), idea promotion (3 items, e.g. “supporting and promoting your innovative ideas to others”) and idea implementation (3 items, e.g. “introducing new ideas into his working environment”). Cronbach’s alphas were .89, .80, and .90, respectively. Item responses were recorded on a 7-point frequency scale ranging from 1 = never to 7 = always.

Reputation as innovative (REP\_IN): to measure REP\_IN we used, by adapting it, Yuan & Woodman scale (2010) consisting of two items to which we added a third item (“I’m regarded as an innovator by my supervisors”). Alpha was: .87. Item responses were on a 7-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree.

## Data analysis

To identify the underlying dimensions of the ILT an exploratory factor analysis (EFA), reliability analyses (corrected item-total correlations and Cronbach’s alpha) and confirmatory factor analyses (CFA) were performed using maximum likelihood (ML) estimation procedures in Mplus 8.1 (Muthén & Muthén, 2017). To assess the closeness of the hypothetical model to the empirical data the appropriateness of the model fit, multiple goodness-of-fit indexes were used, including the ratio of the chi-square to degrees of freedom ( $\chi^2/df$ ), the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA). The appropriateness of the model fit was established with values of CFI higher than .90 (Bentler, 1990), SRMR and RMSEA values of .08 or less (Browne & Cudeck, 1992). Then, to properly determine whether the hypothesized seven-factor model showed the best fit to the data, it was compared with plausible competitive models differing in their factorial structure. These alternative models assumed a six-factor structure, obtained by combining two of the seven dimensions (i.e., Models 2, 3), a five-factor structure obtained by combining two dimensions twice (i.e., Model 4) or by combining three of the seven dimensions (i.e., Model 5), a four-factor structure obtained by combining two of the seven dimensions for three times (i.e., Model 6), a three-factor structure obtained by combining two pairs and a triad of

dimensions (i.e., Model 7) and a two-factor structure obtained by combining three and four of the seven dimensions (i.e., Model 8). Concurrent validity with transformational leadership and work engagement was verified using the Pearson's  $r$  coefficient, while to examine the extent to which innovative work behavior and reputation as innovative outcomes are predicted by innovative leader factors, linear regressions were conducted, with ILT dimensions as predictor variables and IWB and REP\_IN as criterion variables.  $R^2$  and  $F$ -statistics were used to respectively assess the fit of the models and statistical significance. Finally, to explore whether there were differences in the mean scores of the ILT dimensions across sub-samples of public and private organizations, analyses of variance (ANOVAs) were conducted.

## RESULTS

### Item analysis

Means, standard deviations, skewness, and kurtosis for each ILT item were calculated. Skewness resulted within normal parameters being included in the range of  $\pm 2$  (Hair, Black, Babin & Anderson, 2010; Byrne, 2010). It varied between  $-0.04$  of the item SR\_3 (item 24 in the Appendix

list) to  $-1.39$  of the item OPC\_1 (item 1 in the Appendix list). Instead, the kurtosis tended towards non-normality, varying between  $-0.05$  of the item ANT\_1 to  $3.11$  of the item REG\_2. Therefore, we used maximum likelihood with robust standard errors (MLR) to test the factorial validity.

### Factorial validity and reliability

The exploratory factor analysis (EFA) showed a factor structure with seven principal dimensions, with 63.6 % of total variance explained in line with our conceptualization. Indeed, all fit indices (see Table 1) and parallel analyses pointed to a seven-factor solution, composed by the latent dimensions capturing Openness to change, Problem solving, Anticipation, Self-reflection, Self-regulation, Knowledge sharing and Change involvement.

All items of the seven-factor model mostly loaded only onto the hypothesized factors (see Table 2), and factor loadings ranged between  $|.50|$  and  $|.79|$  ( $M = 5.6$ ;  $SD = .8$ ) for Openness to change, between  $|.35|$  and  $|.74|$  ( $M = 5.7$ ;  $SD = .8$ ) for Problem solving, between  $|.49|$  and  $|.74|$  ( $M = 6.0$ ;  $SD = .7$ ) for Change involvement, between  $|.40|$  and  $|.83|$  ( $M = 5.9$ ;  $SD = .7$ ) for Knowledge sharing, between  $|.34|$  and  $|.63|$  ( $M = 5.4$ ;  $SD = .8$ ) for Anticipation, between  $|.39|$  and

**Table 1** – EFA model fit measures

Model	$\chi^2$	$df$	RMSEA	CFI	SRMR	$\Delta\chi^2$ ( $\Delta df$ )
1 Factor	1588.83 ***	350	.09	.68	.08	–
2 Factors	1168.16 ***	323	.08	.78	.06	420.66 (27)***
3 Factors	923.52 ***	297	.07	.84	.05	244.65 (26)***
4 Factors	672.80 ***	272	.06	.90	.04	250.71 (25)***
5 Factors	520.34 ***	248	.05	.93	.03	152.46 (24)***
6 Factors	430.36 ***	225	.04	.95	.03	89.98 (23)***
7 Factors	355.42 ***	203	.04	.96	.02	74.94 (22)***

*Legenda.*  $\chi^2$  = chi-square test of model fit;  $df$  = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Squared.

\*\*\*  $p < .001$

**Table 2** – Exploratory factor analysis on the ILT: Factor loading matrix and correlations matrix

Items	Factors						
	1	2	3	4	5	6	7
OPC_1	.66*						
OPC_3	.68*						
OPC_4	.79*						
OPC_2	.50*						
PS_2		.70*					.18*
PS_1		.40*		.12*			.17*
PS_3		.35*		.19*	.16*		
PS_4		.74*					
CI_3			.58*				
CI_2			.57*				
CI_1			.74*				
CI_4			.49*		.14*		
KS_2				.83*			
KS_4	.20*			.51*			
KS_3				.57*		.10*	
KS_1			.23*	.40*			
ANT_1							.63*
ANT_4	.15*						.53*
ANT_3	.14*						.34*
ANT_2	.18*						.35*
SR_2					.74*		
SR_4					.65*		.24*
SR_1					.39*		.30*
SR_3					.70*		
REG_1						.71*	
REG_3						.66*	
REG_2						.72*	.25*
REG_4	.16*					.68*	

*Legenda.* OPC = Openness to change; PS = Problem solving; SR = Self-reflection; ANT = Anticipation; KS = Knowledge sharing; CI = Change involvement; REG = Self-regulation.

|.74| ( $M = 5.4$ ;  $SD = .94$ ) for Self-reflection and between |.66| and |.72| ( $M = 5.5$ ;  $SD = .8$ ) for Self-regulation. The revealed seven dimensions also correlated significantly and showed good values (from  $r = .26, p < .01$ , to  $r = .62, p < .01$ ) (see Table 3).

Subsequently, a CFA was conducted on the posited seven factor model (i.e., Model 1) and its fit was compared with several alternative models by testing the changes in chi-square values (see Table 4). The seven-factor model demonstrated the best fit with the data, providing support for our first hypothesis and for the factorial validity of the ILT questionnaire. The goodness-of-fit indices showed a good fit of the model to the data. Although the chi-square was significant, the other goodness-of-fit indices showed satisfactory and good values ( $\chi^2/df = 1.83, p < .001$ ; CFI = .96; TLI = .94; SRMR = .04; RMSEA = .04). Factor loading of the seven-factor model ranged between |.58| and |.76| for Openness to change, between |.50| and |.81| for Problem solving, between |.59| and |.74| for Change involvement, between |.58| and |.74| for Knowledge sharing, between |.62| and |.74| for Anticipation, between |.62| and |.79| for Self-reflection and between |.64| and |.82| for Self-regulation. Correlations between factors were also found to be good, ranging from .27 to .75 (see Figure 1).

Despite the reduced number of items, each dimension presented an adequate reliability statistic (Cronbach's alphas and item-total correlations): Openness to change (four items, Cronbach's alpha = .77, item-total correlations ranging from .51 to .63), Problem solving (four items, Cronbach's alpha = .79, item-total correlations ranging from .48 to .69), Anticipation (four items, Cronbach's alpha = .77, item-total correlations ranging from .53 to .64), Self-reflection (four items, Cronbach's alpha = .82, item-total correlations ranging from .55 to .70), Self-regulation (four items, Cronbach's alpha = .83, item-total correlations ranging from .77 to .81), Knowledge sharing (four items, Cronbach's alpha = .78, item-total correlations ranging from .50 to .62) and Change involvement (four items, Cronbach's alpha = .79, item-total correlations ranging from .51 to .67). The ILT factors showed all significant good correlation indices (see Table 5) with the measure used to assess concurrent validity (transformational leadership, work engagement,) and hypothesized outcomes (innovative work behavior, reputation as innovator).

To test Hypothesis 3 we used multiple regressions to examine how innovative leader factors related to outcomes relative to innovation. Table 6 shows the results of two regression equations in which innovative work behavior

**Table 3** – Factor correlations and reliability

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Openness to change	(.77)						
(2) Problem solving	.42**	(.79)					
(3) Change involvement	.40**	.59**	(.78)				
(4) Knowledge sharing	.36**	.53**	.57**	(.75)			
(5) Anticipation	.50**	.62**	.56**	.48**	(.77)		
(6) Self-reflection	.37**	.54**	.49**	.40**	.59**	(.82)	
(7) Self-regulation	.38**	.42**	.37**	.26**	.46**	.33**	(.83)

Note. Coefficient alpha reliability estimates are presented in brackets along the diagonal.

\*\*  $p < .01$

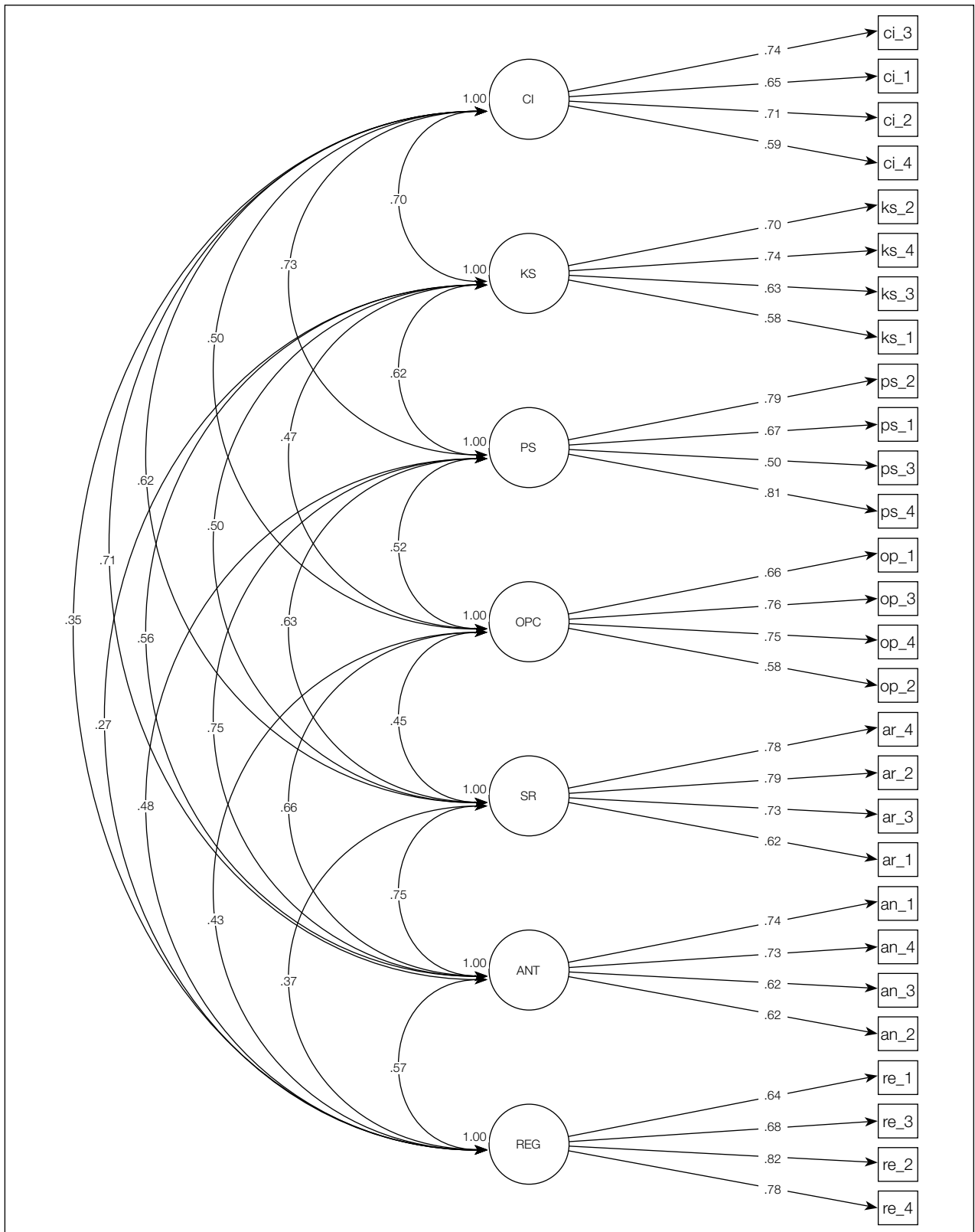


**Table 4** – Confirmatory factor analysis on the ILT: Model comparisons

Model	$\chi^2$	df	p	RMSEA	CFI	TLI	SRMR	Model comparison	$\Delta\chi^2$	$\Delta df$	p
M1: 7-Factor model	502.25	329	<.001	.03	.96	.95	.04				
M2: 6-Factor model PS+OPC, SR, ANT, KS, CI, REG	748.12	335	<.001	.05	.89	.88	.05	M2-M1	245.87	6	<.001
M3: 6-Factor model PS+ANT, KS, CI, SR, REG, OPC	614.31	335	<.001	.04	.93	.91	.04	M3-M1	112.06	6	<.001
M4: 5-Factor model KS + CI, PS, OPC, SR+ REG, ANT	1186.71	340	<.001	.07	.78	.76	.07	M4-M1	684.46	11	<.001
M5: 5-Factor model OPC+ANT+PS, KS, CI, SR, REG	810.34	340	<.001	.06	.88	.87	.05	M5-M1	308.09	11	<.001
M6: 4-Factor model OPC, PS+ANT, KS+CI, REG+SR	1150.55	344	<.001	.07	.79	.77	.07	M6-M1	648.30	15	<.001
M7: 3-Factor model PS+OPC, SR+ANT+REG, CI+KS	1328.76	347	<.001	.08	.75	.72	.07	M7-M1	826.51	18	<.001
M8: 2-Factor model ANT+SR+OPC+PS, KS+CI+REG	1506.65	349	<.001	.09	.70	.68	.08	M8-M1	1004.4	20	<.001

*Legenda.* OPC = Openness to change; PS = Problem solving; SR = Self-reflection; ANT = Anticipation; KS = Knowledge sharing; CI = Change involvement; REG = Self-regulation;  $\chi^2$  = chi-square test of model fit; df = degree of freedom; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Squared.

Figure 1 – Results of confirmatory factor analysis on the ILT (N = 660)



Legenda. OPC = Openness to change; PS = Problem solving; SR = Self-reflection; ANT = Anticipation; KS = Knowledge sharing; CI = Change involvement; REG = Self-regulation.

**Table 5** – Correlates of the seven ILT factors

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Openness to change	–										
(2) Problem solving	.42**	–									
(3) Change involvement	.40**	.59**	–								
(4) Knowledge sharing	.36**	.52**	.57**	–							
(5) Anticipation	.50**	.62**	.56**	.47**	–						
(6) Self-reflection	.37**	.54**	.49**	.41**	.59**	–					
(7) Self-regulation	.43**	.48**	.36**	.27**	.57**	.37**	–				
(8) Transformational leadership	.52**	.54**	.54**	.53**	.56**	.55**	.29**	–			
(9) Work engagement	.28**	.31**	.34**	.31**	.34**	.33**	.28**	.35**	–		
(10) Innovative work behavior	.53**	.26**	.32**	.31**	.40**	.33**	.24**	.46**	.34**	–	
(11) Reputation as innovator	.53**	.30**	.35**	.34**	.43**	.31**	.25**	.46**	.26**	.69**	–

\*\*  $p < .01$ **Table 6** – Regression results in predicting innovation outcomes

Parameter	Innovative work behavior	Reputation as innovator
	Estimate	Estimate
Openness to change	.48**	.40**
Problem solving	.06	.02
Change involvement	.07	.07
Knowledge sharing	.07	.12*
Anticipation	.09	.16*
Self-reflection	.15*	.03
Self-regulation	.03	.03
Multiple R	.55**	.56**
R <sup>2</sup>	.30**	.32**
Adjusted R <sup>2</sup>	.30**	.31**

\*\*  $p < .01$ ; \*  $p \leq .05$

and reputation as innovative were regressed on the seven innovative leader factors. Results show how Openness to change and Self-reflection were positively related to innovative work behavior (beta weights respectively .48 and .15), while Openness to change, Anticipation and Knowledge sharing were positively related to reputation as innovative (beta weights respectively .40, .16 and .12). Others ILT factors were not significantly related to innovation outcomes examined.

Note, however, that when remaining ILT factors were entered into the regression for innovative work behavior (IWB) without Openness to change and Self-reflection (supplementary analysis not shown in Table 6), Anticipation and Knowledge sharing became significant predictors of IWB ( $R^2 = .18$ ); likewise, when remaining ILT factors were entered into the regression without Openness to change, Anticipation and Knowledge sharing for reputation as innovator (REP\_IN), Change involvement and Problem solving became significant predictors of REP\_IN ( $R^2 = .15$ ). These results support H3.

Finally, ANOVAs showed as the organization type has a significant effect for both Change involvement,  $F_{(1,659)} = 5.68$ ,  $p = .017$ , and Knowledge sharing,  $F_{(1,659)} = 7.27$ ,  $p = .007$ , but no significant effect for the other ILT dimensions. Specifically, the private organizations' sample showed higher levels of change involvement ( $M = 6.0$ ;  $SD = .6$ ) and Knowledge sharing ( $M = 6.0$ ;  $SD = .6$ ) than the public organizations' sample ( $M = 5.9$ ;  $SD = .7$  and  $M = 5.9$ ;  $SD = .7$  respectively).

## DISCUSSION

This study provided substantial support for the ILT. Our first aim was to test the factorial and content validity of this instrument, aimed at measuring leader's core traits, capabilities and competencies needed to achieve innovation, namely Openness to change, Anticipation, Self-reflection, Self-regulation, Problem solving, Knowledge sharing and Change involvement. As expected, exploratory factor analysis and confirmatory factor analysis revealed a seven-factor structure that fit the data better than the alternative solutions with different numbers of factors. All seven scales, moreover, showed satisfactory reliability (i.e., Cronbach's alphas and item-total correlations). The second aim of the present contribution was to assess the concurrent validity of the ILT dimensions by analyzing the relationships between its seven

subscales and variables used as criteria that we expected to be related with these characteristics of innovative leader. Hence, consistent with the literature (Bass & Riggio, 2006; Chen et al., 2016) the ILT dimensions were correlated with measures of transformational leadership and work engagement, all showing significant correlations and providing support for their connection with the leaders' intellectual stimulations and inspirational competencies, as well as their engagement.

The third objective of the study was to assess whether ILT factors predicted other outcome variables relevant for innovation in the organizations. Openness to change resulted as most relevant predictor for both outcomes, followed by Self-reflection as predictor of innovative work behavior, Anticipation and Knowledge sharing as predictors for reputation as innovative. Surprisingly enough, contrary to our expectations, Problem solving was not among the major determinants of innovation outcomes, while Self-regulation capability was found to be not distinctive in predicting outcomes even when the main predictors were removed from the regression. The Openness to change trait arises as a distinctive characteristic of the innovative leader; combined with it, different leader capabilities come into play leading to different innovation outcomes (e.g., Self-reflection capability for innovative work behavior, Anticipation and Knowledge sharing for reputation as innovative). All in all, the above results provided support for the criterion validity of the *Innovative Leader Test* and suggest that, together with Openness to change, leaders' agentic capabilities may play a significant role in enabling leaders to generate, promote and implement innovation at work and thus in being recognized as innovators at work. Lastly, ANOVA results confirmed some differences between private and public organizations, particularly with regard to the level of Change involvement and Knowledge sharing, which therefore emerge as practices that foster innovation and organizational change. Thus, it would be worthwhile to explore and confirm any other differences or similarities between these two types of work contexts, which often differ in terms of timing and approach to innovation.

## Limitations and practical implications

This study contains several limitations that should be acknowledged and can be further developed in future research. First limitation derives from the self-report

nature of measures, which might raise questions of common-method variance (e.g., Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Thus, while the best informants regarding the individual characteristics measured by the ILT questionnaire are managers (e.g., Anticipation, Self-regulation), future research would benefit from combining self-report with the perceptions that subordinates hold on managers' innovative behaviors. Furthermore, future research on innovative leaders should broaden the nomological network of innovation leadership to other correlates such as the degree of organizational change the company is facing or more objective results in terms of both objective such as using KPIs at employee and organizational level. Another limitation concerns the use of a cross-sectional design, that does not allow establishing the stability of the measure over time and clear relations of causality between innovative leader dimensions and other variables. Future studies should implement longitudinal designs to better address patterns of influence between innovative leader factors and other dimensions. Among them, the role of organizational change, if any, should be operationalized and considered as a predictor variable of innovation leadership. Finally, future studies should deepen the comparison between different sectors besides the public/private sector (e.g., business services, technology, health, education, law enforcement), to explore differences in their approach to innovation and to confirm the psychometric characteristics of ILT on larger samples across different

work sectors and organizational contexts.

Given that, to the best of our knowledge, this research is among the few that have studied innovative leader by bringing together elements such as traits, capabilities and competencies; moreover, it is the only one to have examined agentic capabilities as properties of the leader that, together with other traits and competencies, enable him/her to have an innovative behavior. In this regard, future research should deeply investigate the role of agentic capabilities as possible mediators between openness to change, cognitive leader capabilities (as determinants), innovation at work and other possible indicators (as outcomes).

Overall, it can be concluded that the ILT dimensions and related scales represent valid and consistent measures to determine a set of core characteristics of innovative leader, thus contributing to fill the gap in the literature on innovation leadership in organizations. This is especially relevant in today's organizations that require future-oriented leader, able to cope with innovation and to manage rapid organizational change. Furthermore, by identifying and measuring the innovative leader's characteristics, the *Innovative Leader Test* can help organizations in selecting and assessing the potential of leaders in change contexts, as well as in promoting the development of these characteristics. Likewise, it can assist leaders in self-assessment, in order to identify possible areas for growth and, consequently, to employ appropriate self-development strategies.

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## APPENDIX

### List of items

Number of item	Description
1	[In dealing with my current work...] It's easy for me to think of new action plans
2	[In facing a change in my organization] I am careful to convey a sense of security to my employees.
3	After particularly difficult situations, I think back to my emotional reactions and how they affected my performance
4	I foresee in advance the possible risks and opportunities of the work situation I will face
5	I keep others informed about the news of our organization
6	[When faced with a problem in my work] I analyze it globally, before breaking it down into key elements
7	I can remain calm even in difficult or conflict work situations
8	[In dealing with my current work...] I quickly find ways to implement new ideas
9	I foresee in advance the kind of people I will be interacting with
10	In tense situations I can regulate my reactions without my performance being affected
11	At the end of each new job, I pause to reflect on what I have learnt from the experience I have just had
12	When I acquire new information, I tend to share it with other colleagues
13	[When faced with a problem in my work] I verify the implications resulting from the possible solutions
14	[In facing a change in my organization] I do not only consider my own goals, but also those I can assign to co-workers
15	[In dealing with my current work...] I am able to take an idea and turn it into a project of change
16	After a work success I try to identify what behaviors have allowed me to achieve it
17	I regularly share my experiences and learnings with other colleagues
18	I assign the goals according to the possible scenarios that I envisage
19	[In facing a change in my organization] I consider how to involve different stakeholders and collaborators
20	[When faced with a problem in my work] I prefer to ask questions asking "why", to develop an understanding of the problem
21	When faced with unexpected problems, I do not lose control
22	[In dealing with my current work...] I can easily imagine new future scenarios
23	[In facing a change in my organization] I pay attention to inform my superiors to involve them in my intent
24	After a work performance, I dedicate time to analyze any areas of improvement of my actions
25	I imagine in advance the possible consequences of my choice or decision
26	I direct my actions to facilitate the sharing of innovative policies at all levels
27	[When faced with a problem in my work] I define the essential alternatives and, whenever possible, broaden the choice options
28	In situations of intense stress I am able to manage negative emotions and not hinder my activity

*Note.* These items have been translated into English for this publication. Original items were in Italian.