Validation of Measurement Instruments

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Measuring Organizational Transparency With 10 Items: Validation of a German Short Scale

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Abstract

In recent research on transparency in organizational settings, a multidimensional understanding of supervisor transparency has gained acceptance. Following recent operationalizations, the construct can be measured by the five dimensions of Disclosure, Clarity, Accuracy, Timeliness, and Relevance of shared information. Initial applications of the scale already show its usefulness in that theoretically well-founded relationships, e.g., to trust, could be empirically supported using the instrument. As the instrument consists of twenty items, it can be too long for specific application fields. A shorter, more economical instrument is of value, especially in surveys that include many different constructs. In this article, we report on our testing of the suitability of a German shorter version consisting of only ten items. The results show that this instrument respects the dimensionality of the construct and leads to similar effects concerning its relationship to trust (-worthiness) and job satisfaction compared to the long scale. The findings also support the notion that individual transparency dimensions have different and distinct effects. Thus, the importance of a multidimensional understanding of transparency in organizational settings is also underlined by the short scale.

Keywords

Transparency in Organizations

Following the definition of Schnackenberg and Tomlinson (2016), transparency in an organization is defined as "the perceived quality of intentionally shared information from a sender" (p. 1788). In social science, transparency is studied in various contexts and is mainly attributed to different positive outcomes such as trust (Norman et al., 2010; Schnackenberg et al., 2021) or job satisfaction (Hofmann & Strobel, 2020). The positive effects of transparency can be explained by different theoretical lenses, such as Mayer et al.'s (1995) integrative trust model (Tomlinson & Schnackenberg, 2022), uncertainty reduction theory (Oldeweme et al., 2021; Venkatesh et al., 2016), signaling theory (Klimchak et al., 2020), or organizational justice theory (Märtins et al., 2023). However, with regard to the theoretically well-founded relationship between transparency and trust within organizations, empirical verifications of this relationship led to inconsistent findings (Schnackenberg & Tomlinson, 2016). This inconsistency might be explained by the use of unidimensional operationalizations of transparency, usually only referring to the quantity of shared information (Schnackenberg & Tomlinson, 2016).

Multidimensional Transparency

Based on an extensive literature review, Schnackenberg and Tomlinson (2016) proposed that the three dimensions of Disclosure, Clarity, and Accuracy ("DCA-transparency") build transparency perceptions. This understanding has recently been extended by the dimensions of Timeliness and Relevance and translated to German (Hossiep et al., 2021).

Disclosure refers to the perception that sufficient information is shared by a sender. Clarity indicates whether the shared information is perceived as being comprehensible and can be understood as a measure of the congruence of the intended and understood meaning of shared information. Accuracy refers to the degree to which the shared information is perceived to be correct and not biased at the moment of sharing (Schnackenberg & Tomlinson, 2016). Timeliness is about the right moment to share information; sharing information too early or too late reduces the value of the information. Finally, Relevance is the degree of personal importance (professionally and/or privately) of disclosed information (Hossiep et al., 2021; Lee et al., 2002).

The dimensionality of transparency stresses that the degree of perceived transparency can differ between recipients because of their individual needs and that transparency is about the quality of the information rather than its mere existence (Albu & Flyverbom, 2019). The multidimensional conceptualization (rather than a unidimensional understanding) has been shown to be useful for theoretically understanding transparency and its relationship to outcomes, as well as for deriving practical implications (e.g., Märtins et al., 2023; Tomlinson & Schnackenberg, 2022).

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Development of a Short Transparency Scale

The transparency scale presented here reflects the dimensions of Disclosure, Clarity, Accuracy, Timeliness, and Relevance (Hossiep et al., 2021; Schnackenberg et al., 2021). Schnackenberg et al. (2021) presented a questionnaire consisting of the three dimensions of Disclosure, Clarity, and Accuracy. This instrument was translated into German and extended by the dimensions of Timeliness and Relevance of information sharing (Hossiep et al., 2022). However, the instrument consists of 20 items, which creates limitations for applications in certain research designs (Böckenholt & Lehmann, 2015; Ziegler et al., 2014). Additionally, extensive questionnaires can lead to response biases and cause participants to stop processing the survey (Hinkin, 1995). In this paper, we validate a shorter version of the scale, which respects the dimensional nature of transparency while using only ten items. In this way, we aim to contribute to the work of Schnackenberg et al. (2021) and Hossiep et al. (2021) by developing a short scale and to encourage researchers in the field of transparency to refer to a multidimensional measure. To do so, we compare the extended DCA-transparency scale (Hossiep et al., 2021) with its short version to investigate whether this scale sufficiently measures perceived transparency. We focus on the frequently assumed relationship between transparency, trust (-worthiness), and job satisfaction (e.g., Jahansoozi, 2006; Norman et al., 2010; Schnackenberg et al., 2021).

Method

Item Selection

The items of the short scale were selected from the twenty-item scale validated by Hossiep et al. (2021). In order to maintain the dimensional structure while reducing scale length, we decided to test two items per dimension. To do so, we used results from exploratory factor analysis (EFA), findings of the assessment of content validation (i.e., definitional distinctiveness) from Hossiep et al.'s (2021) study, and additionally discussed the concrete wording in the author team.[1] Concerning the EFA, all items showed very high factor loadings (all above .7) on their respective dimension, and cross-loadings were not an issue. Looking at the quantitative assessment of content validation (see Study 2 of Hossiep et al., 2021 and Hinkin & Tracey, 1999 for an explanation of the content validation approach), the means of two disclosure items did not significantly differ between the Disclosure and Relevance definitions. Hence, we decided to exclude those items. We further decided to proceed with the items with the highest fit for their respective dimension, with an exception in the case of Relevance. In order to cover all aspects, we decided to use an item that emphasized the breadth of the constructs and

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1) See the Supplementary Materials for the content validity assessment.

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only had the third highest loading on the respective factor. Based on this selection, all other analyses are performed. See Supplementary Materials Table 4 for a detailed overview of the item characteristics.

The items of the short transparency scale are presented in Table 1. The mean of the two items per dimension should be calculated as an unweighted mean, as well as the overall mean of the five dimensions for the construct of organizational transparency. Dimensions that have been answered fully can be analyzed, even if there are missing values in other dimensions. If an item is missing from a dimension, these participants should be excluded list-wise. The average processing time is 90 seconds. Concerning objectivity, as it is a standardized instrument with given categories, interpretation objectivity can be assumed to be given. Further, this also ensures implementation objectivity. Dimensional scores can be benchmarked against the norm data.

Table 1

Items of the Short Version of the Extended DCA-Transparency Scale

No	Item	Polarity	Dimension
1	Ich habe alle Informationen, die ich von meiner Führungskraft brauche. (I have all the information I need from my supervisor.)	+	Disclosure
2	Eine ausreichende Menge an Informationen wird von meiner Führungskraft vorgelegt. (A sufficient amount of information is presented by my supervisor.)	+	Disclosure
3	Die von meiner Führungskraft bereitgestellten Informationen sind verständlich. (The information presented by my supervisor is understandable.)	+	Clarity
4	Die Informationen von meiner Führungskraft sind eindeutig. (The information from my supervisor is clear.)	+	Clarity
5	Die Informationen von meiner Führungskraft scheinen wahr zu sein. (The information from my supervisor appears to be true.)	+	Accuracy
6	Die Informationen von meiner Führungskraft erscheinen korrekt. (The information from my supervisor appears correct.)	+	Accuracy
7	Die Informationen von meiner Führungskraft kommen mit ausreichend Vorlauf. (The information from my supervisor is provided ahead of time.)	+	Timeliness
8	Die Informationen von meiner Führungskraft kommen zeitlich angemessen. (The information from my supervisor comes at an appropriate time.)	+	Timeliness
9	Das Thema, über das mich meine Führungskraft informiert, ist mir wichtig. (I care about the topic my supervisor informs me about.)	+	Relevance
10	Das Thema, über das mich meine Führungskraft informiert, liegt mir am Herzen. (The topic my supervisor informs me about is close to my heart.)	+	Relevance

Note. The information sender can be adapted to the specific context.

Data Sets

To validate the short scale, two data sets are used: First, the longitudinal sample with three measurement points which was used to validate the long scale (N1 = 540; N2 = 447; N3 = 376). The data is available at Leibniz Institute for Psychology - PsychArchives.[2] Please see Hossiep et al.'s (2021) Study 3 for a detailed description of the data collection process. Second, we collected a cross-sectional data set with the crowd-working platform Prolific.[3] The data was cleaned based on attention checks (nine cases), completion time (four cases), and comments (one case) leading to a final sample size of N = 287 cases. The sample consists of 43.9% female, 54.4% male and 1.7% diverse (including no answer) participants with an average age of 32.6 years (SD = 9.87). Participants reported having an average work experience of 10.2 years (SD = 8.89). We ensured that all participants were employed and native-level German speakers.

Measures

We decided to use the same measurement instruments as in the validation of the long scale with an exception for the trust scale, which showed poor internal consistency (< .4) in the study of Hossiep et al. (2021). We measured trust by an eleven-item scale presented by Gillespie (2003); trustworthiness (ability, benevolence, integrity) was measured by 15 items by Dreiskämper et al. (2016); job satisfaction was measured by four items by Thompson and Phua (2012) and transparency was measured by the ten items selected before. All constructs were measured on five-point Likert scales.

Statistical Analysis

The statistical analysis was performed with the data set of the long scale (Sample 1) and with the newly collected cross-sectional data (Sample 2). By doing so, we aim to test the robustness of the results. The analysis consists of four steps: First, we perform confirmatory factor analysis (CFA; using ML estimator). We run simple CFAs with uncorrelated factors, including all ten items of the scale. Second, we report descriptive statistics, correlations between constructs, and Cronbach`s alpha. Third, we test for measurement invariance, considering gender and education as grouping variables. Fourth, to investigate the usefulness of the short scale, we tested whether we could find similar patterns in predicting relevant outcomes compared to the long scale. We use multiple linear regression (MLR) models to test the relationships between transparency, trustworthiness, trust and job satisfaction. We further perform stepwise regression to test for changes in

2) The longitudinal data set is available in the Supplementary Materials (see Hossiep & Märtins, 2021).

3) The cross-sectional data set is available in the Supplementary Materials (see Hossiep et al., 2023).

explained variance between the long and short scales. All analyses are conducted using the software JASP (Version 0.16.4.0).

Results

The results of the single CFAs are shown in Table 2. For both samples, all fit indices indicate an excellent fit, with $\chi^2/df < 3$ (except for Sample 1 Wave 1), comparative fit index (CFI) > 0.95, Tucker-Lewis index (TLI) > 0.95, standardized root mean square residuals (SRMR) < 0.08, and root mean square error of approximation (RMSEA) < 0.08 (Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2005). The fit indices of both samples for the short scale are comparable to the long scale.

Table 2

Results of Confirmatory Factor Analysis

Model	χ^2	df	χ^2/df	CFI	TLI	SRMR	RMSEA
Long Scale	461.360	165	2.79	.971	.967	.041	.058
Short Scale (Sample 1, Wave 1)[a]	82.134	25	3.29	.986	.974	.021	.065
Short Scale (Sample 1, Wave 2)[a]	41.756	25	1.67	.996	.992	.011	.039
Short Scale (Sample 1, Wave 3)[a]	31.271	25	1.25	.998	.997	.010	.026
Short Scale (Sample 2)[b]	37.431	25	1.50	.992	.985	.022	.042

Note. Fit Indices of the long scale taken from Hossiep et al. (2021).
[a]Longitudinal data set used to validate the long scale (two weeks between measurements, $N_1 = 540$, $N_2 = 447$, $N_3 = 376$). [b]Cross-sectional data set collected to validate the short scale ($N = 278$).

In Table 3, we report the descriptive statistics, correlations, and Cronbach`s alpha for the transparency dimensions. Considering the distribution of the items for the short scale in comparison to the long scale, we see very high congruence: There was no relevant difference in mean values for all factors, and standard deviations (*SD*s) were similar for all factors, with the biggest difference in mean value for the factor Accuracy at 0.27 (4.28 in the short scale compared to 4.01 in the original scale). Additionally, we tested the internal consistency using Cronbach's alpha. Usually, Alpha gets higher as the scale is longer; therefore, for a two-item scale for each factor, Alpha is likely to underestimate the actual consistency (Eisinga et al., 2013). In fact, we find evidence for the appropriateness of the short scale, with values reaching from .77 for Relevance to .89 for Timelines.

Table 3

Descriptive Statistics, Correlations and Cronbach's Alpha

Variable	*M*	*SD*	CA	1	2	3	4
1. Disclosure							
Long Scale	3.61	1.02	.94				
Short Scale (Sample 1)[a]	3.67	1.03	.87				
Short Scale (Sample 2)	3.86	0.75	.80				
2. Clarity							
Long Scale	4.03	0.81	.88	.711			
Short Scale (Sample 1)[a]	3.97	0.91	.84	.693			
Short Scale (Sample 2)	3.87	0.88	.82	.655			
3. Accuracy							
Long Scale	4.01	0.86	.94	.682	.758		
Short Scale (Sample 1)[a]	4.05	0.89	.88	.641	.674		
Short Scale (Sample 2)	4.28	0.70	.86	.545	.595		
4. Timeliness							
Long Scale	3.47	1.01	.94	.743	.658	.644	
Short Scale (Sample 1)[a]	3.40	1.07	.89	.703	.625	.574	
Short Scale (Sample 2)	3.27	0.91	.86	.557	.589	.429	
5. Relevance							
Long Scale	3.81	0.89	.92	.539	.597	.587	.521
Short Scale (Sample 1)[a]	3.73	1.00	.83	.530	.542	.533	.498
Short Scale (Sample 2)	3.63	0.91	.77	.457	.506	.429	.472

Note. CA = Cronbach's alpha. Values for the long scale are taken from Hossiep et al. (2021).
[a]Data from Sample 1 Wave 3 (*N* = 376).

Further, we tested for item stability. All items show high stability, operationalized as their correlation between the measurement intervals with values between .598 for Accuracy up to .790 for the overall scale (see Supplementary Materials Table 5 for the full results).

The results of testing the measurement invariance are shown in Table 4. We tested for group differences considering gender and education with configural, metric, and scalar invariance (Models 1, 2 and 3 respectively). As the difference in gender was non-significant between all models, we can support the notion of scalar invariance. As the difference in education was significant between Model 2 and Model 3, we can only support metric invariance (Byrne et al., 1989).

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Table 4

Results of Measurement Invariance Testing

| | Gender (female, male) | | | | | | Education (with(out) university degree) | | | | | |
| | Baseline test | | | Difference test | | | Baseline test | | | Difference test | | |
Model	χ^2	df	p	$\Delta\chi^2$	Δdf	p	χ^2	df	p	$\Delta\chi^2$	Δdf	p
Model 1	63.721	50	.092				65.496	50	.070			
Model 2	64.425	55	.180	0.705	5	.983	68.683	55	.102	3.187	5	.671
Model 3	81.035	60	.087	16.610	10	.083	88.272	60	.029	19.589	10	.033

Note. Dataset 2 (*N* = 287).

To test the usefulness of the short scale, we performed for each outcome a separate MLR (see Table 5) and additional single linear regressions for the overall transparency factor for each outcome (see Table 6). We find similar problems as Hossiep et al. (2021) in that the trust scale showed low internal consistency. We therefore used the same items as Hossiep et al. (2021) for Sample 1 and another trust scale for the cross-sectional data set (Sample 2).

Table 5

Results of MLR Models

| | β (SE) | | | | |
Effect, Data	Ability	Benevolence	Integrity	Trust[a]	Job Satisfaction
Disclosure					
Long	0.17* (0.07)	0.25*** (0.07)	0.16* (0.07)	-0.05 (0.09)	0.26** (0.08)
SS 1	0.21* (0.05)	0.23** (0.07)	0.17** (0.06)	0 (0.08)	0.25** (0.08)
SS 2	0.10 (0.07)	0.16* (0.08)	0.06 (0.07)	0.19** (0.07)	0.122 (0.08)
Clarity					
Long	0.19* (0.08)	0.02 (0.09)	0.22** (0.08)	0.25* (0.11)	0.12 (0.10)
SS 1	0.11 (0.07)	0.03 (0.07)	0.17** (0.06)	0.17* (0.09)	0.09 (0.08)
SS 2	0.15* (0.06)	0.14* (0.08)	0.12 (0.07)	0.11 (0.06)	0.17* (0.08)
Accuracy					
Long	0.12 (0.07)	0.15 (0.08)	0.17* (0.07)	0.27** (0.10)	0.02 (0.09)
SS 1	0.13 (0.06)	0.13 (0.07)	0.21** (0.06)	0.24** (0.08)	0.03 (0.08)
SS 2	0.33*** (0.06)	0.08 (0.08)	0.28*** (0.70)	0.14* (0.07)	-0.05 (0.08)
Timeliness					
Long	0.09 (0.06)	0.11 (0.07)	0.17** (0.06)	-0.08 (0.08)	0.20** (0.07)
SS 1	0.09 (0.05)	0.11 (0.06)	0.08 (0.05)	-0.06 (0.07)	-0.05 (0.06)
SS 2	0.06 (0.05)	0.19*** (0.06)	0.22*** (0.05)	0.15** (0.05)	0.11 (0.06)

Effect, Data	β (SE)				
	Ability	**Benevolence**	**Integrity**	**Trust[a]**	**Job Satisfaction**
Relevance					
Long	0.14* (0.05)	0.22*** (0.06)	0.17** (0.05)	-0.08 (0.07)	0.20** (0.06)
SS 1	0.14** (0.05)	0.23*** (0.05)	0.16*** (0.05)	-0.07 (0.06)	0.21** (0.06)
SS 2	0.28*** (0.05)	0.31*** (0.06)	0.28*** (0.05)	0.30*** (0.05)	0.43*** (0.06)
Adj. R^2					
Long	.34	.32	.39	.07	.19
SS 1	.34	.32	.39	.06	.19
SS 2	.51	.48	.55	.48	.43
$\Delta R^{2\,b}$	0	0	0	.01 *ns*	0

Note. Long = Long scale (*N* = 376); SS 1 = Short Scale (Sample 1; *N* = 376); SS 2 = Short Scale (Sample 2; *N* = 278). Values for the long scale taken from Hossiep et al. (2021).

[a]For the long scale and short scale Sample 1, Mayer and Davis (1999) trust scale is used. For the short scale Sample 2 the scale of Gillespie (2003) is used. [b]The ΔR^2 refers to the difference in explained variance between the long transparency scale and the short scale (Sample 1).

p < .05. **p* < .01. ***p* < .001.

Table 6

Results of Linear Regression Models

Effect, Data	β (SE)				
	Ability	**Benevolence**	**Integrity**	**Trust[a]**	**Job Satisfaction**
Overall Transparency					
Long	0.70*** (0.05)	0.76*** (0.05)	0.81*** (0.05)	0.25*** (0.06)	0.55*** (0.06)
SS 1	0.68*** (0.04)	0.73*** (0.05)	0.78*** (0.05)	0.25*** (0.06)	0.54*** (0.06)
SS 2	0.70*** (0.05)	0.70*** (0.07)	0.73*** (0.06)	0.69*** (0.06)	0.62*** (0.07)
Adj. R^2					
Long	.34	.31	.39	.04	.18
SS 1	.34	.32	.40	.04	.18
SS 2	.48	.47	.53	.48	.38

Note. Long = Long scale (*N* = 376); SS 1 = Short Scale (Sample 1; *N* = 376); SS 2 = Short Scale (Sample 2; *N* = 278). Values for the long scale taken from Hossiep et al. (2021).

[a]For the long scale and short scale Sample 1, Mayer and Davis (1999) trust scale is used. For the short scale Sample 2 the scale of Gillespie (2003) is used.

p < .05. **p* < .01. ***p* < .001.

Discussion

During the item selection, we ensured that the distinction between transparency dimensions was clear in terms of content validity. In fact, it is even clearer than in the long version of the scale, in which two Disclosure items were also assigned to the Relevance dimension (see Hossiep et al., 2021, Study 2). In addition, the CFAs showed excellent model fit in both data sets for the short scale, and the fit indices are very similar to those of the long scale. Moreover, measurement invariance holds true for gender (scalar invariance), and to a lower degree also for education (metric invariance). The scale also shows sufficient reliability: In particular, for a short scale the internal consistency (thus the intercorrelation of the items) can be interpreted as very satisfactory. The mean values and standard deviations are also comparable with those of the long scale. This holds true for both data sets. Looking at the usefulness of the short scale, the results of the regression analysis indicate that overall transparency is significantly related to all outcomes and is thus closely comparable to the long scale. Looking at the individual dimensions, we find differences between both data sets, which mainly concern the Disclosure and Timeliness dimensions. Those differences need to be further assessed in future research. However, both data sets support the notion that individual transparency dimensions have distinct effects on different outcomes, as was previously found for the long scale (Hossiep et al., 2021; Tomlinson & Schnackenberg, 2022).

The validation of the short version of the extended DCA-transparency scale comes with theoretical implications. First, the development of the presented scale fulfills the demand to create a short measure for perceived organizational transparency (Hossiep et al., 2022). This short version can be applied in research designs compromising a variety of constructs in order to ensure appropriate questionnaire length. In practical settings, only considering transparency, we recommend using the long scale.

The examination of the short scale reveals that the construct leads to valid results concerning mean values, correlations, and relationships to well-established outcomes of the dimensions. However, we would still recommend the use of the long scale in research projects focusing on information quality since dimensions with multiple items are generally more robust (Worthington & Whittaker, 2006). In more extensive surveys, the short scale is an appropriate way to capture the essence of organizational transparency.

Despite the extension of the scale by the dimensions of Timeliness and Relevance, the short scale presented comprises fewer items than the original long version. Here, the short scale provides additional value since the two important transparency dimensions are taken into account and the scale is nevertheless shorter, thus further reducing participants' completion time.

We encourage researchers to use the short scale in further contexts outside the organizational setting, such as in technology acceptance research, as was previously done with the long version of the scale. As proposed by Schnackenberg et al. (2021), the multidimensional operationalization of transparency should be used in this context to

further understand established factors such as ease of use or the technologies' usefulness. Furthermore, it would be interesting to investigate which dimension has the greatest influence on certain outcomes in which situation (Schnackenberg et al., 2021). Finally, it seems worthwhile to investigate the relationship between transparency and relevant outcomes based on necessity and sufficiency.

Even though the focus of this report is on scale validation, there are practical implications arising from the short version. Several studies show that perceived transparency in the organizational context leads to important organizational outcomes, such as trust (Auger, 2014; Schnackenberg et al., 2021), job satisfaction (Hofmann & Strobel, 2020), technology acceptance (Venkatesh et al., 2016), justice perceptions (Märtins et al., 2023), and might also lead to potential negative consequences (Christensen & Cheney, 2015; De Cremer, 2016). Hence, it is pivotal for organizations and decision-makers to measure and manage the perception of transparency. Thus, we encourage practitioners to measure transparency perception within organizations while considering its multidimensional nature. In very extensive surveys, the short scale can be used.

The validation of the short scale has some limitations that should be addressed in future research. Namely, the instrument was tested in an organizational context only. While it is expected that transfer to other domains (such as technology acceptance research) is possible due to the open wording of the items, that has not been explicitly tested for the short scale. For the long scale, however, there are already some indications of such suitability (e.g., Märtins et al., 2023). Another limitation is the use of a cross-sectional data set (Sample 2). Limitations resulting from common-method bias cannot be fully excluded (Podsakoff et al., 2003). Especially with regard to the adjusted R^2, we find relatively higher values, which might be explained by the use of cross-sectional data in the second sample. In addition, the relationships of individual dimensions differ in the cross-sectional data set compared to the longitudinal data. However, looking at the effects of overall transparency, we find closely comparable effects on outcomes. Future research should replicate the study with further data sets. Another limitation arises from the use of only two items per dimension, which leads to non-identifiable factors.

Conclusion

In this article, we reviewed the validity and usefulness of a short version of the extended DCA-Transparency scale. The underlying long scale, consisting of the dimensions Disclosure, Clarity, and Accuracy, was originally developed by Schnackenberg et al. (2021), and extended by the dimensions of Timeliness and Relevance, and translated into German by Hossiep et al. (2021). Based on this scale, two items per dimension were selected, and the validity of this short scale, consisting of ten items, was tested. The results confirm that the short scale is a valid instrument for measuring the perceived quality of shared information in an organizational context. The short scale as developed is particularly suitable for use in very extensive surveys. In addition, the consideration of the multidi-

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mensionality of the construct allows implications and concrete recommendations to be derived for action.

Supplementary Materials

For this article, the following supplementary materials are available:

- Longitudinal data (see Hossiep & Märtins, 2021)
- Cross-sectional data (see Hossiep et al., 2023)
- Supplementary materials and analyses (see Hossiep et al., 2024)

Index of Supplementary Materials

Hossiep, C. R., & Märtins, J. (2021). *Längsschnittstudie: Organisationale Transparenz* [Longitudinal data]. PsychArchives. https://doi.org/10.23668/psycharchives.2638

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Hossiep, C. R., Märtins, J., & Schewe, G. (2024). *Supplementary materials to "Measuring organizational transparency with 10 items: Validation of a German short scale"* [Research materials, additional analyses]. PsychOpen GOLD. https://doi.org/10.23668/psycharchives.14143

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