Demanding resources: Agreement across characteristics seen as both challenges and resources

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Abstract

568 workers rated job characteristics in terms of relevance as well as perceptions as challenges, hindrances and resources. We find strong associations between characteristics such that what is viewed as a "resource" is also very often considered a "challenge". This agreement was moderated by the nature of the job characteristic.

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An abundance of research applying the job demands-resources model (Demerouti et al., 2001) and job demands-resources theory (Bakker & Demerouti, 2017) underscores the importance of job characteristics on the experience of work. Resources are defined as physical, psychological, social, or organizational aspects of the job that may help an employee achieve work goals, reduce job demands, or promote personal growth and development (Demerouti et al., 2001). Demands, on the other hand, include components of a job that require sustained effort, and as such, produce psychological or physiological strain (e.g., high work pressure, Demerouti et al., 2001). These two categories of outcomes (e.g., "good" and "bad") are thought to occur via one of two different mechanisms: motivational (resulting from resources) or health impairment (resulting from demands, Bakker & Demerouti, 2014). Much of our existing research on the JD-R assumes that certain characteristics (for example, autonomy) are resources and others (for example, time constraints) are generally considered demands. This study searches instead for circumstances that provide exception to this static dichotomy of job characteristic mutual exclusivity.

Could a Work Demand be Appraised "Positively"?: The Challenge-Hindrance Framework

Although the word "stress" often carries a negative connotation, the "father" of the current concept, Selye (1936), conceptualized stress much less perjoratively - rather thinking of it as a *response to change*. For instance, consider the different reactions two different employees may have to being nominated to give a speech at an upcoming company event. One may appraise the nomination as a negative stressor. However, another employee may appraise the nomination to do so as an opportunity to share their

experiences with more of their coworkers, or one in which they may receive recognition they have desired. Selye the physician would likely have labeled the two responses as subjective manifestations of "Distress", and "Eustress" (Selye, 1974). In modern I-O Psychology parlance (and more consistent with the JD-R framework), the two workers would both be characterized as appraising the speaking opportunity as a job demand, but one would be appraising the demand as a *challenge* while the other would appraise the demand as a *hindrance* (Cavanaugh et al., 2000). According to Cavanaugh et al. (2000), challenge demands promote mastery, personal growth, and future gains. Hindrance demands, in contrast, inhibit growth, learning and goal achievement. Perhaps not surprisingly, challenge demands are typically associated with positive outcomes, whereas hindrance demands are associated with more negative outcomes (e.g., Cavanaugh et al., 2000).

Prior to proposing specific predictions regarding the current SIOP presentation, the empirical evidence on challenge and hindrance demands is very briefly shared below. To begin, the first logical question is whether employees actually distinguish between challenges and hindrances, and research suggests that they can and do. For example, Bakker and Sanz-Vergel (2013) found that perceived work pressure can be classified as a hindrance demand, and emotional demands as a challenge demand. Webster et al. (2011) considered three common workplace demands including workload, role ambiguity, and role conflict. Interestingly, they found that while each could be appraised primarily as challenges or hindrances, employees could also simultaneously be perceived as being both a challenge and hindrance.

Current Study and Hypotheses

We explored the agreement of perceptions of job characteristics as resources as well as demands (in the form of challenges and hindrances). Given the definitions of each (i.e., aspect of one's job that can be functional in achieving work goals, reduce job demands, or stimulate personal growth/development [resource] vs. aspect of one's job that can promote

mastery, personal growth, or future gains [challenge]), we propose respondents may consider the same characteristic to be viewed as both a challenge as well as a resource. That is, we explore whether these perceptions are orthogonal, contradictory, or perhaps even complimentary. Utilizing the job demands-resources theory and the challenge-hindrance framework, we propose that job characteristics appraised as "challenge demands" (i.e., promote mastery, personal growth, and future gains) may also be viewed as job resources.

Hypothesis 1: Characteristics perceived as challenges are also commonly viewed as resources.

Although the same job characteristic may be percieved as both a challenge and a resource, it is also likely that some characteristics are less likely to be viewed as mutually complementary as others. For example, a physically strenuous job requirement such as "carrying heavy objects" would be less likely to be viewed both as a challenge and a resource whereas a structural characteristic such as "negotiating work schedules" may very well be viewed (likely in different circumstances) to be both a control-oriented resource as well as a challenge. O*Net has different levels of abstraction with regard to the nature of job characteristic, we will be exploring a mid-level abstraction with seven different characteristic "scales".

Hypothesis 2: The association between challenging and resourceful characteristics is moderated by type of characteristic.

Method

We evaluate agreement across perceptions of present job characteristics regarding their characterization of resource, challenge, and hindrance (Bakker & Demerouti, 2017; Bakker et al., 2003; Demerouti et al., 2001). To capture an effectively exhaustive list of characteristics that apply to, theoretically, *every* possible job, we consult the unifying framework of O*Net.

Materials

Our survey consisted of 98 items crafted from job characteristic descriptors located within O*Net's classification of "work activities": 1) Information Input (5 statements), 2) Interacting with Others (17 statements), 3) Mental Processes (10 statements), and 4) Work Output (9 statements) and "work context" groupings: 1) Interpersonal Relationships (14 statements), 2) Physical Work Conditions (30 statements), and 3) Structural Job Characteristics (13 statements).

The O*Net descriptors are written in a similar manner to a task statement presented within a job analysis, but the level of abstraction is closer to "responsibility" than task. For example, the descriptor for "level of competition", which is an element of the "structural job characteristics" grouping, is *…to what extent does this job require the worker to compete or to be aware of competitive pressures?* Other than minor grammatical editing (for example, changing "the worker" to "you"), we retained the O*Net wording for our item stems. We also retained O*Net's response scales, several of which were semantically unique across items, but all shared the same 5-point scale. It would likely NOT be considered controversial to referred to these as "effectively" Likert-type response scales.

put example response scale in

Subsequent to providing ratings of whether or not each of the 98 O*Net characteristics were relevant for the respondent's work, each respondent who agreed that an element had at least some relevance to their job was then also asked to rate that element in terms of, 1) . . . this aspect of your job is a resource that can be functional in achieving work goals, reduce job demands, or stimulate personal growth/development, 2) . . . this aspect of your job is a challenge that can promote mastery, personal growth, or future gains, and 3) . . . this aspect of your job is a hindrance that can inhibit personal growth, learning, and work goal attainment.

The total number of items on the survey was less than 392 (98 characteristics x 4 administrations) because we did not ask for demand and resource evaluations for 14 O*Net characteristics that we projected would have very low frequency of endorsement across respondents (one excluded characteristic, for example, was *…the extent to which the worker is exposed to radiation on the job*).

Participants

Eligibility requirements included being 18 or older and holding either a full- or part-time job. Participants were asked to think about their primary job while answering the survey. We sampled from a Prolific panel, resulting in 785 individuals who initially accessed the survey link. Of those, 112 indicated that they were not interested, had more than 200 missing responses, or had 20 or more identical consecutive sequential responses (Yentes & Wilhelm, 2021). Additional screening using four embedded attention checks resulted in the retention of 568 respondents. A total of 13.57% had been in their job less than 6 months, 19.20% between 6 months and a year, 49.12% between one and five years, 13.27% between 5 and 10 years, and 4.87% more than 10 years. Reported ages ranged from 18 to 65 with an average of 28.18 years old (SD = 7.53). Gender was captured via a free-field gender identity category, although the sample predominantly self-identified as female (52.6%) or male (46.8%). Participants were compensated for their participation in this study in the amount of six dollars through Prolific.

Results

All analyses are focused on characteristics of work that were rated as being "relevant" to the respondents' job. Upon confirming that a work characteristic was relevant, respondents then also rated the extent to which that characteristic was percieved as a resources, challenge, and hindrance.

Resource, Challenge, and Hindrance Associations

Hypothesis 1 predicted a positive association between total resources and total challenge demands. Table 1 shows a very high association between resources and challenges ($r = .86$). These associations, however, are only capturing the relationships between these demands and resources in *sheer volume*. That is, table 1 operationalized each variable as the sheer number of resources, hindrances, or challenges that a respondent indicated were present within their job. This correlational analysis simply implies that workers who experience more resources also perceive greater challenges. The associations between resources and hindrances ($r = .23$) and challenges and hindrances ($r = .22$) were also significantly positive with moderate magnitude associations, suggesting that some of this "sheer volume" may be capturing job complexity (that is, the more complex the job, the more characteristics are relevant, and therefore the more likely it is to have *more* challenges as well as *more* hindrances as well as *more* resources). Although we did not address job complexity as a moderator in the current paper, we do plan to do so in future investigations. Also, take note of the average numbers of resources, challenges, and hindrances cited by our sample, where these respondents generally experienced fewer hindrances in their jobs ($M = 13.09$) than both resources and challenges.

Note. Should probably run a quick anova on these

Convergence (same characteristic). We next looked for convergence of perception at the level of each individual job characteristic. Here, we calculated the *percent of affirmative correspondence* between individual characteristic perceptions. That is, a respondent needed to agree that *…being in contact with others* was both a resource as well as a challenge in order to be implicated as affirmatively agreeing. We did this for each of the 84 individual characteristics that were rated as a resource, challenge, or demand and then computed an aggregate level of affirmative correspondence for each person. Figure 1

presents the results of these correspondences, showing that there was not much mutual agreement regarding characteristics being viewed as both hindrances and resources ($M = 0.14$) or as challenges and hindrances ($M = 0.14$). However, when a characteristic was viewed a resource, it was more likely to also be percieved as a challenge (although the correspondence also exhibited quite a bit of variability; $M = 0.51$, $sd = 0.21$).

Figure 2 explores the possibility of moderation by *type of characteristic rated* for the resource-challenge convergence. Here we categorized each characteristic by its O*Net "scale" (one of seven), and the graph shows greater consistency across certain characteristics (for example, *Mental Processes* or *Interacting with Others*) and less convergence across other *types* of job activities (for example, *Physical* characteristics). A repeated-measures ANOVA retaining these 7 scales as independent variables yielded a treatment effect of $F_{(6,3,402)} = 613.5$, $p < .001$ (the subjects' effect was $F_{(567,3402)} = 6.13$, $p < .001$.

Discussion

Our findings highlight the importance of dissociating the *nature* of job demands. Similar to the eustress/distress distinction (e.g., Selye, 1974), it would seem as though demands should be thought of in a valenced manner (e.g., is it a "good" demand or a "bad" demand)[1].

The major goal of this paper was to further explore the relationships among total perceived challenge demands, hindrance demands, and resources and outcomes of engagement, stress, and burnout. Additionally, we considered whether resources and challenge demands were perceived as distinct, and finally, whether the patterns were

[1] Beyond this SIOP presentation, we have further investigated differential associations of challenges and hindrances with "good" and "bad" outcomes, but have not confirmed meaningful differential associations within this current dataset.

similar across job categories/types of work. The results suggest a positive relationship between both resources and engagement (H1a), and challenge demands and engagement (H2a). Employers would benefit from understanding that at leas the perception of having "more" resources and more challenge demands in a job is highly associated with reported engagement. While not a causal relationship, it points to the potential value of these kinds of employee support nonetheless. The other relationships with outcomes of stress and burnout were not supported, suggesting that the sheer number of resources, challenges, and hindrances are not significantly related to these negative outcomes. It is possible that rather than volume, categorically some demands are more related to these outcomes than others. Further, total resources were highly associated challenge demands (supporting H4). We could even argue, given the magnitude of the correlation, that they are capturing the same thing (74% overlap with a correlation of .86). Need to also talk about our exploratory findings regarding patterns across job type

We conceptualized resources and demands in terms of perceived total amounts.

The dissociation of challenges and hindrances may be important moving forward. Cavanaugh et al. (2000) found that challenge demands were positively related to job satisfaction and negatively related to job search behaviors, while hindrance demands demonstrated the opposite pattern with job satisfaction and job search behaviors in a sample of managers. However, Abbas and Raja (2019) found that challenge and hindrance stressors were both positively related to strain and turnover intentions. We also have some evidence that challenge-hindrance appraisals are related to engagement in the expected direction whereby hindrance appraisals are negatively associated with engagement and challenge appraisals are positively associated with engagement (Crawford et al. (2010)). The appraisal process also suggests theoretically that the perception of a job characteristic as a challenge or hindrance is a mediator. Gerich (2017), for instance, found that employee well-being was, in part, explained by appraised challenge or hindrance demands such that working conditions of time pressure, qualitative demands, responsibility, and interruptions,

were partially mediated by challenge and hindrance demands. To provide further evidence of the distinction between challenge and hindrance appraisals on work-related outcomes, Podsakoff et al. (2007) meta-analysis supported the original assertion of Cavanaugh et al. (2000) such that challenge stressors were positively related to job satisfaction and organizational commitment, and negatively related to both turnover intentions and actual turnover, while hindrance stressors produced the opposite pattern of relationships.

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Table 1

Resource, challenge, and hindrance correlations (counts data).

	1	2	*M*	*SD*
1. resource	-		36.02	13.26
2. hindrance	.23***	-	13.09	13.62
3. challenge	.86***	.22***	35.64	13.63

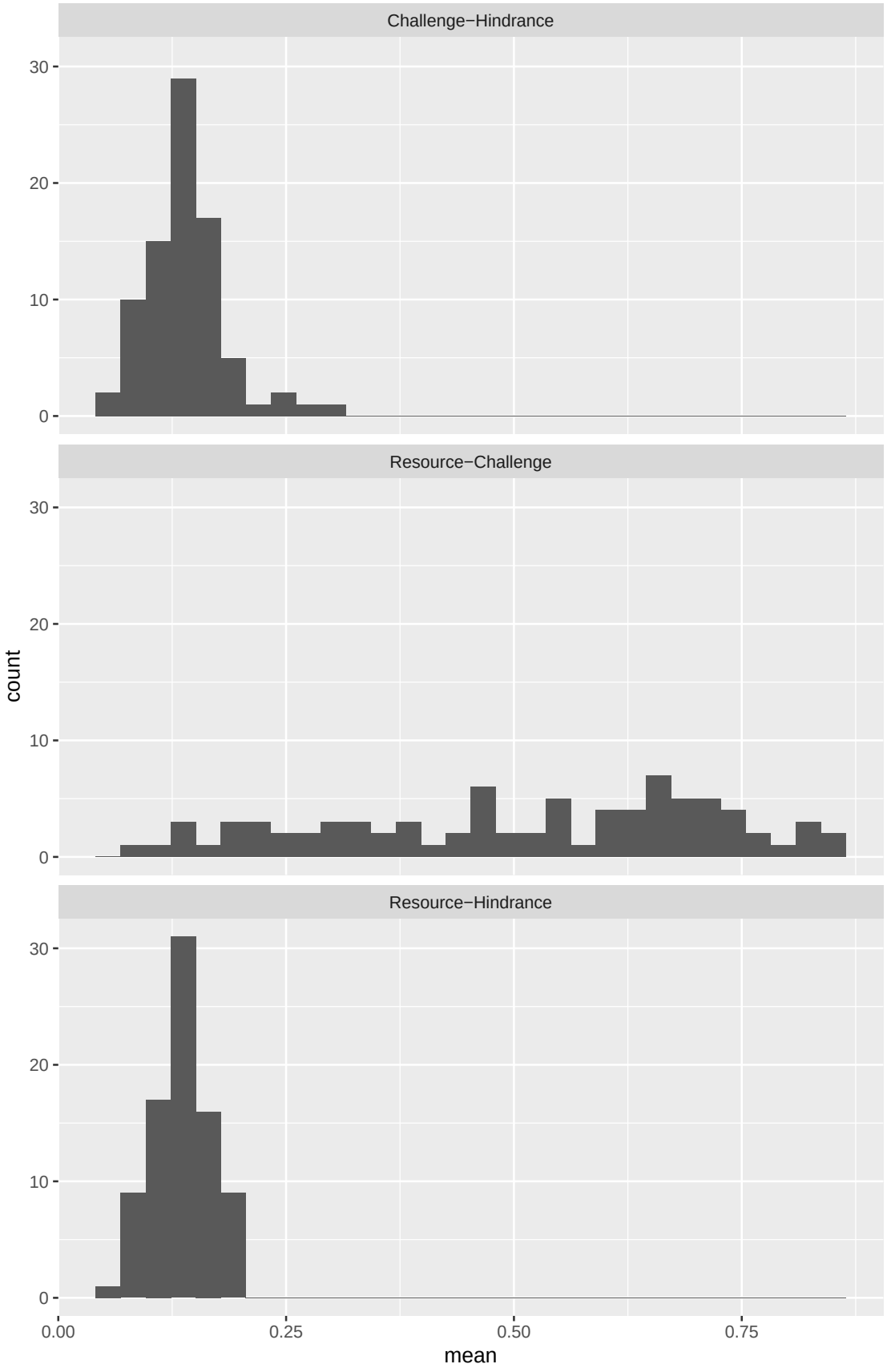

Figure 1. Percent convergence (characteristic rated consistently as, for example, both a resource and a hindrance).

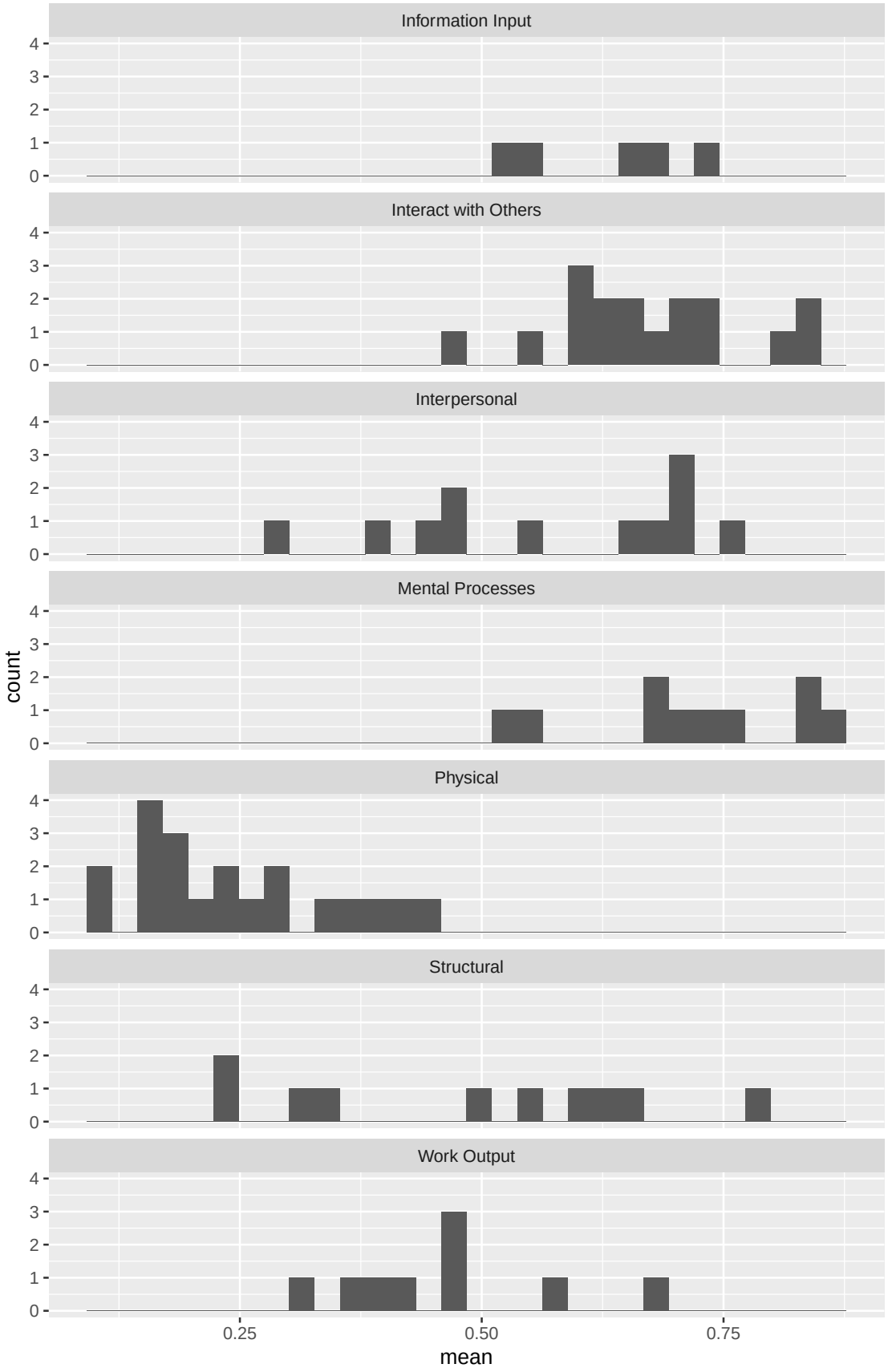

Figure 2. Resource and challenge agreement across ONet characteristic groupings (e.g., scales).