

A Study of Holland's Theory Using the SDS Vocational Aptitude Test

—Utility and Application—

Takaharu MORISHITA,¹ Kouhei MATSUDA,² Yuko DOBETA,³
Emi SATO,⁴ and Hideki MITO⁵

The purpose of this study is to verify the validity of the SDS Vocational Aptitude Test (SDS) by comparing results of this test for students and employees.

In the method adopted, Research 1 and 2 were conducted on students, and Research 3 was conducted on employees. The revised edition of the SDS, the personality tests (NEO-FFI), and the 90-adjective checklist to determine personality characteristics were used in Research 1, while the test-retest method. The validity of this test was also confirmed in terms of concurrent validity.

(1) In Research 1, factors extracted from a wide range of subjects were analyzed based on the results of factor analysis in 2005, and the high reliability of the test was verified through the test-retest method. The validity of this test was also confirmed in terms of concurrent validity.

(2) In Research 2, the judgment of university students was analyzed to determine the probability with which the actual occupation can be judged from the desired type of occupation. Unexpectedly, we found that the probability of judging correctly when the occupation was selected in six categories was 16.7%. When we investigated the probability with which the occupation can be judged from the primary desired type of occupation, however, we found that the occupation could be judged correctly in four categories with a probability of 50% or higher. This confirmed the criterion-related validity of the test.

(3) In Research 3, we examined the test validity from the viewpoint of adjusted persons and maladjusted persons using the test results of employees. By comparing the profiles in six categories, we found that adjusted persons and maladjusted persons have characteristic profiles.

Key words: Holland's theory, self-directed search, utility and application

INTRODUCTION

Like the proverb "Birds of a feather flock together," Holland's theory assumes that people who choose the same occupation have similar personality characteristics (Holland, 1985). Holland categorized personalities into six types: Realistic (R), Investigative (I), Social (S), Artistic (A), Enterprising (E), and Conventional (C), termed RIASEC. A higher the degree of congruence between personality traits and occupation implied a

higher professional satisfaction, stability, and achievement (Holland, 1985).

Based on this theory, Holland developed the Self-Directed Search (SDS) (Holland, 1970); a Japanese edition of the SDS has also been developed (Takeda & Morishita, 1981). In the 1980s, when the SDS was first created, sales or office work was the major occupation. The recent increase of computer use has resulted in a rise in the mechanization or service aspects of office work. Changes in the occupational environment have caused

¹ Department of Psychology, Faculty of Psychology and Welfare, Tezukayama University

² Department of Psychology, Faculty of Human Studies, Bunkyo Gakuin University

³ Department of Psychology, Faculty of Service Industries, Marketing and Distribution Sciences

⁴ Department of Developmental Psychology, Graduate School of Shirayuri College

Current university: Faculty of Administration, Tokyo Fuji University

⁵ Faculty of Health & Welfare, Kansai University of Welfare Science

an economic turn of events and a change in employment trends. For example, in making employment choices, recent graduates attached great importance to their own ability and sense of values (Japan Productivity Center for Socio-Economic Development, 2006).

Such changes in the occupational environment have provided the opportunity to develop university students' career consciousness as they make vocational choices. And so it came to appear the theory that workers think for a personal occupational career for the better vocational behavior.

A career involves "experience," "development," and "duties" that have continuity and durability over time (Health, Labor and Welfare Ministry, 2002).

Even for university students and people who are employed, consciousness about a career helps with vocational choices for the future. Both the employed and the unemployed should use vocational aptitude tests to aid them in learning about their vocational choices and making career decisions. To help such people understand their personality type and make career choices for themselves, we developed a revised Japanese edition of the SDS.

In our preliminary research, we reconfigured each item in the activity scale, which estimates how a person spends his time or what his involvements are, and the competency scale, which is a substitute for aptitude tests. Because these items address complex real-life accomplishments, they are a quick way to learn about a person's talents, competencies, and occupational interests. We investigated the degree of understanding of sentence contents and occupation recognition for students from six universities in the Tokyo and Osaka areas. The investigation period was from January to February 2005. The six RIASEC categories of the SDS were analyzed, using the areas of activity, competency, and interest (Dobeta et al., 2005; Sato et al., 2005; Matsuda et al., 2005).

In addition, items that had low factor loading or were difficult to understand were replaced.

After preliminary investigation, we performed a second investigation with university students, in order to standardize our version of the SDS. The investigation period was from April to December 2005. The 1,487 participants (744 males and 743 females) were students from 15 universities, a junior college, and a vocational school. Factor analysis confirmed Holland's six-factor structure using the areas of activity, competency, and interest (HCR, 2006).

We examined the reliability and validity of the revised edition in the following ways.

Research 1 To confirm the reliability, we performed test-retest and concurrent-validity by relevance with the SDS in six categories and other personality characteristics (NEO-FFI).

Research 2: To confirm criterion-related validity, we performed a discriminant analysis to establish the probability that this version of the SDS could distinguish the six categories (RIASEC).

Research 3: To analyze the SDS profiles of adjusted and maladjusted workers, we compared the SDS profiles of university students with those of employed persons. A new edition of the SDS was developed to determine the subject's vocational aptitude based on occupational personality type and interest.

Research 1: Characteristics of personality traits in six categories

a) Purpose

The purpose of this study is to confirm the reliability and concurrent validity of the revised edition of the Self-Directed Search Aptitude Test (SDS). The 90 personality adjectives checklist was then used to determine the correlation between the adjectives to express personality types as cited by Holland (1985) and the revised edition of the SDS.

b) Method

Period of investigation: May to Nov., 2005. An interval of three weeks was established for the test-retest method.

Participants: Participants consisted of

Japanese university students who majored in marketing, economics (informatics), and service-related industries with ages ranging from 18 to 22. There were 46 male participants and 40 female participants for the test-retest method, 45 male participants and 39 female participants for coefficient of correlation between the revised edition of the SDS and the NEO-FFI, and 68 male participants and 69 female participants for coefficient of correlation between the revised edition of the SDS and the 90 personality adjectives checklist.

Measures: The revised edition of the SDS was used. For the SDS, scores in the four categories (activities, competencies, occupations interest, and self-rating) as well as the Total Score consisting of the sum of these four scores were calculated. For personality traits, the Big Five Personality Inventory; NEO-FFI (Shimonaka, et al., 1999), and the 90 personality adjective checklist (Holland, 1985) were used. The NEO-FFI was used because it is an inspection method that enables comprehending the five main dimensions of personality and for verifying these hypotheses. The adjective checklist consists of adjectives to express the state of six categories of the SDS (6 categories \times 15 adjectives = 90 words), and it was answered by putting a \bigcirc mark on the adjectives that apply to the answerer and an \times mark on those that do not.

c) Result

Reliability: We showed reliability coefficients calculated by the test-retest method (Pearson's coefficient) (Table 1-1). The reliability of the test-retest method confirmed to maintained a relatively high level of coefficients both males and females for all categories, although lower coefficients were observed more frequently among females than among males.

Concurrent validity: We showed correlation coefficients between the revised edition of the SDS and the NEO-FFI (Table 1-2). Positive correlations (from $r=.443$ to $.571$) among the categories social, enterprising

and Extraversion were observed among both male and female groups, supporting the hypothesis. Also, only female group, social positively correlated with agreeableness ($r=.389$). And only male group, enterprising positively correlated with conscientiousness ($r=.352$). As to artistic category, only male group, correlated with openness ($r=.397$), but no correlations were found between the category of and Neuroticism, so the hypothesis was partly supported. However, negative correlations between the category of enterprising and neuroticism ($r=-.414$) were observed in the groups of males while positive correlations between the category of investigative and extraversion ($r=.484$) were observed in the group of females. So, we showed the correlations of SDS and adjectives inventory (Table 1-3). Both male and female groups exhibited relative correlations between activities, competencies and total score of the revised edition of SDS and enterprising of personality adjectives test (from $r=.431$ to $.542$). However, the correlations differed between the two groups. In the male group, artistic ($r=.409$) and conventional ($r=.429$) correlate with personality adjectives test. In the female group, social correlated with personality adjectives test ($r=.400$). These were not adequate results.

d) Conclusion and Discussion

The reliability of the revised edition of the SDS has been confirmed to some extent. And, a slightly lower coefficient of mainly self-rating observed in the group of females should be examined further.

The correlations between the revised edition of the SDS and the NEO-FFI were not found between the category of artistic and neuroticism. This suggested that participants consisted of only university students who majored in social sciences and they had originally low scores in the category of artistic. On the other hand, the result was the negative correlation between the category of enterprising and neuroticism in the group of males, the lowness of neuroticism was connected to good interpersonal relations in

Table 1-1 Test-retest reliabilities of SDS subscales and total score

SDS scores	Activities	Competencies	Occupations	Self-estimates	Total score
Realistic (R)	.889 .803	.828 .759	.774 .756	.896 .703	.929 .833
Investigative (I)	.868 .588	.858 .770	.757 .790	.807 .629	.887 .783
Artistic (A)	.853 .807	.839 .697	.846 .839	.744 .596	.900 .873
Social (S)	.846 .857	.851 .786	.786 .784	.858 .734	.925 .879
Enterprising (E)	.853 .832	.904 .729	.806 .866	.792 .557	.952 .884
Conventional (C)	.744 .754	.844 .777	.764 .859	.764 .562	.883 .794

Note: Upper coefficient shows male. Lower coefficient shows female (male $N=46$, female $N=40$).
The total score consists of five aspects (activities, competencies, occupations and two self-estimates).

Table 1-2 Correlation between the SDS six categories and NEO-FFI

NEO-FFI	SDS total score					
	R	I	A	S	E	C
Neuroticism	-.015	-.259	-.102	-.230	-.414	-.244
	-.291	-.318	.238	-.329	-.251	-.207
Extraversion	.067	.119	.191	.497	.443	.087
	.246	.484	.140	.554	.571	.093
Openness	.195	.158	.397	.074	.072	-.081
	.264	.320	.163	-.051	.118	-.084
Agreeableness	.027	.334	.006	.228	-.065	.033
	.183	.223	.111	.389	.137	.105
Conscientiousness	-.079	.160	.063	.093	.299	.343
	.284	.160	-.099	.197	.352	.228

Note: Upper coefficient shows male. Lower coefficient shows female Bold letters show coefficient higher than $r=.350$ (male $N=45$, female $N=39$).

the category enterprising. For the correlation between the category investigative and extraversion in the group of females, however, we suggested that the aspect of having creativity and an inquiring mind of the category of investigative are connected to the strong curiosity with rising intention expressed in extraversion.

We couldn't clear relation the personality adjectives checklist and revised edition of the SDS. This suggested that some adjectives may be unfamiliar to contemporary university students, so the answerer may

have answered that such words are not applicable to university students.

Research 2: Discriminant analysis for the six personality categories

a) Purpose

The six occupational personality traits (RIASEC) were classified by type of occupation. Holland proposed that the higher the degree of congruence between personality traits and occupation, the higher the degree of professional satisfaction, stability, and achievement. If this hypothesis is true, it

Table 1-3 Correlation between the SDS six categories and 90 personality adjectives checklist

Personality type	SDS scales				
	Activities	Competencies	Occupations	Self-estimates	Total score
Realistic (R)	.159	.227	.250	.114	.231
	-.003	.095	-.078	-.016	.006
Investigative (I)	.235	.250	.321	.176	.334
	.339	.096	.212	.130	.268
Artistic (A)	.211	.409	.260	.239	.342
	.147	.309	.198	.154	.249
Social (S)	.280	.291	-.005	.174	.252
	.225	.400	.219	.224	.343
Enterprising (E)	.438	.438	.294	.374	.479
	.431	.542	.177	.360	.494
Conventional (C)	.239	.429	.343	.323	.457
	.049	.080	.151	.125	.133

Note: Upper coefficient shows male. Lower coefficient shows female. Bold letters show coefficient higher than $r = .400$ (male $N = 68$, female $N = 69$).

might be possible to use the subject's desire for a job or the student's major to determine personality traits. Thus, we performed discriminant analysis (McLachlan, 2004) to confirm the criterion-related validity of our revised edition of the SDS test. We examined the degree of congruence between choice of future work and the six categories of personality traits.

b) Method

Period of investigation: May to November 2005.

Participants: Japanese university students, majoring in various fields (Table 2-1). A total of 1,476 participants were the subjects for discriminant analysis.

Measures: We used the revised (Japanese) edition of the SDS. The criterion for the discrimination was the desired type of job and the student's major. The independent variables were the RIASEC scores.

Analysis: The SDS uses RIASEC scores for activity, competency, and occupation. To confirm criterion-related validity, linear discriminant analysis was performed by desired type of jobs using the revised SDS's RIASEC scores for activity, competency and interest. We conducted two types of analy-

sis. One involved analysis of the student's desired job choices, classified by the six types of occupation. The other involved the student's major attributes, classified by the six types of occupation. The linear discriminant function was given by the following equations.

$$\text{constant} = -\frac{1}{2} \bar{\mathbf{x}}'_j \text{cov}^{-1} \bar{\mathbf{x}}_j$$

$$\text{coefficient vector} = \text{cov}^{-1} \bar{\mathbf{x}}_j$$

The generalized squared distances between groups were given by the following.

$$D^2(i|j) = (\bar{\mathbf{x}}'_j - \bar{\mathbf{x}}_j)' \text{cov}^{-1} (\bar{\mathbf{x}}'_j - \bar{\mathbf{x}}_j)$$

We cross-tabulated the desired type of job and major relationships before analysis. Table 2-2 presents a cross table of major by desired job types. Our analysis of this cross tabulation revealed that it was controlling for two confounding criteria. As a result, we decided to perform separate analyses.

c) Result

Discriminant analysis was conducted on both the student's desired jobs and the student's major. The latter was assumed to be the most valuable aspect of student examinations. An F-test was conducted to deter-

Table 2-1 Classification of Japanese university students

Six type of department's attribution		Departments
R	Realistic	Engineering, Technology
I	Investigative	Medicine, Psychology, Graduate school
A	Artistic	Art and Design, Architecture, Image Arts
S	Social	Welfare, Nursing, Hospitality, Clinical Psychology
E	Enterprising	Business administration
C	Conventional	Accounting, Distributive Sciences

Table 2-2 Cross-tab of student's major by hope of job types

Hope of job	Six type of department's attribution					
	R	I	A	S	E	C
Realistic	6	2	2	5	3	1
Investigative	40	16	0	2	1	2
Artistic	6	3	42	7	5	4
Social	75	62	10	145	14	26
Enterprising	5	6	1	21	13	20
Conventional	1	2	0	21	5	14

Frequency of students that peeped at null and void answer.

Table 2-3 Discriminant function of students hope of jobs

Variable	Standard deviation			$F(5, 578)$	Discrimination		
	Total	Pooled	Between		Total	Hit	Rate
Realistic	9.62	9.38	2.51	6.98	19	4	.211
Investigative	9.79	8.82	4.73	27.92	62	41	.661
Artistic	11.02	10.26	4.50	18.74	66	42	.636
Social	6.96	6.87	1.36	3.79	328	100	.305
Enterprising	9.62	9.50	1.91	3.94	66	38	.576
Conventional	8.34	7.98	2.78	11.83	43	26	.605

Table 2-4 Discriminant function of student's major

Variable	Standard deviation			$F(5, 1470)$	Discrimination		
	Total	Pooled	Between		Total	Hit	Rate
Realistic	9.62	9.55	1.39	5.14	238	117	.492
Investigative	9.76	8.70	4.87	75.59	242	52	.215
Artistic	11.02	10.14	4.78	53.75	178	42	.236
Social	7.13	7.11	0.74	2.61	474	136	.287
Enterprising	9.52	9.47	1.24	4.17	155	63	.406
Conventional	8.22	8.20	0.87	2.73	164	44	.268

mine the effectiveness of the discriminant function and the significance level of the function. Results indicated appropriate discrimination rates. The desired jobs had a distinction rate of 49.9% for 591 participants. The maximum significance level was indicated for Investigative ($F(5, 578)=27.92$,

$p<.01$), and the minimum was indicated for Social ($F(5, 578)=3.79$, $p<.01$). The student's major had a distinction rate of 39.8% for the 1,476 participants, with the maximum significance level for Investigative ($F(5, 1470)=75.59$, $p<.01$) and the minimum for Social ($F(5, 1470)=2.61$, $p<.05$). Tables 2-3 and 2-4

present the details of this analysis. The distinction rates of the domains ranged from 21% to 66% for subject and first choice of job. As one factor involved the need for technology, it was suggested that the major at a university was connected with professional skill in the Realistic category. Both discriminant functions had statistical significance, but did not reach the practical distinction rate.

d) Conclusion and discussion

The results from both discriminant functions reflected the Japanese students' tendency to choose a social occupation, such as a service trade, regardless of occupation interest and specialty (Table 2-2). The social occupation's low F -value indicated that it was a general preference across all majors. The Investigative occupation had a high F -value, indicating that students who have characteristic tendencies chose investigative occupations. Japanese university students are apparently unaware of how their department is related to an occupation. The results of this study imply that Japanese students' choice of a major is not always related to their occupation interests. Future study should involve discriminant analysis that we included data of an incumbent in is necessary.

Research 3: Analysis of adjusted and maladjusted workers

a) Purpose

According to Holland's theory, people in the same occupation have similar personality characteristics (Holland, 1985). The present study seeks to answer the following two questions.

1. Is each occupational group (including male medical representatives (MRs), and female salespersons, coordinators and clerks) drawn from a unique SDS profile in the six categories?
2. Do maladjusted workers exhibit SDS profiles and personality traits that differ from those of adjusted workers?

b) Method

Period of investigation: July 2005 to April 2006.

Participants and method of examination: The goal was to compare (1) salespersons and clerks; (2) male MRs and female salespersons; and (3) male MRs and salespersons. Participants included 57 male MRs of a pharmaceutical company, 15 female salespersons and sales coordinators, 15 female clerks of a human resources company, and 15 male salespersons of a spring manufacturing company. The SDS and a personality traits checklist consisting of 42 adjectives were administered. Several additional questions were prepared (e.g., "Have you adjusted to your present work?" "Did you engage in the kind of work you wanted?")

c) Results

1. Characteristics of occupational groups in the SDS test

1.1 Comparison of the SDS results for female salespersons and those for female clerks

Activity and competency: For female salespersons and for female clerks, we analyzed activities, competencies and total scores. For activities, we found no significant difference; for competencies, however, female salespersons ($n=15$) had a significantly higher score in Enterprising than female clerks ($n=15$) did. In contrast, female clerks had a significantly higher score in Conventional.

Total score: The total scores (Fig. 3-1) of female salespersons (Mean=29.80 $SD=8.29$) were significantly higher than those of female clerks (Mean=21.70 $SD=10.80$) in Enterprising ($t=2.23, p<.05$). However, female clerks (Mean=19.50 $SD=5.57$) had significantly higher scores than female salespersons (Mean=26.70 $SD=5.30$) in Conventional ($t=3.50, p<.01$).

1.2 Comparison of the SDS results for male MRs and those for female salespersons

Activity and competency: In activities, female salespersons ($n=15$) scored significantly higher than male MRs ($n=52$) in Artistic and Conventional. In competencies,

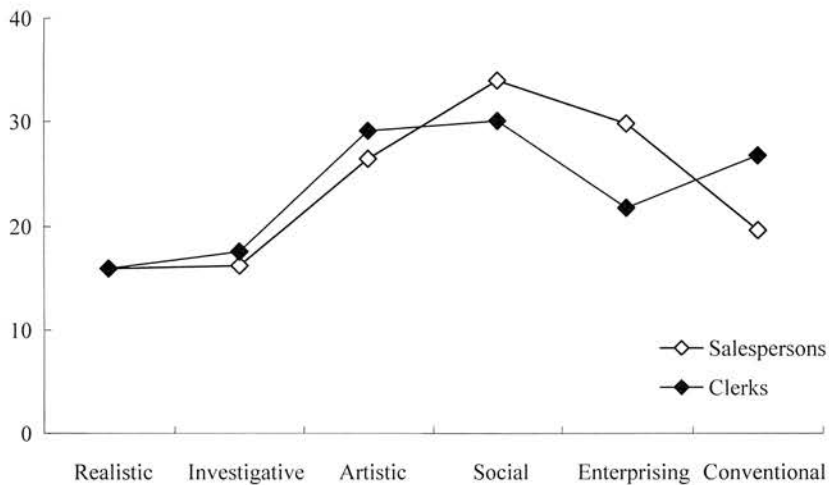


Fig. 3-1 The total score of salespersons (including coordinators) and clerks for female (salesperson; $N=15$, Clerk; $N=15$).

The total score consists of five aspects (activities, competencies, occupations and two self-estimates). The Total score's range is from 0 to 50.

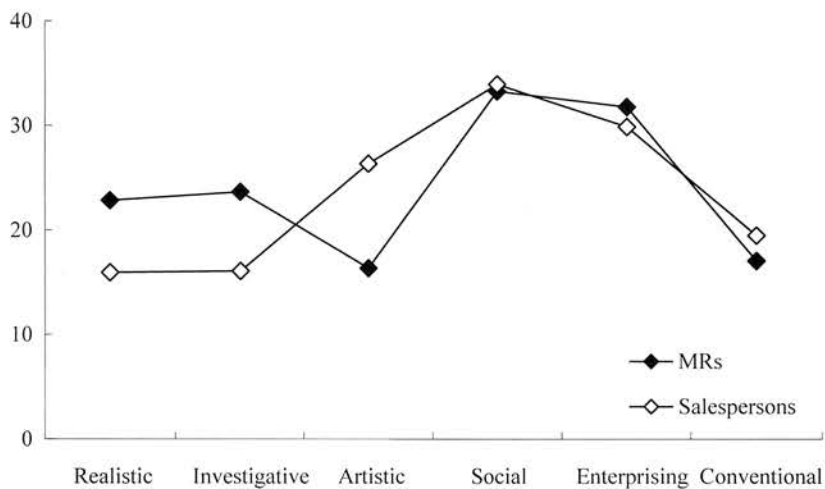


Fig. 3-2 The total score of male medical representatives and female salespersons (including coordinators). (MRs; $N=52$, salespersons; $N=15$)

male MRs scored higher in Realistic and Investigative.

Total score: As indicated in Fig. 3-2, male MRs (Mean=22.90 $SD=9.38$, Mean=23.70 $SD=9.42$) scored higher in Realistic ($t=2.63$, $p<.05$) and Investigative ($t=2.89$, $p<.01$) than did female salespersons (Mean=15.90 $SD=7.29$, Mean=16.10 $SD=6.47$). In contrast, female salespersons (Mean=26.40 $SD=8.83$) scored significantly higher in Artistic ($t=3.61$, $p<.001$) than did male MRs

(Mean=16.30 $SD=9.56$).

2. Analyses of adjusted workers and maladjusted workers

2.1 Comparison of SDS results for adjusted workers and maladjusted workers among male MRs

Activity and Competency: In activities, the difference between scores of the adjusted group ($n=52$) and those of the maladjusted group ($n=5$) was 2.7 in Social and 4.4 in Enterprising (Table 3-1). The adjusted

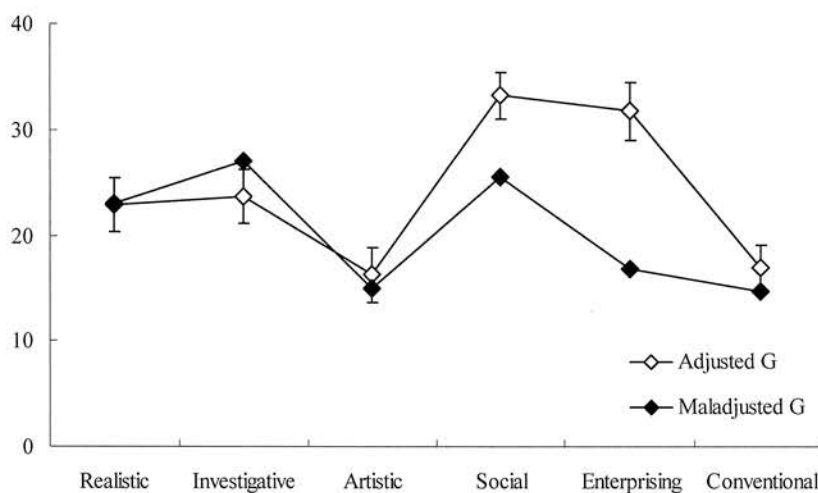
Table 3-1 The results of adjusted group ($N=52$) and maladjusted group ($N=5$) for male MRs

SDS scores	Group		R	I	A	S	E	C
Activities	Adjusted	Mean	5.5	5.1	4.1	8.3	7.6	4.2
		SD	3.7	2.9	3.1	2.6	3.4	3.0
	Maladjusted	Mean	5.2	5.0	2.2	5.6	3.2	3.8
		SD	4.4	3.8	2.2	3.5	1.6	3.1
Competencies	Adjusted	Mean	5.5	5.7	2.1	9.1	6.6	3.5
		SD	3.1	2.7	2.4	2.3	3.3	2.1
	Maladjusted	Mean	5.4	6.6	2.2	7.4	3.0	4.4
		SD	4.2	2.3	2.2	1.8	1.6	2.7
Total score	Adjusted	Mean	22.9	23.7	16.3	33.3	31.8	17.0
		SD	9.4	9.4	9.6	8.1	10.1	7.7
	Maladjusted	Mean	23.0	27.0	15.0	25.6	16.8	14.7
		SD	17.7	9.8	11.0	4.8	6.1	8.0

Activities and competencies's score range is from 0 to 11.

The total score consists of five aspects (activities, competencies, occupations and two self-estimates).

The total score's range is from 0 to 50.

**Fig. 3-3** The total score of adjusted group ($N=52$) and maladjusted group ($N=5$) for male MRs

group scored higher than the maladjusted group in all six categories. Likewise, in competencies, the adjusted group scored higher than the maladjusted group in Social. In Enterprising, the adjusted group scored high, with a difference of 3.6 between scores. In contrast, the maladjusted group scored higher than the adjusted group in Investigative and Conventional.

Total score: In Social, the adjusted workers scored 33.3 and the maladjusted workers scored 25.6; in Enterprising, the adjusted workers scored 31.8 and the maladjusted

workers scored 16.8 (Fig. 3-3). Next, we carried out an analysis by SDS summary code (the three highest total scores composed of the five aspects). Of the 52 adjusted workers, 14 were SE; 14 were ES; 4 were SI; and 4 were I/S. In contrast, the maladjusted workers indicated five types: IR, SE, RI, and RE, IR/A.

2.2 Comparison of the SDS results for adjusted and maladjusted male salespersons for a spring manufacturing company
Activity and Competency: In activities, the adjusted workers ($n=9$) scored higher than

maladjusted workers ($n=6$) in Social and Enterprising. In Enterprising, the difference between scores of adjusted salespersons and those of maladjusted salespersons was 2.9. In Realistic, however, the maladjusted workers scored higher than the adjusted workers. In competencies, the adjusted workers scored higher for Investigative, Social and Enterprising. The difference of 3.9 in Enterprising was particularly noteworthy.

Total score: The adjusted workers scored 26.1 for Investigative, whereas the maladjusted workers scored 18.2. The adjusted workers scored 30.1 for Social, while the maladjusted workers scored 22.8. The adjusted workers scored 28.0 in Enterprising, and the maladjusted workers scored 16.8.

d) Conclusion and Discussion

1) *What profile did male MRs, female salespersons, and clerks exhibit in the SDS?*

Our results supported Holland's theory. The results of 1.1 indicated a clearer difference among the groups in Enterprising and Conventional: the salespersons scored higher in Enterprising, while the clerks scored higher in Conventional. The results of 1.2 suggested that the differences among the groups were more gender-related than occupation-related. Males appeared to have strong Realistic and Investigative characteristics, whereas females appeared to have Social (Fig. 3.1) and Artistic (Fig. 3-2) characteristics. Male MRs and female salespersons exhibited unique profiles, tending to be Social and Enterprising. The male MRs and female salespersons were cooperative, warm, sociable, extroverted, and energetic. However, a wider spread of subjects is necessary.

2) *Did the SDS results reveal differences between adjusted and maladjusted workers?*

The maladjusted workers in each occupational group had different profiles than the adjusted workers. Male MRs and male salespersons had higher scores in Enterprising and Social, and they exhibited a unique profile. These results were remarkable. In contrast, in the same kind of sales, the maladjusted MRs scored high in Investigative, but

the adjusted salespersons of a spring manufacturing company is high??. Thus, the SDS profile and personality traits differed by type of sales.

DISCUSSION

In this study, we examined the effectiveness of the Japanese version of the SDS by comparing the results for university students and those for employed persons.

In Research 1, we examined the reliability and validity of the revised edition of the SDS, with university students as the subjects. The results confirmed almost a reliability coefficient exceeding 0.700, the same as that of the SDS before revision (Takeda & Morishita, 1981).

In addition, while confirming the reliability of the revised SDS in Research 1, we studied the results of university students; in Research 2, we performed a discriminant analysis of the probability that the SDS could distinguish the six categories of personality traits in occupations for university students.

There was a 16.7% probability that the subject chose a vocation accidentally. However, as a result of discriminant analysis, we could distinguish a probability of more than 50% in four domains the desired type of job by SDS. Therefore, we confirmed the criterion-related validity of the SDS. As students are likely to choose a vocation based on their own interest, this result suggested that SDS users could judge whether they were fit for an occupation.

In Research 3, we examined the effectiveness of the SDS for company workers from the viewpoint of adjusted and maladjusted workers. Comparison of profiles revealed that the maladjusted workers in each occupational group had a different profile than the adjusted workers.

It was suggested that the SDS could help them reconsider their occupational personality and confirm the directionality of their own career. Based on the results of this study, we recommend the Japanese version of the SDS as a practical and useful method

for assisting young age, middle-aged, and older people with their vocational choices. Based on these results, the Japanese version of the SDS was developed in 2006.

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