A META-REGRESSION OF HOFSTEDE'S SIX CULTURAL DIMENSIONS ON PERCEPTION OF SERVICE QUALITY IN THE HEALTHCARE SECTOR GLOBALLY

Talal Mohammed Alsaif
College of Business Administration, University of Ha'il , Hail, Kingdom of Saudi Arabia
talal.alsaif@gmail.com

ABSTRACT— *A meta-analysis was performed on 15 studies that measured the perception of the five SERVQUAL dimensions in the healthcare sector. The studies were conducted in eight countries using Parasuraman et al. (1988) 22-Item Service Scale or modified versions. The findings showed that significant heterogeneity existed in the true effect sizes of all five service quality dimensions of responsiveness, tangibles, reliability, empathy, and assurance. Meta-regressions were performed between the five service quality dimensions and Hofstede's six cultural dimensions with individualism and indulgence attributing to 29% and 43% of the real dispersion, respectively. Individualism showed an* R^2 *= 29% with ρ-values equal to 0.02 for both responsiveness and reliability while indulgence showed an* R^2 *= 43% with a ρ-value equal to 0.00 for tangibles. Hofstede's cultural dimensions of individualism and indulgence contributed to a significant proportion of the observed real variance between the 15 studies selected. Hofstede's other cultural dimensions of power, uncertainty avoidance, masculinity, and a long-term orientation, in combination with the service quality dimensions did not show significant proportions of the observed real variances. The findings promote the need for further research on how the changes in culture influence the perception of service quality in the healthcare sector.*

1. INTRODUCTION

Based on prior research recommendations, one can make an argument that cultural values impact the five service quality dimensions [1,2]. Research in the healthcare sector related to expectation and perception of service quality shows variations of the 22-item service quality instrument and dimensions first introduced by [3]. Parasuraman et al. [3], developed the five dimensions of service quality to measure expectations and perceptions experienced by consumers. The perception (P), minus the expectation (E) represents the gap score (G) or the gap service providers must focus on to raise the service quality offered [1].

Prior research utilized [3] 22-item service quality instrument across 30 industries at a minimum and as far back as 27 years. Research on the healthcare sector customized the instrument to account for the cultural background of customers receiving care [4, 5, 6, 7, 8, 9, 10, 11]. Unlike prior research, this study contains a meta-analysis and regression on 15 studies on the five service quality dimensions, [3] 22-Item Service quality instrument, and modified instruments. The purpose of this study was to examine the cultural impact on perceptions of service quality in eight countries. The underpinnings of [1, 12, 13, 14, 15] will form the basis on which the 15 studies are examined.

Given the use of different statistical methods in the 15 studies, to calculate the gap between perception and expectation of services in the healthcare industry, this study focused on the perception of service quality. Ascertainment of perception of service quality needs a functional process that refers to customer responses on services and the process of how services are received [1]. Ladhari [1], argues that if the goal of the quantitative assessment is to correct weaknesses in in-service delivery, then service quality measurement should occur after services are rendered to customers. Cultural factors are considered if the 22-Item Service Quality instrument is applied in a different context or changed [1].

This study provides another way of measuring service quality that carries out three aims. First, to conduct meta-analysis and regression to reset the service quality method for future studies [16]. Second, it addresses" ...the need to develop culturally specific measures of service quality" [1]. Prior research promotes the importance of service quality as dependant on the cultural and value orientations of customers [1]. Third, this study addresses [1] theoretical and empirical criticisms of the service quality scale identified in prior studies. Ladhari (2008) [1], criticisms of service quality addressed in this study.

1. Operationalization of the gap score (p.67).
2. Ambiguous interpretation of "expectations" (p.67).
3. The fundamental model underlying service quality was questioned (p.68).
4. Validity of service quality dimensions is questioned because of convergent validity [17].

Ladhari [1], makes two key points which in the crux of this research. First, [1] makes a distinction between technical and functional dimensions of service quality with functional dimensions focus on service delivery. The literature reviews of the 15 studies used are analyzed based on several items, sample sizes, analysis of the method, and reliability and validity. Second, [1] proposes that power distance and individualism apply to one or more constructs of service quality. This research looks at the relationships between service quality and Hofstede's cultural dimensions by the functional quality of service delivery processes in healthcare.

Before an examination of the service quality and Hofstede's cultural dimensions, there must first be evidence that variation in the true effect size exists across all 15 studies selected [18,16]. Variation or heterogeneity in the true effect size is part spurious, true variation, and random error [18]. The true variation reflects the real difference in the effect size across all 15 studies.

1.1 Research Questions

The 15 studies in this paper look at the perception of service quality after healthcare services are delivered. This translates into the show of evidence that heterogeneity in the true effect size exists and is significant among five dimensions of service quality [18,16]. Therefore, the first research questions are as follows:

1. Does evidence of heterogeneity exist in the true effect size among all five service quality dimensions?
2. If it exists, how significant is this heterogeneity?

If heterogeneity exists and is significant, then moderating effects of Hofstede's cultural dimensions on the real dispersion between the 15 studies becomes the aim.

3. How much of the dispersion between the 15 studies is real?

4. How much of the real dispersion is attributed to Hofstede's six cultural dimensions?

2. LITERATURE REVIEW

As previously mentioned, this paper focuses on the functional process of quality or the measure by which perception of service is delivered [1]. Consideration of cultural effects is based on the countries whereby studies originated. The variance between the 15 studies represents the summarised effect size of each service quality dimension. A meta-regression between the real part of this variance, and each Hofstede cultural dimension is the intent. The aim is to identify any significant explanation of the real variance attributed to one or more of Hofstede's cultural dimensions [18, 16, 1]. A systematic review of the 15 studies is needed as support for interpretations of meanings between service quality and Hofstede's cultural dimensions.

A thorough examination of likenesses between the 15 studies support [1] recommendation for futures studies of the perception of service quality effects on culture. Ladhari [1] recommendation represented the basis of inclusions of studies in this research. All 15 studies had to have hypothesized the difference or gap between expectation and perception service quality scores on a given sample size in the healthcare sector. This study did make exceptions to the inclusion criteria for two studies that followed the gap theme, however at a more granular level. Al-Neyadi et al., (2018) [4] and [8] segmented their sample sets by public and private healthcare providers. Out of the 15 studies included, only [2] assessed culture using Hofstede's cultural dimensions. The findings showed the power distance index (PDI) had the strongest cultural influence on service quality perceptions [2]. Polsa et al., [2], results showed power distance and individualism had positive effects on all five service dimensions.

The other selected studies focused on gaps between perception and expectation scores in customer satisfaction [19, 1, 20, 21, 22]. Overall, the results of the 15 studies were sporadic among the five service quality dimensions of tangibles, reliability, responsiveness, empathy, and assurance. This could be because of the various methods used to assess the perception of service quality [1]. These various methods caused convergent validity based on modifying [3] 22-item instrument [19, 1]. Convergent validity is when different indicators of theoretically similar or overlapping constructs are strongly related [17]. However, the issue of convergent validity among the five service quality dimensions in studies that used structural equation modeling (SEM) in combination with partial least square (PLS) or confirmatory factor analysis (CFA). In this research six out of 16 studies used one of these two combinations previously mentioned in their method. The other 8 studies utilized correlation with Descriptives Means, ANOVA, or Hierarchical Regression. Zarei et al., (2012) [11] was the remaining study that utilized exploratory factor analysis (EFA) in combination with the Wilcoxon Test. EFA in combination with the Wilcoxon Test was described by [23] as a "fishing expedition" and echoed by [24, 1, 25, 26]

As previously mentioned, Polsa et al., (2013) examined the relationship between Hofstede's cultural dimensions and the five dimensions of perceived service quality. The results showed that PDI and individualism or collectivism had a positive relationship with all five dimensions of service quality (β=0.25,τ=3.00,ρ<0.001). Furthermore, [2] concluded that, "Our study contributes to the health service quality literature by confirming that in a healthcare setting perceived service quality is dependent on power distance and individualism/collectivism" (p.66). However, on further study of the results, [2] identified that Chinese cultural dimensions were different from what was reported in [13] and attributed the difference to flawed sample size. Polsa *et al.*, [2], explained the difference in results as [13] included respondents from Singapore, Taiwan, and Hong Kong whereas their study respondents were from the People's Republic of China (p.66). In this study, the Hofstede dimension scores extracted by country, from an on-line computer program called Culture Compass™ [15].

The Culture Compass™ on-line program provides cultural guidance to professionals across all service industries. It helps professionals anticipate potential behavioral pitfalls while working with others. It also provides professionals with an understanding of the environment and people from different countries. The Culture Compass™ used in this study provides currents results from over 30,000 respondents worldwide on the six Hofstede cultural dimensions of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence.

3. METHODS

3.1 Hypotheses

Given the different methods of analysis among the 15 selected studies, and across eight countries, this study assumes that real variance or dispersion exists. Besides the existence of dispersion, this study infers that one or more of Hofstede's six dimensions explains part of that dispersion. Dispersion in this study represents the difference among effect size that is true and observed effects [18]. If in fact variations in observed effect sizes is true, then this shows heterogeneity. Based on the research questions, the following hypotheses are presented below.

The hypotheses related to the existence and significance of heterogeneity are:

H_0: $Q > df$

H_1: $Q \leqslant df$

A *Q-Statistic* greater the degrees of freedom (*df*) represent the existence of heterogeneity and the studies selected do not share a common effect size [18].

H_0: $I^2 > 0$

H_1: $I^2 = 0$

I^2 represents the ratio of true heterogeneity to the total observed variance that is true or real [30].

The hypotheses that answer how much-observed dispersion is real and attributed to Hofstede's six cultural dimensions are:

H_0: $b_0 + b1(HCD)country > 0$

H_1: $b_0 + b1(HCD)country = 0$

Whereby b_0 represents the model intercept, HCD = the Hofstede's cultural dimension scores, and the selected country where the study took place.

This study does not include a synthesis of the 15 articles. However, a search based on statistical methods such as

SEM and Means availability of the five service quality dimensions took place. No proxy variables for the service quality dimensions were used. For the effect size and dispersion calculations *correlation r, mean scores, and standard deviation (SD)* were used in most of the 15 articles selected.

All statistical procedures were performed in Meta-Essentials [27]. Meta-Essentials is a set of workbooks that simplify the integration and synthesis of effect sizes from different studies [28]. Meta-Essentials also provides figures, tables, and statistics on *correlations, means, and SDs*. Hofstede's cultural index scores by country were entered into Meta-Essentials—thus there was no need for corrections to the effect size for each study.

Meta-Essentials performed the calculations for true and observed heterogeneity, the dispersion between studies, meta-regression, and publication bias. For this meta-analysis study, publication bias shows the Rosenthal's and Fisher's Fail-Safe Ns. Van Rhee *et al.,[*28], identifies Rosenthal's and Fisher's Fail-Safe Ns based on the significance of the p-value and how many studies would it take to change the p-value. Similarly, the significance of the p-value is used for the cultural dimensions as a moderator variable to the five service quality dimensions to determine whether excess dispersion is zero [18,16].

The meta-regression is the last procedure conducted and it will be in accordance with [16] guidelines for moderators. Cooper[16], outlines testing one moderator at a time to reduce unreliability of homogeneity statistics and difficulty in interpretation of results. Borenstein *et al.,* [18] recommend that "...the use of meta-regression, especially with multiple covariates, is not a recommended option when the number of studies is small" (p. 188). The rule of thumb proposed for primary studies in ten subjects for each covariate—the same in meta-regression; ten studies minimum for each moderator [18,29].

3.2 Inclusion Criteria

Kwok, Winston C C and Sharp [23] compared EFA to a "fishing expedition" when used to examine service quality. Ladhari [1], echoed [23] comparison, but cites [5] and [9] as examples of research that used EFA as an alternative to measuring service quality. Both [5] and [9] used EFA as their analysis method. Given the criticism of EFA as an analysis method, [11] was an addition in this study because it fulfilled the inclusion requirements which were:

Research had to examine the five dimensions and instruments on perceived service quality.

The analysis produces a correlation (*r*) or Means (*M*) and standard deviation (*SD*) on the five service quality dimensions.

1. Research must be in healthcare.
2. Research must state the following elements:
3. A number of items in the instrument used.
4. Sample size
5. Analysis method
6. Reliability and validity measures

3.3 Statistical Methods

All statistical methods were performed with Meta-Essentials workbooks version 1.4 [27]. The Meta-Essentials workbooks performed the calculations that identified true and observed heterogeneity, the dispersion between studies, publication bias, ANOVA, and meta-regression. These calculations were performed on each service quality dimension separately. The meta-regression consisted of a bivariate, a single service quality dimension, and a cultural dimension which did not have any negative effect. Cooper (2010) [16], recommends this bivariate structure for conducting the meta-regression procedure (p. 193).

The Rosenthal's and Fisher's Fail-Safe N tests results show the impact of missing studies needed to make the ρ-value of the summarised effect size insignificant [30]. Orwin's Fail-Safe N test was not considered. The significance of the meta-regression results was the focal point of this study. As longs as the effect size was significant for the true and observed heterogeneity and the existence of dispersion between studies, the number of studies was considered enough [18].

The meta-regression in this study looked at the significance between each service quality and Hofstede's cultural dimension as a bivariate. There are two reasons for this approach. First, in following with [16] as previously mentioned, to prevent unreliability and difficulty in interpreting the heterogeneity statistical results. The second reason stems from the rule of thumb in treating covariates in multiple regression procedures. The rule of thumb for the number of observations for each independent variable is 15 to 1 in multiple regression analysis [31] Since there is no rule of thumb in meta-regression related to the number of studies for each covariate, the multiple regression standard apply [18, 30, 29].

4. RESULTS

4.1 Meta-Analysis

The overall results showed the indulgence and individualism had significant relationships with all five service quality dimensions of responsiveness, tangibility, empathy, reliability, and assurance. Table 1 shows the meta-analysis results that answer the question of whether heterogeneity exists and is significant across all five service quality dimensions. Table 1 shows that *Q statistic* values for all five service quality dimensions are greater than their respective degrees of freedom (*df*) with *ρ-values* 0.000. With the *Q statistics* greater than the df for each dimension this answers research questions 1 and 2 which shows that heterogeneity exists in the true effect sizes and they are significant.

Before discussing how much of the dispersion between studies selected is real, Figures 1 thru 5 show forest plots of responsiveness, tangibility, empathy, reliability, and assurance. The forest plots look similar in terms of the patterns formed which is based on effect sizes for each study ranked from largest to smallest. However, the summarized effect sizes are different among the five dimensions, but the variation between the studies is clearly visible. In Table 1 the tau squared (T^2) reflects that variation exists between the studies. Since the *Q statistic* is greater than df as previously mentioned null hypothesis 2 is rejected. Furthermore, this translates into a positive T^2 and further denotes variance between the studies that is true or real.

Given a T^2 that shows the real variance between the studies, research question 3 now becomes the focal point. Research question 3 is a modified question that originated from [18]. What proportion of the observed variance reflects real differences in the summarized effect size of the studies selected? The proportion of observed variance that is real is shown in I^2 column of Table 1, thus null hypothesis #4 is rejected. All five service quality dimensions have a

significant proportion of observed variance that is real whereby I^2 equals 98.95%, 98.99%, 98.98%, 99.16%, and 99.07% for responsiveness, tangibles, reliability, empathy, and assurance, respectively. However, empathy reflects the most dispersion across a wider range with its T^2 equal .30 with assurance showing a wider range, but a lower proportion of observed real variance. The T^2 shows the absolute value of true variance while I^2 reflects the proportion of observed variance that is true.

4.2 ANOVA and Meta-regression

Since both null hypotheses 2 and 4 were rejected, this leaves open the remaining question of what proportion of observed real variance can be explained by Hofstede's cultural dimensions. Tables 2 thru 6 show ANOVA across all five service quality dimensions on each of Hofstede's cultural dimensions. Individualism and indulgence show significance on each service quality dimension with Table 4 or the ANOVA between reliability and indulgence highest. However, indulgence accounts for 43% of the observed variance that is real as a moderating variable on tangibles—which is the highest R^2 shown in Table 8. As for individualism, Table 5 shows the ANOVA between empathy and individualism highest. Individualism shows an R^2 = 29% with *ρ-values* equal to 0.02 for both responsiveness and reliability in Tables 7 and 9. Therefore with individualism and indulgence explaining significant proportions of the observed variance that is real across all five service quality dimensions, null hypothesis 6 is rejected.

5. CONCLUSION

Across all 15 studies, a central theme was established in terms of measuring the levels of rendered services in the healthcare sector. With the exception of [2], none of the 14 remaining studies hypothesized the service quality dimensions against Hofstede's cultural dimensions. Polsa et al. [2], results were different than the results in this study with regards to the cultural dimension of power distance having a positive relationship with the service quality dimensions—not individualism or indulgence. The difference in findings between [2] and this study does not weaken the basic premise for the use of meta-analysis and regression in this study. Three key points support the use of meta-analysis and regression in this study. First as previously mentioned, there was an established central theme that bound all 15 studies together—the measure of the perception of service quality levels rendered in the healthcare sector. Second, the existence of variability between studies and contradictory findings among the 15 studies. Contradictory findings suggest the researcher uses meta-analysis and regression to estimate the amount of variance attributed to sampling error and other observed variations based on the results in the studies [16]. Finally, [1] suggests that aspects of the relationship between culture and the perception of service quality be explored.

The findings in this study contribute to the existence of a relationship between culture and perceptions of service quality with regards to healthcare. The findings were based on studies from eight countries that used [3] 22-item scale or a modified version. Given eight countries, with wide variations in terms of Hofstede's Culture Compass™ online program scale, and variance between the 15 studies selected, relationships of significance existed. However, to achieve a stronger impact between Hofstede's cultural dimensions and the perception of service quality dimensions, there are key suggestions that require adherence.

First, future research should focus on both the perception of service quality results as it pertains to the influence of the cultural dimensions and the 22-item scale questions. The studies selected in this meta-analysis and regression focused on the results that compared expectation and perception or the factor loadings on each question within the 22-item scale. Second, findings should be presented for each service quality and cultural dimension—not on each item or question on the instrument. Third, the standard deviation (*SD*) should be reported along with the mean scores.

This study showed evidence that Hofstede's cultural dimensions of indulgence and individualism contributed to a significant proportion of the observed real variance between the 15 studies selected. The evidence promotes the need for further research to show how the changes in culture influence the perception of service quality in the healthcare sector. This study was done on a global level using published results of eight countries which amounted to 15 studies. Future research need not conduct another meta-analysis and regression to examine the relationship between culture and the perception of service quality to know a significant relationship exist.

APPENDIX

TABLE 1. META-ANALYSIS OF THE FIVE SERVICE QUALITY DIMENSIONS ON THE 15 STUDIES

Subgroups	Studies in the subgroup (k)	Fixed Effects	Random Effects	*LL*	*UL*	CES (z)	*p*	*df*	*Q*	*p*	*T*	T^2	I^2
Responsiveness	15	0.14	0.44	0.18	0.65	0.48	0.000	14	1330.36	0.000	0.49	0.24	98.95%
Tangibles	15	0.14	0.46	0.21	0.66	0.50	0.000	14	1392.25	0.000	0.50	0.25	98.99%
Reliability	15	0.14	0.41	0.13	0.63	0.44	0.000	14	1366.11	0.000	0.49	0.24	98.98%
Empathy	15	0.16	0.47	0.17	0.69	0.52	0.000	14	1670.03	0.000	0.54	0.30	99.16%
Assurance	14	0.18	0.52	0.19	0.74	0.58	0.000	13	1405.25	0.000	0.58	0.34	99.07%

FIGURE 1. RESPONSIVENESS FOREST TREE PLOT OF THE 15 STUDIES

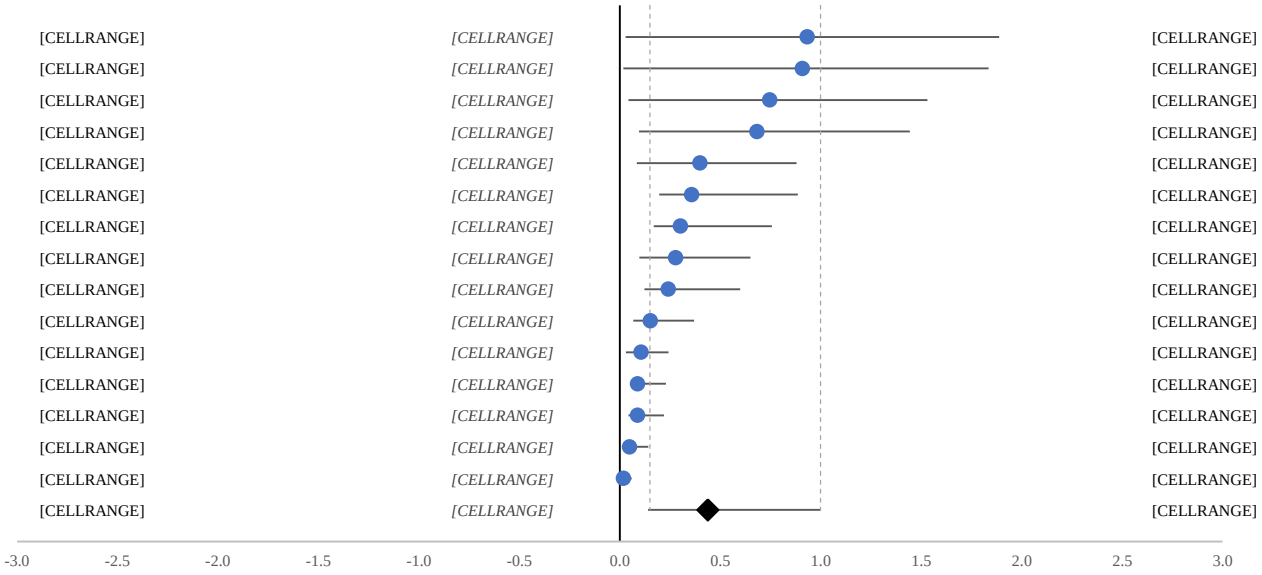

FIGURE 1. TANGIBLES FOREST TREE PLOT OF THE 15 STUDIES

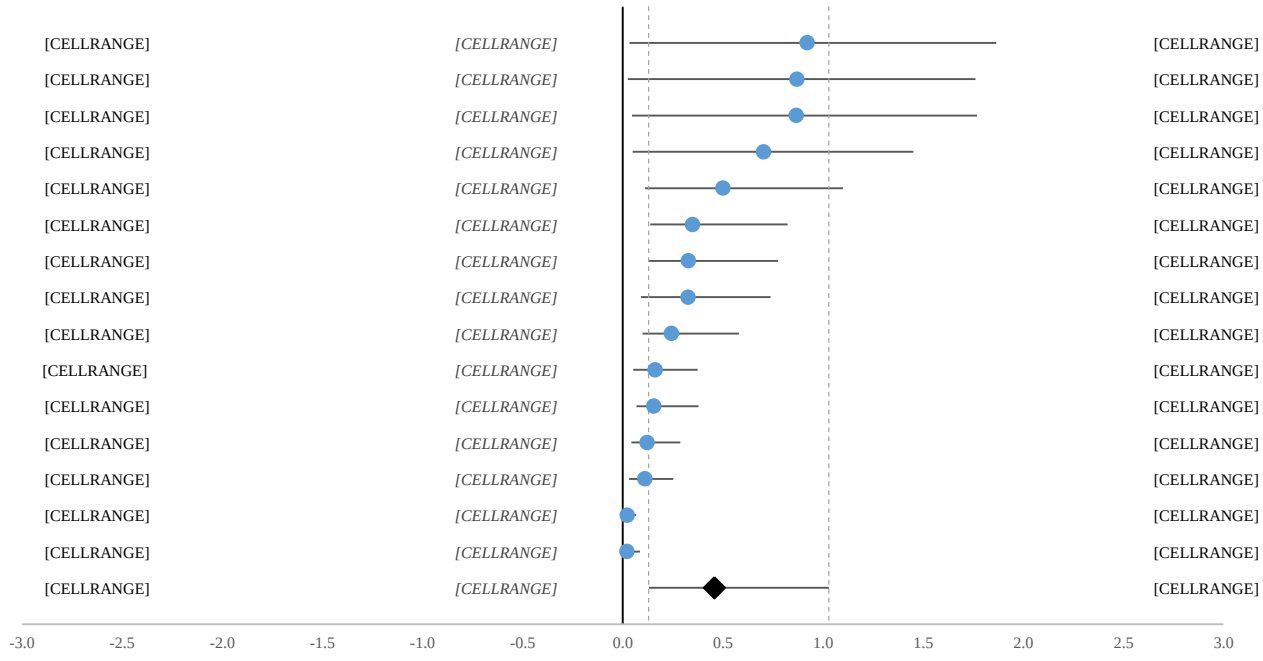

FIGURE 2. RELIABILITY FOREST TREE PLOT OF THE 15 STUDIES

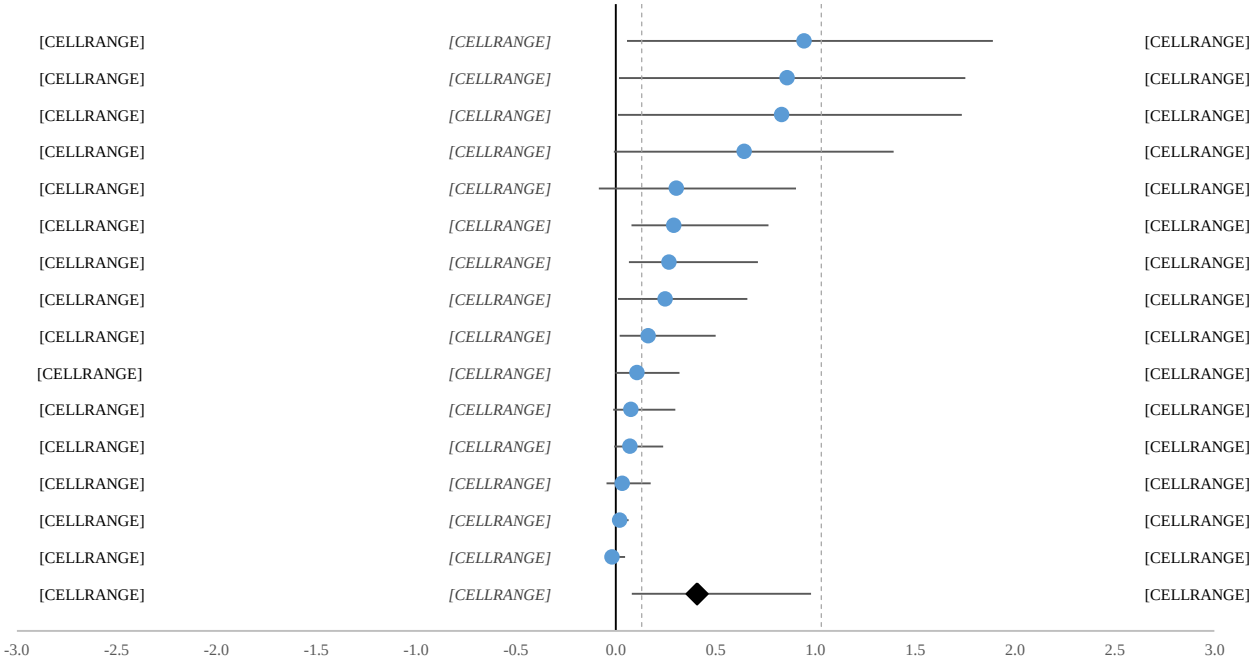

FIGURE 3. EMPATHY FOREST TREE PLOT OF THE 15 STUDIES

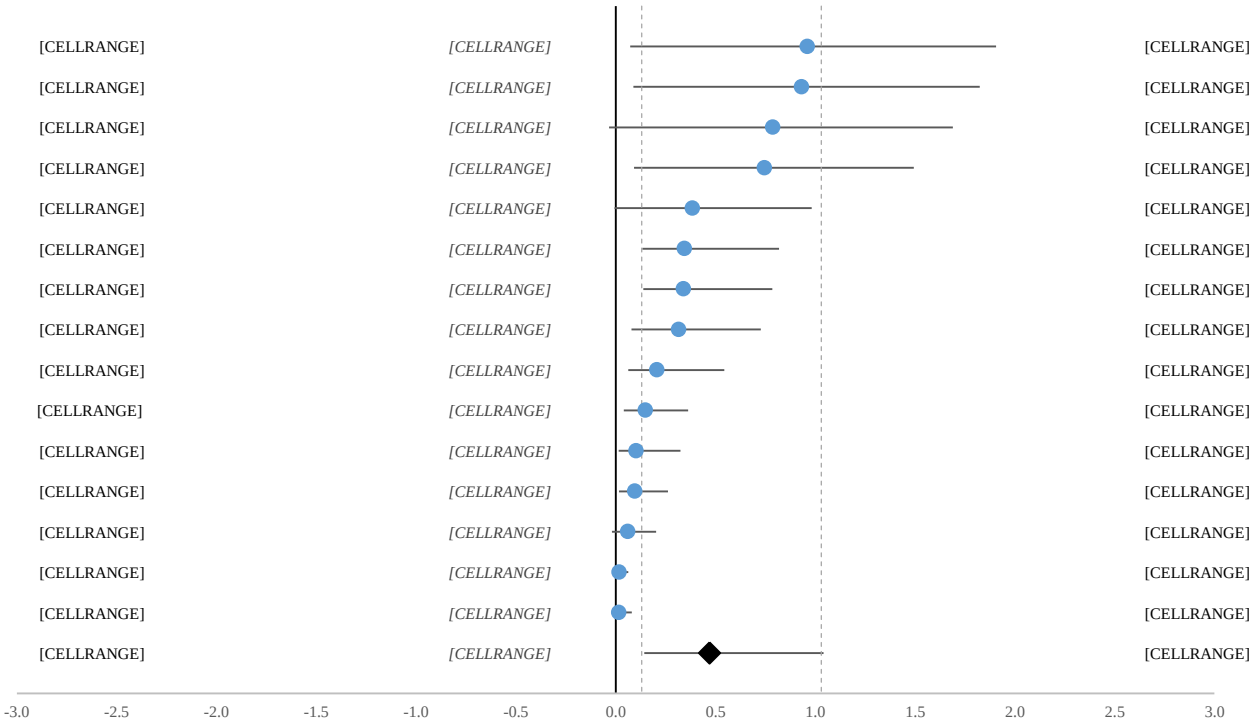

FIGURE 4. ASSURANCE FOREST TREE PLOT OF THE 15 STUDIES

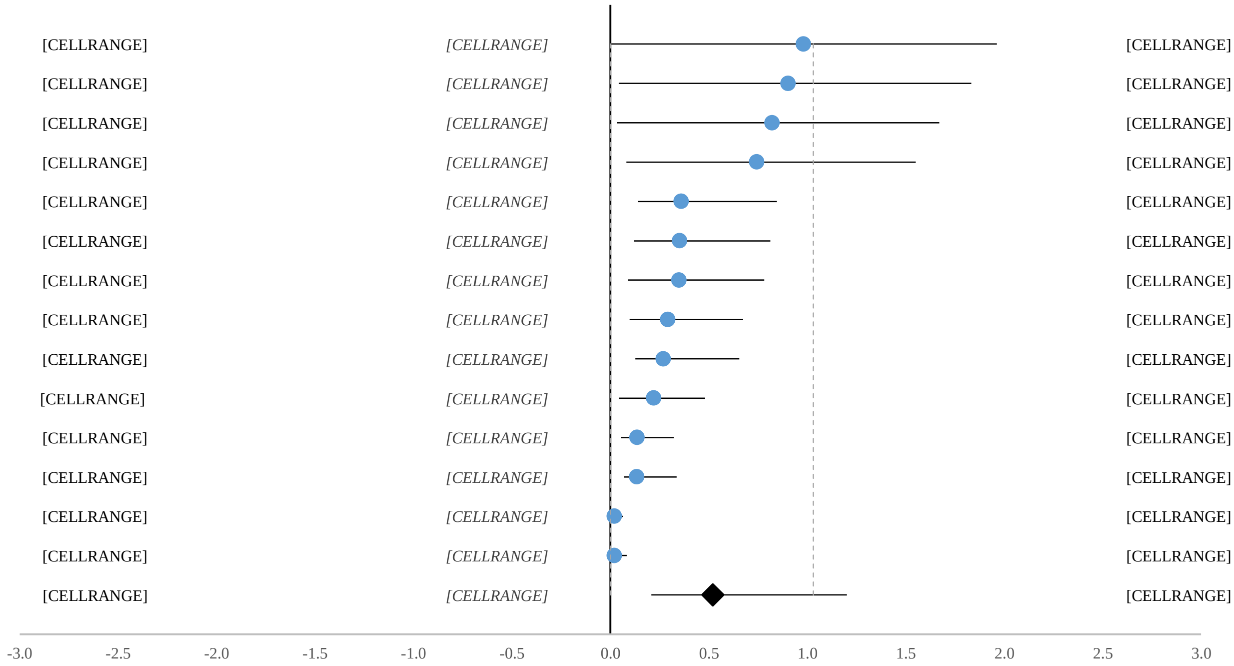

TABLE 2 FIXED-EFFECT MODEL - ANOVA FOR RESPONSIVENESS

Responsiveness	Sum of squares (Q*)	*df*	*p*	*MS*	*F*	*p*
Power	1.44	1	0.23	1.44	1.30	0.28
Residual	14.49	13	0.34	1.11		
Total	15.93	14	0.32			
Individualsm	5.40	1	0.02*	5.40	5.22	0.04*
Residual	13.45	13	0.41	1.03		
Total	18.85	14	0.17			
Masculinity	0.22	1	0.64	0.22	0.19	0.67
Residual	15.11	13	0.30	1.16		
Total	15.33	14	0.36			
Uncertainty Avoidance	0.09	1	0.77	0.09	0.08	0.78
Residual	13.96	13	0.38	1.07		
Total	14.05	14	0.45			
Long Term Orientation	1.38	1	0.24	1.38	1.00	0.24
Residual	14.48	13	0.34	14.48		
Total	15.86	14	0.32			
Indulgence	9.86	1	0.002**	9.86	9.54	0.01**
Residual	13.44	13	0.41	1.03	0.00	
Total	23.30	14	0.06			

**p* <.05 and ***p* <.001

TABLE 3 FIXED-EFFECT MODEL - ANOVA FOR TANGIBLES

Tangibles	Sum of squares (Q*)	*df*	*p*	*MS*	*F*	*p*
Power	0.41	1	0.52	0.41	0.36	0.56
Residual	14.94	13	0.31	1.15		
Total	15.35	14	0.35			
Individualsm	4.59	1	0.03 *	4.59	4.85	0.05*
Residual	12.30	13	0.50	0.95		
Total	16.90	14	0.26			
Masculinity	0.10	1	0.75	0.10	0.09	0.77
Residual	14.89	13	0.31	1.15		
Total	14.99	14	0.38			
Uncertainty Avoidance	0.61	1	0.43	0.61	0.55	0.47
Residual	14.58	13	0.33	1.12		
Total	15.19	14	0.37			
Long Term Orientation	0.98	1	0.32	0.98	0.85	0.37
Residual	14.96	13	0.31	1.15		
Total	15.94	14	0.32			
Indulgence	13.01	1	0.00**	13.01	9.88	0.01**
Residual	17.12	13	0.19	1.32		
Total	30.13	14	0.01			

**p* <.05 and ***p* <.001

TABLE 4. FIXED-EFFECT MODEL - ANOVA FOR ASSURANCE

Assurance	Sum of squares (Q*)	*df*	*p*	*MS*	*F*	*p*
Power	1.66	1	0.20	1.66	1.20	0.29
Residual	16.59	12	0.17	1.38		
Total	18.25	13	0.15			
Individualsm	4.40	1	0.04 *	4.40	2.62	0.13
Residual	20.17	12	0.06	1.68		
Total	24.57	13	0.03			
Masculinity	1.55	1	0.21	1.55	1.37	0.26
Residual	13.58	12	0.33	1.13		
Total	15.14	13	0.30			
Uncertainty Avoidance	0.03	1	0.87	0.03	0.02	0.88
Residual	14.57	12	0.27	1.21		
Total	14.60	13	0.33			
Long Term Orientation	1.67	1	0.20	1.67	1.13	0.31
Residual	17.64	12	0.13	1.47		
Total	19.31	13	0.11			
Indulgence	12.29	1	0.00 **	12.29	7.26	0.02*
Residual	20.30	12	0.06	1.69	0.00	
Total	32.59	13	0.00			

*p <.05 and **p<.001

TABLE 5. FIXED-EFFECT MODEL -REGRESSION REULTS FOR RESPONSIVNESS

Subgroup	Models	B	SE	95% LL	95% UL	β	Z	p	Combined effect size	T^2	R^2
Responsiveness	Individualism	0.01	0.00	0.00	0.02	0.54	2.32	0.02	0.48	0.21	0.29 *
	Intercept	0.10	0.20	-0.34	0.53	0.00	0.48	0.63			
	Power	-0.01	0.01	-0.02	0.01	-0.30	-1.20	0.23	0.48	0.25	0.09
	Intercept	1.07	0.51	-0.03	2.18	0.00	2.09	0.04			
	Uncertainty Avoidance	0.00	0.01	-0.02	0.02	-0.08	-0.30	0.77	0.48	0.28	0.006
	Intercept	0.61	0.47	-0.40	1.63	0.00	1.29	0.20			
	Indulgence	0.01	0.00	0.00	0.02	0.65	3.14	0.00	0.48	0.17	0.42 **
	Intercept	0.09	0.16	-0.25	0.44	0.00	0.58	0.56			
	Masculinity	-0.01	0.01	-0.04	0.02	-0.12	-0.46	0.64	0.48	0.26	0.014
	Intercept	0.84	0.79	-0.85	2.53	0.00	1.06	0.29			
	Long Term Orientation	-0.01	0.00	-0.02	0.00	-0.30	-1.18	0.24	0.48	0.25	0.09
	Intercept	0.69	0.22	0.21	1.17	0.00	3.08	0.00			

**p <.05 and **p<.001*

TABLE 6. FIXED-EFFECT MODEL -REGRESSION REULTS FOR TANGIBLES

Subgroup	Models	B	SE	95% LL	95% UL	β	Z	p	Combined effect size	T^2	R^2
Tangibles	Individualism	0.01	0.00	0.00	0.02	0.52	2.14	0.03	0.50	0.22	0.27 *
	Intercept	0.14	0.21	-0.31	0.59	0.00	0.67	0.50			
	Power	0.00	0.01	-0.02	0.01	-0.16	-0.64	0.52	0.50	0.24	0.03
	Intercept	0.83	0.53	-0.30	1.97	0.00	1.57	0.12			
	Uncertainty Avoidance	-0.01	0.01	-0.02	0.01	-0.20	-0.78	0.43	0.50	0.25	0.04
	Intercept	0.84	0.45	-0.12	1.79	0.00	1.88	0.06			
	Indulgence	0.01	0.00	0.01	0.02	0.66	3.61	0.00	0.50	0.12	0.43 **
	Intercept	0.13	0.14	-0.17	0.42	0.00	0.90	0.37			
	Masculinity	0.00	0.01	-0.04	0.03	-0.08	-0.32	0.75	0.50	0.25	0.01
	Intercept	0.75	0.78	-0.93	2.43	0.00	0.96	0.34			
	Long Term Orientation	0.00	0.00	-0.01	0.01	-0.25	-0.99	0.32	0.50	0.24	0.06
	Intercept	0.68	0.22	0.21	1.15	0.00	3.10	0.00			

**p <.05 and **p<.001*

Subgroup	Models	B	SE	95% LL	95% UL	β	Z	p	Combined effect size	T^2	R^2
Reliability	Individualism	0.01	0.00	0.00	0.02	0.53	2.33	0.02	0.44	0.22	0.29 *
	Intercept	0.05	0.21	-0.40	0.49	0.00	0.23	0.82			
	Power	-0.01	0.01	-0.02	0.01	-0.19	-0.77	0.44	0.44	0.25	0.04
	Intercept	0.83	0.52	-0.28	1.94	0.00	1.60	0.11			
	Uncertainty Avoidance	-0.01	0.01	-0.02	0.01	-0.18	-0.71	0.48	0.44	0.27	0.03
	Intercept	0.75	0.46	-0.24	1.75	0.00	1.63	0.10			
	Indulgence	0.01	0.00	0.01	0.02	0.64	3.71	0.00	0.44	0.12	0.42 **
	Intercept	0.05	0.14	-0.25	0.35	0.00	0.35	0.73			
	Masculinity	0.00	0.01	-0.04	0.03	-0.08	-0.32	0.75	0.50	0.25	0.01
	Intercept	0.75	0.78	-0.93	2.43	0.00	0.96	0.34			
	Long Term Orientation	0.00	0.00	-0.01	0.01	-0.24	-1.04	0.30	0.44	0.23	0.06
	Intercept	0.62	0.22	0.16	1.09	0.00	2.87	0.00			

**p <.05 and **p<.001*

TABLE 7. FIXED-EFFECT MODEL -REGRESSION REULTS FOR RELIABILITY

TABLE 8. FIXED-EFFECT MODEL -REGRESSION REULTS FOR EMPATHY

Subgroup	Models	B	SE	95% LL	95% UL	β	Z	p	Combined effect size	T^2	R^2
Empathy	Individualism	0.01	0.00	0.00	0.02	0.49	2.75	0.01	0.51	0.16	0.24 **
	Intercept	0.12	0.18	-0.26	0.50	0.00	0.67	0.50			
	Power	-0.01	0.01	-0.03	0.01	-0.27	-1.15	0.25	0.52	0.28	0.07
	Intercept	1.12	0.54	-0.04	2.29	0.00	2.06	0.04			
	Uncertainty Avoidance	0.00	0.01	-0.02	0.02	-0.07	-0.27	0.78	0.52	0.36	0.01
	Intercept	0.66	0.54	-0.50	1.82	0.00	1.22	0.22			
	Indulgence	0.01	0.00	0.01	0.02	0.63	3.38	0.00	0.51	0.18	0.40 **
	Intercept	0.09	0.17	-0.27	0.45	0.00	0.53	0.59			
	Masculinity	-0.01	0.02	-0.05	0.03	-0.19	-0.71	0.48	0.52	0.37	0.04
	Intercept	1.18	0.95	-0.86	3.21	0.00	1.24	0.21			
	Long Term Orientation	-0.01	0.01	-0.02	0.01	-0.28	-1.15	0.25	0.52	0.31	0.08
	Intercept	0.75	0.25	0.21	1.29	0.00	2.99	0.00			

**p <.05 and **p<.001*

TABLE 9. FIXED-EFFECT MODEL -REGRESSION REULTS FOR ASSURANCE

Subgroup	Models	B	SE	95% LL	95% UL	β	Z	p	Combined effect size	T^2	R^2
Assurance	Individualism	0.01	0.00	0.00	0.02	0.42	2.10	0.04	0.58	0.23	0.18 **
	Intercept	0.22	0.21	-0.23	0.68	0.00	1.06	0.29			
	Power	-0.01	0.01	-0.03	0.01	-0.30	-1.29	0.20	0.58	0.31	0.09
	Intercept	1.31	0.59	0.04	2.57	0.00	2.23	0.03			
	Uncertainty Avoidance	0.00	0.01	-0.02	0.02	-0.04	-0.16	0.87	0.58	0.38	0.00
	Intercept	0.67	0.55	-0.53	1.86	0.00	1.20	0.23			
	Indulgence	0.01	0.00	0.01	0.02	0.61	3.51	0.00	0.58	0.17	0.38 **
	Intercept	0.16	0.16	-0.20	0.51	0.00	0.95	0.34			
	Masculinity	-0.02	0.02	-0.06	0.02	-0.32	-1.25	0.21	0.58	0.37	0.10
	Intercept	1.81	1.00	-0.35	3.97	0.00	1.81	0.07			
	Long Term Orientation	-0.01	0.01	-0.02	0.00	-0.29	-1.29	0.20	0.58	0.29	0.09
	Intercept	0.85	0.26	0.30	1.41	0.00	3.31	0.00			

**p <.05 and **p<.001*

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