Hogan Personality Inventory, Hogan Development Survey, & Motives, Values, Preferences Inventory Global Norms

Documentation of Normative Data

THE SCIENCE OF PERSONALITY

EXECUTIVE SUMMARY

This report outlines the development and appropriate uses of Hogan's Global Norm. The Global Norm contains data from 41 languages and represents results from the Hogan Personality Inventory (HPI), Hogan Development Survey (HDS), and Motives, Values, Preferences Inventory (MVPI).

This document contains four sections. The first explains Hogan's approach to norm creation. The Global Norm is a multi-language norm comprised of data from every available translation for all three assessments.

Next, we outline the development of the Hogan Global Norm. This section contains information that describes the initial sample, the process we used to create the final global normative dataset, and the composition of the dataset by language.

In section three, we present normative tables based on HPI, HDS, and MVPI data in the global normative dataset and provide demographic information according to gender, age, and assessment purpose.

Finally, we provide guidance concerning the appropriate use and application of the Global Norm.

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1 – HOGAN'S APPROACH TO NORMS

Overview. Assume a person receives a raw score of 23 on a personality scale measuring Ambition. What does this score mean? Without a basis for comparison, the score means little. Norms provide a context for interpreting scores because they allow us to compare individual scores with those of a relevant group (Nunnally, 1978). For example, to understand an executive's Ambition score, comparing it to scores from other executives indicates how ambitious the person is relative to his or her peers. In contrast, comparing the same executive's score to the general workforce indicates how the person compares to workers occupying a variety of jobs, some of which might be held by less ambitious individuals.

As a result, an individual with an above average Ambition score, when compared to several other job categories, might appear to be of only average ambition when compared to other managers. For this reason, the quality and appropriate application of norms is critical for interpreting personality results.

Types of Norms. Hogan publishes two types of norms: single- and multi-language. Single-language norms represent a cross-section of a specific relevant workforce. Multi-language norms represent data combined from multiple languages and geographic areas

Single-Language Norms

When Hogan first creates a new translation, we often lack sufficient data to calculate norms that accurately represent a region's workforce. Consequently, we rely on data from convenience samples and developmental projects to create itinerant norms. We require at least 500 cases to calculate itinerant norms. In keeping with the recommendations outlined by the *Standards for Educational and Psychological Testing (*American Educational Research Association, 1999; hereafter "*Standards*"), we report all available demographic information, including age, gender, ethnicity, and job type. Although itinerant norms are not as representative as stratified norms, they are useful until we have enough data to calculate a single-language stratified norm.

Hogan creates stratified single-language norms when data are available from at least 2,000 cases. This larger dataset is essential because we must select specific cases to represent the labor force as closely as possible. When creating stratified norms, we may lack data for certain industries despite their prevalence in the workforce (e.g., agricultural workers). Therefore, our

stratified single-language norms do not always include all segments of the population, but do include those in which the assessment and norms are most likely to be used.

When developing stratified single-language norms, Hogan uses multiple stratification variables—characteristics to organize the data. We create norms that match the target population on each stratification variable as closely as possible. Although stratification variables may vary, job categories are usually the first level of classification. For example, if the Brazilian workforce contains 20% managers, we would create a Brazilian normative sample that also contains 20% managers. Ethnicity commonly forms the second stratum. Some countries have less workforce diversity, fewer concerns over subgroup differences, or legislation with fewer requirements than those in the U.S. Civil Rights Act of 1964 (see Myors et al., 2008 for review). In such cases, stratification by ethnicity may be unnecessary. Finally, we stratify by gender.

Multi-Language Norms

Hogan creates multi-language norms by combining data from multiple countries and languages into a single dataset. This appeals to multinational companies that are attracted by the simplicity of using one norm for all applications or need to compare applicants who assess in multiple languages. Our most commonly used multi-language norm is our Global Norm.

The development process for multi-language norms is similar to the process we use for single-language norms but primarily relies on only one stratification variable: language. First, we identify relevant languages. Next, we cap the maximum number of cases for each language. When more cases are available for a language, we selectively identify cases to include. When a smaller number of cases than the maximum number are available, we include all cases to maximize representation for that language.

2 – DEVELOPMENT OF THE GLOBAL NORMATIVE DATASET

Global Norm Development. Development of the Global Norm began with an initial sample of over 1.4 million cases of HPI data (N = 1,481,024), Hogan's most commonly used assessment. This data included representation from 41 different translations and adaptations of the HPI. We collected these data between April 2001 and October 2010.

We eliminated cases based on three criteria. First, we removed cases missing responses to more than 33% of HPI assessment items. Next, we eliminated cases for which we could not identify the assessment language. Finally, we eliminated all test cases, such as those used for quality assurance or demonstration purposes. The resulting sample contained 1,151,902 cases of data.

Next, we examined representation across languages. Some languages, such as the original U.S. English forms and other well-established translations (e.g. Australian English, Spanish) were overrepresented. Other newer and less frequently used translations (e.g., Estonian, Macedonian) were underrepresented. To ensure that the normative dataset did not contain an overrepresentation of any one language, we set a maximum threshold of 10,000 cases per language. When more than 10,000 cases of data were available, we randomly identified cases based on availability of HDS and MVPI data, workforce composition, assessment purpose (i.e., personnel selection, employee development), age, and gender. The resulting dataset included 145,792 cases of data. Table 1 displays the language representation in the global normative dataset.

Table 1 Global Norm Sample Distribution by Assessment Language

Assessment Language	Sample N	Sample %
South African English	1,117	0.77%
Arabic	117	0.08%
Bulgarian	702	0.48%
Bahasa Indonesian	205	0.14%
Bahasa Malaysia	14	0.01%
Brazilian Portuguese	10,000	6.86%
Castilian Spanish	1,082	0.74%
Czech	10,000	6.86%
Danish	4,403	3.02%
British English	10,000	6.86%
Greek	555	0.38%

Table 1 Global Norm Sample Distribution by Assessment Language (continued)

Assessment Language	Sample N	Sample %
U.S. English	10,000	6.86%
Spanish	10,000	6.86%
Estonian	5	0.01%
French (Canadian)	6,376	4.37%
Finnish	1,610	1.10%
French (Parisian)	3,825	2.62%
Greek English	28	0.02%
German	5,604	3.84%
Hungarian	734	0.50%
Indian English	276	0.19%
Icelandic	2,545	1.75%
Italian	863	0.59%
Japanese	261	0.18%
Kenyan English	5,218	3.58%
Korean	7,063	4.84%
Macedonian	15	0.01%
Dutch	1,581	1.08%
Norwegian	6,155	4.22%
New Zealand English	10,000	6.86%
Polish	2,019	1.38%
Portuguese	1	0.01%
Romanian	2,274	1.56%
Russian	1,708	1.17%
Slovak	3,228	2.21%
Serbian	13	0.01%
Swedish	10,000	6.86%
Thai	2,254	1.55%
Turkish	9,347	6.41%
Traditional Chinese	1,850	1.27%
Simplified Chinese	2,744	1.88%
TOTAL	145,792	100.00%

Note. Sample N = number of cases in sample; Sample % = percentage of cases in sample.

3 – THE HOGAN GLOBAL NORM

HPI Norms. Table 2 displays the characteristics of the final sample with available HPI data sorted by gender, age, and assessment purpose. Tables 3 and 4 present normative results for primary and occupation HPI scales. Note, the calculation of norms for all HPI scales, with the exception of the Validity scale, are based on valid cases only (N = 144,877).

Table 2 Global HPI Normative Sample (N = 145,792)

Category		Sample N	Sample %
Gender			
	Male	76,528	52.5%
	Female	51,562	35.4%
	Not Reported	17,702	12.1%
Age			
	Under 30	41,597	28.5%
	30 – 39	40,973	28.1%
	40 – 49	27,889	19.1%
	50 +	10,722	7.4%
	Not Reported	24,611	16.9%
Application			
	Selection	53,439	36.7%
	Development	41,541	28.5%
	Not Reported	50,812	34.9%

Note. Sample N = number of cases in sample; Sample % = percentage of cases in sample.

Table 3 Global HPI Norms (N = 144,877) – Primary Scales

	HPI Scales						
Raw Score	ADJ Norm	AMB Norm	SOC Norm	INP Norm	PRU Norm	INQ Norm	LRN Norm
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
2	0	0	0	0	0	0	2
3	0	0	1	0	0	0	3
4	0	0	2	0	0	1	6
5	0	0	3	0	0	1	10
6	0	0	5	0	0	2	16
7	0	0	7	0	0	4	24
8	0	0	10	0	0	6	33
9	1	1	14	0	0	9	45
10	1	1	20	1	1	13	59
11	1	1	25	1	1	18	73
12	2	2	32	2	2	24	84
13	2	2	40	3	4	31	94
14	3	3	48	5	6	38	100
15	4	4	57	7	9	46	
16	5	5	65	11	14	55	
17	6	7	74	18	19	63	
18	7	9	81	29	26	71	
19	9	12	87	47	34	79	
20	11	15	92	69	43	85	
21	13	19	96	90	52	90	
22	16	23	98	100	62	94	
23	19	30	100		72	97	
24	23	37	100		80	99	
25	27	46			87	100	
26	32	58			93		
27	38	73			96		
28	44	88			98		
29	51	100			100		
30	58				100		
31	66				100		
32	74						
33	81						
34	89						
35	94						
36	98						
37	100						

Note. ADJ = Adjustment, AMB = Ambition, SOC = Sociability, INP = Interpersonal Sensitivity, PRU = Prudence, INQ = Inquisitive, LRN = Learning Approach.

Table 4 Global HPI Norms (N = 144,877) – Validity & Occupational Scales

	HPI Scales						
Raw	VAL	SERV	ST	REL	CLR	SALE	MNGR
Score	Norm	Norm	Norm	Norm	Norm	Norm	Norm
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	1	0	0	0
4	0	1	0	1	0	0	0
5	0	2	0	3	0	0	0
6	0	4	0	5	0	0	0
7	0	7	1	9	0	0	0
8	0	14	1	14	0	0	0
9	1	23	1	20	0	0	0
10	2	37	2	29	1	0	0
11	5	54	3	40	2	0	0
12	17	73	4	52	3	0	0
13	48	91	6	65	5	0	0
14	100	100	8	77	8	0	0
15			10	88	12	0	0
16			14	95	18	0	0
17			18	99	27	0	1
18			23	100	37	0	1
19			30		49	0	1
20			39		62	1	2
21			49		76	1	3
22			62		88	1	4
23			77		97	1	5
24			91		100	1	7
25			100			2	9
26						2	13
27						3	17
28						3	22
29						4	29
30						5	38
31						6	48
32						7	59
33						9	71
34						11	83
35						13	93
36						15	98
37						18	100

Table 4 Global HPI Norms (N = 144,877) – Validity & Occupational Scales (Continued)

	HPI Scales						
Raw	VAL	SERV	ST	REL	CLR	SALE	MNGR
Score	Norm	Norm	Norm	Norm	Norm	Norm	Norm
38						20	
39						24	
40						27	
41						31	
42						35	
43						40	
44						44	
45						49	
46						54	
47						59	
48						64	
49						69	
50						74	
51						78	
52						82	
53						86	
54						89	
55						92	
56						95	
57						96	
58						98	
59						99	
60						99	
61						100	
62						100	
63						100	
64						100	
65						100	
66						100	
67						100	

Note. VAL = Validity, SERV = Service Orientation, ST = Stress Tolerance, REL = Reliability, CLR = Clerical, SALE = Sales, MNGR = Manager; Validity norm is based on all cases (N = 145,792).

HDS Norms. Table 5 displays the characteristics of the final sample with available HDS data sorted by gender, age, and assessment purpose (N = 67, 614). Table 6 presents normative results for HDS scales.

Table 5 Global HDS Normative Sample (N = 67,614)

Category		Sample N	Sample %
Gender			
	Male	38,234	33.8%
	Female	22,861	56.5%
	Not Reported	6,519	9.6%
Age			
	Under 30	10,098	14.9%
	30 – 39	22,255	32.9%
	40 – 49	18,634	27.6%
	50 +	7,381	10.9%
	Not Reported	9,246	13.7%
Application			
	Selection	18,993	28.1%
	Development	26,615	39.4%
	Not Reported	22,006	32.5%

Note. Sample N = number of cases in sample; Sample % = percentage of cases in sample.

Table 6 Global HDS Norms (N = 67,614)

	HDS Scales										
Raw Score	EXC Norm	SKE Norm	CAU Norm	RES Norm	LEI Norm	BOL Norm	MIS Norm	COL Norm	IMA Norm	DIL Norm	DUT Norm
0	16	2	10	4	3	0	0	0	1	0	0
1	37	8	27	13	11	1	2	1	3	0	0
2	55	21	44	30	23	3	5	4	9	1	2
3	69	36	58	49	38	6	12	8	20	3	5
4	78	53	70	66	54	12	21	15	34	6	13
5	85	67	79	79	68	20	34	23	49	10	24
6	90	79	86	88	79	31	49	34	63	17	40
7	93	87	91	93	88	43	64	45	75	25	57
8	96	93	95	97	93	57	77	57	85	38	73
9	98	96	97	99	97	70	87	69	92	53	85
10	99	98	99	100	99	81	94	79	96	69	93
11	99	99	99	100	100	90	98	89	99	85	97
12	100	100	100	100	100	96	99	95	100	95	99
13	100	100	100	100	100	99	100	99	100	99	100
14	100	100	100	100	100	100	100	100	100	100	100

Note. EXC = Excitable, SKE = Skeptical, CAU = Cautious, RES = Reserved, LEI = Leisurely, BOL = Bold, MIS = Mischievous, COL = Colorful, IMA = Imaginative, DIL = Diligent, DUT = Dutiful.

MVPI Norms. Table 7 displays the characteristics of the final sample with available MVPI data sorted by gender, age, and assessment purpose (N = 48,267). Table 8 presents normative results for MVPI scales.

Table 7 Global MVPI Normative Sample (N = 48,267)

Category		Sample N	Sample %
Gender			
	Male	27,530	37.9%
	Female	18,289	57.0%
	Not Reported	2,448	5.1%
Age			
	Under 30	8,890	18.4%
	30 – 39	16,621	34.4%
	40 – 49	12,847	26.6%
	50 +	4,831	10.0%
	Not Reported	5,078	10.5%
Application			
	Selection	13,241	27.4%
	Development	21,815	45.2%
	Not Reported	13,211	27.4%

Note. Sample N = number of cases in sample; Sample % = percentage of cases in sample.

Table 8 Global MVPI Norms (N = 48,267)

	MVPI Scales									
Raw	AES	AFF	ALT	COM	HED	POW	REC	SCI	SEC	TRA
Score	Norm	Norm	Norm	Norm	Norm	Norm	Norm	Norm	Norm	Norm
0-19	-	-	-	-	-	-	-	-	-	-
20	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0
22	2	0	0	0	0	0	0	0	0	0
23	3	0	0	0	0	0	1	1	1	0
24	6	0	0	1	1	0	1	1	1	0
25	8	0	0	1	1	0	2	2	2	0
26	13	0	0	1	2	0	3	3	3	0
27	17	0	1	2	3	0	4	4	4	0
28	23	0	1	2	5	1	6	5	6	0
29	27	0	1	3	6	1	7	7	7	0
30	33	0	2	4	9	1	10	9	10	1
31	38	0	2	5	11	2	12	12	12	1
32	44	1	3	7	15	3	15	15	15	2
33	48	1	3	9	18	3	18	17	18	3
34	54	1	5	11	23	5	22	21	22	4
35	58	1	6	13	27	6	25	24	25	6
36	62	2	7	16	33	8	30	29	30	8
37	66	2	9	19	38	9	33	32	34	10
38	70	3	11	24	44	12	39	37	40	14
39	73	3	13	27	49	14	43	40	44	17
40	76	5	16	32	56	18	49	45	49	22
41	79	6	19	36	60	20	53	49	53	26
42	82	8	23	42	67	25	59	54	60	32
43	84	9	26	46	71	28	62	57	64	36
44	87	13	31	53	77	34	68	63	70	43
45	89	15	35	58	80	38	71	66	73	48
46	91	20	40	64	85	44	76	71	79	56
47	92	24	44	69	88	48	79	75	82	61
48	94	31	50	75	91	55	82	79	86	68
49	95	36	55	79	93	59	85	82	89	73
50	96	46	61	85	96	66	88	86	92	79
51	97	52	66	88	97	70	90	88	94	83
52	98	63	72	92	98	76	93	91	96	88
53	98	69	76	94	99	80	94	93	97	90
54	99	79	82	97	99	86	96	96	99	94
55	99	84	86	98	100	89	97	97	99	95
56	100	91	90	99	100	93	98	98	100	98
57	100	94	93	99	100	95	99	99	100	98
58	100	98	96	100	100	98	100	100	100	99
59	100	99	98	100	100	99	100	100	100	100
60	100	100	100	100	100	100	100	100	100	100

Note. AES = Aesthetics, AFF = Affiliation, ALT = Altruistic, COM = Commerce, HED = Hedonism, POW = Power, REC = Recognition, SCI = Science, SEC = Security, TRA = Tradition.

4 – USE AND APPLICATION OF THE GLOBAL NORM

Global Norms Application Guidelines. Hogan designed the Global Norm for applications in which a relevant single-language norm is not available or appropriate. These scenarios include situations in which single-language norms have yet to be developed, or where applicants are being evaluated and compared across languages and/or countries. For example, if a London based organization was hiring for a position located in the U.K., and comparing applicants from the U.K., the U.S., Brazil, China, France, and India, Hogan's Global Norm would be the most appropriate norm to use when evaluating all applicants, even though Hogan currently offers a U.K. norm. Similarly, an organization located in Indonesia, hiring from a pool of local applicants, would be best served by Hogan's Global Norm, as we do not currently offer a local Indonesian norm.

In contrast, the Global Norm should not be used in situations where a single-language norm is available and applicants are likely to come from a concentrated geographic area, being assessed in the same language.

Please contact your Hogan representative for additional information on the appropriate application of the Hogan Global Norm.

5 – ADDITIONAL RESOURCES

This document outlines the key considerations associated with the Hogan Global Norm. We have outlined Hogan's approach to norms, the development and composition of the Global Norm, and provided guidance concerning the appropriate use and application of the Global Norm.

For additional information about the assessments discussed in this document, please refer to our technical manuals. The HPI, HDS, and MVPI technical manuals are available on Hogan's website.

For additional information regarding Hogan's translation, equivalence, and norm development processes, please refer to "The Development and Technical Review of Translations for the HPI, HDS, and MVPI" (Hogan Assessment Systems, 2008), available on the Hogan Knowledge Base.

For specific information concerning the Hogan Global Norm, please contact your Hogan representative.

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