Measuring Organizational Skills in the General Population: Development and Preliminary Validation of the DOSQ

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Abstract: Organizational skills are a set of cognitive abilities responsible for goal-directed behaviors. While they are moderately studied in clinical settings, the assessment of organizational skills in the general population remains under-studied. This paper presents the new Durand Organizational Skills Questionnaire (DOSQ), which was developed to examine the factors associated with organizational abilities in the general population. Exploratory factor analysis, validated by a confirmatory factor analysis, suggests eight factors: Work Organization, Communication Clarity, Punctuality, Goal-Oriented Behavior, Assiduity, Workspace Organization, Strategies, and Attentiveness. Three studies using samples from the general population provided evidence for the reliability and validity of the DOSQ's scores. Overall, the results suggest that the DOSQ offers a valid approach to measuring organizational skills in the general population.

Keywords: Organizational skills, test development, general population, goal-directed behaviors, psychometric validation

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1. Introduction

Organizational skills are part of a group of cognitive processes necessary for goal-directed behavior, which also includes processes such as planning, initiation, inhibition, working memory, and self-monitoring (Clark, Prior, & Kinsella, 2002). The process of organizing includes prioritizing, setting goals, and developing plans and strategies (Anderson, Munk, Young, Conley, & Caldarella, 2008). Organizational skills have been associated with positive constructs such as academic achievement (Minskoff & Allsopp, 2003), productivity (Bogdewic, Baxley, & Jamison, 1997), and self-esteem (Stevenson, Stevenson, & Whitmont, 2003). While there is a plethora of books on the subject, the scientific literature on organizational skills is scarce, particularly literature on organizational skills in non-clinical populations.

1.1. Organizational skills in children

The overwhelming majority of psychological studies focusing on organizational skills have been performed on children, in most cases children diagnosed with attention-deficit/hyperactivity disorder (ADHD; Bakunas & Holley, 2001; Bikic, Reichow, McCauley, Ibrahim, & Sukhodolsky, 2017;

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Langberg, Becker, Epstein, Vaughn, & Girio-Herrera, 2013; Langberg et al., 2011). In educational settings, poor organizational skills have been associated with lower grades and with problems managing both school materials and deadlines (Bikic et al., 2017). Low levels of organizational skills in children also result in procrastination and failure to organize, prioritize, and plan academic-related tasks; these problems increase throughout adolescence (Booster, DuPaul, Eiraldi, & Power, 2012; Langberg et al., 2010) and continue into adulthood (Barkley & Fischer, 2011). While deficiencies in organizational skills often stem from ADHD, they remain skills: abilities that can be taught through training and repetition (Bakunas & Holley, 2001).

1.2. Organizational skills in adults

Although no study has explicitly focused on the correlates associated with organizational skills in healthy adults from the general population, a few studies have focused on specific non-clinical groups. A literature review examining the importance of organizational skills in academic medicine has divided organizational skills into two categories: self-management and systems management (Bogdewic et al., 1997). The self-management group includes skills related to self-awareness, examining strengths and weaknesses of one's personal style, using effective communication, and identifying priorities efficiently. The systems management group includes skills related to developing strategic plans, negotiating effectively, managing finances, conducting efficient meetings, and managing professional collaborations. Another study, focusing on medical undergraduates, examined the importance students asigned to various transferable skills (Whittle & Eaton, 2001). The authors concluded that first-year students considered organizational skills (e.g., the ability to manage time/meet deadlines and plan tasks), and self-learning skills (e.g., managing stress, teamwork, and decision making) to be the most important transferable skills to the practice of medicine.

Organizational skills have also been little studied in leadership settings. A study focusing on project managers investigated the most common traits associated with successful management performance (El-Sabaa, 2001). Within the organizational skills section, the concepts of planning, organizing, goal-orientation, seeing the big picture, and problem-orientation were deemed the most important.

While these studies have investigated the components of organizational skills, no studies have focused explicitly on external correlates that could be associated with organizational skills.

1.3. Multiple definitions of organizational skills

In addition to the lack of empirical studies on organizational skills, researchers often define organizational skills differently. For instance, early research on ADHD considered the inability to follow oral instructions, difficulty copying information from another source, disruptive or daydreaming behavior, irregular submission of assignments, and poor social adjustment as hallmarks of poor organizational skills (Sah & Borland, 1989). On the other hand, the Children's Organizational Skills Scale defines organizational skills as a combination of task planning (i.e., proficiency in laying out steps to meet a goal or a deadline), organized actions (i.e., using tools and strategies to complete tasks), and memory and materials management (i.e., keeping track of items and managing supplies and materials)

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(Abikoff & Gallagher, 2008). It appears that there is no consensus in the scientific community as to which traits are central components of organizational skills.

1.4. Overview of the present research

There is a lack of instruments for assessing organizational skills in the general population, and a lack of research on the association of organizational skills and correlates related to personality and to both personal and professional life. A new instrument is needed. Thus, the purpose of this article is to describe the development and initial validation of the Durand Organizational Skills Questionnaire (DOSQ), a new self-report measure assessing organizational traits. This article outlines the construction of the DOSQ and its subscales; reports the DOSQ's basic psychometric properties; and describes the validity of scores on the questionnaire in multiple community samples.

2. Study 1: Test development

2.1. Participants

Two hundred and sixty-two (N = 262) individuals from the community were recruited online via social media and websites dedicated to psychological research (e.g., facebook.com and reddit.com/r/SampleSize). Although online communities such as reddit are often overlooked by researchers, multiple studies support the validity and reliability of the data obtained on reddit, supporting that they are similar to data obtained in other settings, such as in the laboratory (Casler, Bickel, & Hackett, 2013; Jamnik & Lane, 2017; Shatz, 2016). Requirements for participation were being over 18 years old and being fluent in English. The sample consisted of 124 males and 138 females. Most participants were located in North America (68%) and Europe (26%). A third of the participants (35%) reported being currently enrolled in a university. The mean age was 29.46 years old (SD = 10.23).

2.2. Procedure

A total of 200 statements to be rated on a 6-point Likert scale (1 = *Strongly Disagree* to 6 = *Strongly Agree*) were written by the author. Half were related to organization at work and the other half were related to life outside work. These items were mean to reflect the previously mentioned key aspects of organizational skills (e.g., prioritizing, setting goals, planning, strategies, self-awareness, effective communication, self-management, meeting deadlines, following instructions, organizing materials). Twelve experts in organizational skills from the private sector (i.e., human resources specialists and organizational coaches) received the list of 200 statements and rated the relevance of each organizational skills using a '*yes*' or '*no*' scale. Some of the items were discarded based on the results. Items were kept if at least nine out of twelve experts agreed that the statement was relevant. A total of 54 statements related to work (including school, volunteer work, and employment) and 33 statements related to life outside work were kept.

Participants were invited to complete the 87-item version of the DOSQ. They completed the questionnaire using the Qualtrics Web platform. There was no missing data for any of the participants. All response options on all items were used. A series of six exploratory factor analyses (EFA; principal axis factoring with direct oblimin rotation) was conducted on all items. After each EFA, the only items

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kept were those loading .3 or greater on their targeted factor without loading .3 or greater on any other factor. After the sixth EFA, no items needed to be removed.

2.3. Results and discussion

2.3.1. DOSQ subscales

The nine-factor EFA final solution accounted for 66.46% of the variance. The eigenvalues of these nine factors ranged between 10.29 and 1.12. Table 1 shows the nine subscales of the DOSQ, the final number of items for each subscale, a sample item for each subscale, Cronbach's alpha, eigenvalues, and cumulative variance in percentage. Out of the original 87 items, 41 items were successfully distributed among the factors.

2.3.2. Intercorrelation between the DOSQ subscales

The intercorrelations between the nine factors of the DOSQ are shown in Table 2. Eight out of nine factors correlated strongly with the DOSQ total score (r = .53 to .75). The self-management subscale only correlated moderately well with the total score (r = .32). Furthermore, this factor was uncorrelated with six out of the other eight factors. Based on these results, the three items related to Self-Management were removed. The remaining 38 items (19 keyed positively and 19 keyed negatively) were randomized before starting Study 2.

Table 1. DOSQ Subscales, sample items, Cronbach's alpha, eigenvalues, and variance

Scales	**Alpha**	**Eigenvalues**	**Cumulative % of Variance**
Work Organization (3 items)	.70	10.29	25.10
Most of my work supplies are kept in the same place. (True)			
Communication Clarity (6 items)	.92	4.13	35.17
I often get confused when I interact with other people. (False)			
Punctuality (3 items)	.96	3.04	42.57
I consider myself to be a punctual person. (True)			
Goal-Oriented Behavior (4 items)	.79	2.11	47.72
I almost never set goals in my personal life. (False)			
Self-Management (3 items)	.71	2.01	52.63
I feel like I have too many responsibilities. (False)			
Assiduity (5 items)	.79	1.74	56.88
I rarely leave tasks to the last minute. (True)			
Workspace Organization (5 items)	.81	1.46	60.43
I feel satisfied when my workplace is in order. (True)			
Strategies (7 items)	.87	1.35	63.74
I rarely bother organizing e-mails and paperwork. (False)			
Attentiveness (4 items)	.76	1.12	66.46
I often misplace small objects. (False)			

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Table 2. Inter-correlations between the DOSQ subscales (N = 262)

Scales	1	2	3	4	5	6	7	8	9	Mean (SD)
DOSQ										
1. DOSQ Total										165.18 (28.84)
2. Work Organization	**.65**									12.91 (3.13)
3. Communication	**.58**	**.28**								26.09 (6.52)
4. Punctuality	**.53**	**.31**	**.26**							13.89 (3.95)
5. Goal-Oriented	**.62**	**.33**	**.33**	**.22**						15.48 (4.61)
6. Self-Management	**.32**	.11	.13	.15	.12					10.51 (3.46)
7. Assiduity	**.72**	**.36**	**.37**	**.41**	**.34**	**.24**				23.50 (5.90)
8. Workspace	**.62**	**.41**	.10	**.20**	**.27**	.09	**.32**			19.36 (5.59)
9. Strategies	**.75**	**.48**	**.25**	**.20**	**.46**	.04	**.42**	**.52**		26.17 (8.38)
10. Attentiveness	**.69**	**.50**	**.35**	**.43**	**.31**	**.26**	**.46**	**.37**	**.35**	17.24 (4.40)

Note. Communication = Communication Clarity; Goal-Oriented = Goal-Oriented Behavior; Workspace = Workspace Organization. Bold indicates $p < .01$, two-tailed.

3. Study 2: Test validation and confirmatory factor analysis

3.1. Participants

The DOSQ was further validated using a sample of *N* = 542 participants recruited online, using the same methodology as for Study 1. Of the participants, 42% were males and 58% were females. Most participants were located in North America (67%) and Europe (27%). Half of the participants (49%) reported being a university student. Among the students, 61% were studying at the bachelor's level, 11% at the master's level, 16% at the doctoral level, and 12% at another level. The mean age was 27.56 years (*SD* = 9.01). Upon completing the DOSQ, the participants had the option to stop the survey immediately, or to continue with the remaining questionnaires of the study. Out of the 542 participants, 262 participants completed all the questionnaires.

3.2. Measures

Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is a widely used measure of life satisfaction. The instrument uses a 7-point Likert scale to rate 5 items pertaining to self-perceived global satisfaction. Diener et al. (1985) reported discriminant and convergent validity for the SWLS, as well as high internal consistency. This internal consistency was reported in numerous other studies (Ali & Chamorro-Premuzic, 2010; Love & Holder, 2014).

State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991). The SSES is a measure of state self-esteem, focusing on the self-esteem of an individual at a given point rather than in general. The SSES includes 20 items rated on a 5-point Likert scale, providing a total score, as well as three subscale scores (performance, social, and appearance self-esteem). Previous studies using the SSES support its high internal consistency (Durand, 2016).

3.3. Results and discussion

The descriptive data and the correlations between the DOSQ and the SWLS and the SSES are shown in Table 3. The DOSQ total score was weakly but significantly positively associated with

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satisfaction with life, performance self-esteem, social self-esteem, and general self-esteem. Examination of the DOSQ's subscales shows that Work Organization, Communication Clarity, Goal-Oriented Behavior, Assiduity, and Strategies were weakly to moderately positively associated with satisfaction with life. Furthermore, Communication Clarity, Goal-Oriented Behavior, Assiduity, and Strategies were weakly to moderately positively associated with the SSES and most of its subscales.

Table 3. Correlations between the DOSQ subscales and the SWLS and the SSES (*N* = 239)

Scales	1	2	3	4	5	6	7	8	9	α	Mean (SD)
SWLS											
Total	**.28**	**.17**	**.23**	-.05	**.32**	**.27**	.03	**.19**	.12	.87	20.81 (7.22)
SSES											
Performance	**.29**	.08	**.41**	.00	**.26**	**.32**	-.07	.06	**.28**	.80	25.85 (5.34)
Social	**.23**	.10	**.30**	-.05	**.21**	**.25**	.00	.05	**.22**	.87	22.96 (6.45)
Appearance	.12	.03	**.22**	-.12	**.23**	.14	-.08	.02	.13	.89	17.53 (5.60)
Total	**.25**	.08	**.35**	-.07	**.26**	**.27**	-.06	.05	**.24**	.93	66.35 (15.08)

Note. 1 = DOSQ Total; 2 = Work Organization; 3 = Communication Clarity; 4 = Punctuality; 5 = Goal-Oriented Behavior; 6 = Assiduity; 7 = Workspace Organization; 8 = Strategies; 9 = Attentiveness. Bold indicates $p < .01$, two-tailed.

3.4. Confirmatory factor analysis

Confirmation of the eight-factor structure of the DOSQ was done through a confirmatory factor analysis (CFA) using AMOS 4.0. We used the following indices to establish the fitness of the model: (1) χ^2/df ratio (≤ 3 indicates acceptable fit), (2) Normed Fit Index ([NFI] > 0.90 indicates acceptable fit), (3) Non-Normed Fit Index ([NNFI] > 0.90 indicates acceptable fit), (4) Comparative Fit Index ([CFI] > 0.90 indicates acceptable fit), (5) Standardized Root Mean Residual ([SRMR] $\leq$ 0.09 indicates acceptable fit), and (6) Root Mean Square Error of Approximation ([RMSEA] $\leq$ 0.08 indicates acceptable fit). The eight-factor structure of the DOSQ was supported. The fit statistics were as follows: $\chi^2 = 1459.516$, df = 616, χ^2 / df = 2.369, NFI = 0.87, NNFI = 0.91, CFI = 0.92, SRMR = 0.063, RMSEA = 0.050.

4. Study 3: Test validation and psychometric properties

4.1. Participants

One hundred and twenty-seven (*N* = 127) participants were recruited online for Study 3. Of the participants, 39% were males and 61% were females. Most participants were located in North America (63%) and Europe (26%). Half of the participants (48%) reported being a university student. The mean age was 25.28 years old (*SD* = 7.31).

4.2. Measures

Flourishing Scale (FS; Diener et al., 2010). The FS is an eight-item instrument of positive human functioning. The items measure the features of human flourishing, such as feelings of competence, engagement with daily activities, positive relationships, and meaning and purpose in life.

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The instrument is scored on a 7-point scale, ranging from '*strongly disagree*' to '*strongly agree*'. A higher score indicates a positive self-image in areas related to functioning. Previous studies support the scale's psychometric properties (Silva & Caetano, 2013).

The Hope Scale (THS; Snyder et al., 1991). The THS is a 12-item instrument that includes four items measuring agency (directing energy towards a goal), four items measuring pathways (planning to meet goals), and four distractors. The instrument uses ratings from 1 = *Definitely False* to 8 = *Definitely True*. This instrument has shown good psychometric properties across numerous studies (Durand, 2018; Shorey, Little, Snyder, Kluck, & Robitschek, 2007).

Rational – Experiential Inventory (REI; Pacini & Epstein, 1999). The REI is a 40-item instrument assessing preferences for information processing (rational and experiential styles) on a 5-point scale. The rational style uses an analytical, conscious approach. On the other hand, the experiential style relies on an affective, holistic, preconscious approach. The REI is divided into four subscales, two for each style: rational ability, rational engagement, experiential ability, and experiential engagement. Rational ability is the ability to think analytically. Rational engagement is the enjoyment of reliance on analytical thinking. Experiential ability is the ability to experience intuitive feelings and impressions. Lastly, experiential engagement is the enjoyment of relying on feelings to make decisions. Previous studies using the REI support its adequate psychometric properties (Durand, 2019; Sladek, Bond, Huynh, Chew, & Phillips, 2008).

4.3. Results

The descriptive data and the correlations between the DOSQ and the FS, the THS, and the REI are shown in Table 4. The DOSQ total score was moderately (r = .43) positively associated with the FS, and weakly to strongly (r = .28 to .53) associated with the THS and its subscales. For the REI, the DOSQ total score was significantly associated only with the rational ability subscale (r = .28). Examination of the DOSQ's subscales shows that Communication Clarity, Punctuality, Goal-Oriented Behavior, and Assiduity are associated with FS. Furthermore, Communication Clarity, Goal-Oriented Behavior, Assiduity, and Strategies were positively associated with the total score of THS. Lastly, Goal-Oriented Behavior and Assiduity had a positive relationship with the rational ability subscale of the REI, while Communication Clarity was significantly associated with rational ability, experiential ability, and experiential engagement.

4.4. Intercorrelations between the DOSQ subscales and psychometric properties

Similarly to the results reported for Study 1, the intercorrelations, internal consistency, means and standard deviations from the data of all participants of Study 2 and Study 3 for all eight factors of the DOSQ are shown in Table 5. All factors, with the exception of Punctuality, correlated strongly with the DOSQ total score (r = .55 to .76). Punctuality is on the threshold of being considered strongly correlated with the total score (r = .49). Overall, the DOSQ and its subscales show similar internal consistency to the reported values from Study 1.

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Table 4. Correlations between the DOSQ subscales and the FS, the THS, and the REI (*N* = 127)

Scales	1	2	3	4	5	6	7	8	9	α	Mean (SD)
FS											
Total	**.43**	.15	**.45**	**.23**	**.43**	**.44**	.00	.18	.14	.91	38.37 (10.30)
THS											
Agency	**.53**	**.25**	**.44**	**.24**	**.50**	**.59**	-.01	**.28**	.22	.86	20.36 (6.73)
Pathway	**.28**	.09	**.32**	.10	**.38**	**.28**	-.10	.14	.09	.81	23.52 (4.95)
Total	**.47**	.20	**.43**	.20	**.50**	**.51**	-.05	**.24**	.18	.88	43.90 (10.62)
REI											
Rational ability	**.28**	.08	**.31**	.02	**.38**	**.28**	-.03	.15	.11	.85	38.89 (6.49)
Rational engagement	.14	.02	.15	-.03	.20	.12	-.03	.16	-.01	.83	40.03 (6.55)
Experiential ability	.07	-.03	**.37**	-.05	.06	-.05	-.12	-.03	.13	.87	30.20 (6.89)
Experiential engagement	-.04	-.12	**.23**	-.15	-.15	-.07	-.10	-.06	.10	.85	30.33 (6.91)

Note. 1 = DOSQ Total; 2 = Work Organization; 3 = Communication Clarity; 4 = Punctuality; 5 = Goal-Oriented Behavior; 6 = Assiduity; 7 = Workspace Organization; 8 = Strategies; 9 = Attentiveness. Bold indicates $p < .01$, two-tailed.

5. General discussion

The purpose of this set of studies was to develop and validate a new questionnaire for examining organizational skills in the general population. The results confirm the adequacy of the DOSQ in various adult samples from the general population. The DOSQ demonstrated good internal consistency reliability for its total score and all of its subscales, and showed an adequate model of fit in a confirmatory factor analysis. The validity of the DOSQ was also assessed by examining its association with measures related to being in control and having a positive outlook on life.

The results support an eight-factor structure for measuring organizational skills. The first factor assesses the ability to keep work-related supplies organized in an efficient manner, as well as to keep track of their location. The second factor focuses on clear communication with others to prevent misunderstandings. The third factor relates to the habits of arriving on time and completing projects by their deadlines. The fourth factor relates to the ability to have multiple specific goals in life, personally and professionally, and to be able to visualize what one wants in life. The fifth factor assesses the ability to work in a consistent manner, to follow and manage schedules, and to stay focused while working on long-term projects. The sixth factor focuses on the habit of keeping a workspace organized for a long period of time, and performing better in organized environments. The seventh factor refers to using strategies for keeping track of schedules and deadlines and actively using tools and systems to learn new information. The last factor refers to staying attentive, remembering details, and using various effective strategies to memorize information. Together, these eight factors assess the organizational skills of an individual.

While the results are highly encouraging, additional construct validation is needed to further assess the validity of each subscale. Future studies should focus on personality profiles and benefits associated with organizational skills, such as academic and work achievements, promotions, employment, and managerial aptitudes.

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In conclusion, organizational skills are little-studied in the general population. The present study attempts to fill this gap. While the DOSQ was validated against a limited number of constructs in the present study, the results are highly encouraging and warrant future research to improve our understanding of organizational skills.

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