

Analysis Report

This report is structured as follows.

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SAMPLE REPORT - Rafael Data Analysis Portfolio

Reliability Analysis

The first step of the analysis was to test each scale for reliability using Cronbach's Alpha. Aspects of Career Progression had an initially unacceptable level of reliability ($\alpha = 0.390$). An inspection of Item-to-Total correlations revealed that two items had very low correlations to the total scale. They were: "Do you agree with the following statement: My workplace/ work placement is characterised as an inclusive environment where everyone can reach their full potential" ($r = -0.149$) and "Do you agree with the following statement: I feel like there are not enough people who have a similar identity or background to me as role models in the senior positions in my organisation/ workplace" ($r = 0.061$). With these items dropped from the total scale, the reliability increased to 0.600, which can be considered acceptable, although not ideal (> 0.700).

Inclusivity, on the other hand, showed a very good reliability ($\alpha = 0.854$). Nevertheless, one item showed very poor correlations to the total scale ($r = 0.035$) and was dropped to further refine the scale: "Do you agree with the following statement: I think seeing people who have a similar identity or background to me in senior positions would boost my self-confidence to progress upward". The final Alpha was very good at 0.876. The table below shows the mean scores, standard deviations and sample sizes of each individual item of each scale, along with the scales' Alphas.

Item Statistics

	Mean	SD	N	α
Career Progression				
Do you agree with the following statement: I am satisfied with how my career has progressed to date. (select one)	3.309	1.366	110	0.600
Do you agree with the following statement: I consider my current position as a stepping stone to my next career move. (select one)	3.991	1.071	110	
Do you agree with the following statement: I have been supported by senior managers and colleagues to progress my career. (select one)	3.282	1.257	110	
Do you agree with following statement: In order to progress my career, it is necessary for me to leave my current organisation. (select one)	2.409	1.214	110	
Inclusivity				
Do you agree with the following statement: I would recommend my institution to s as a place to work. (select one)	3.452	1.105	104	0.876
Do you agree with the following statement: The composition of my leadership workplace reflects the local population. (select one)	2.846	1.506	104	
Do you agree with the following statement: I am confident that this protocol/intervention will work and that my complaint will be taken seriously, acted on and dealt with satisfactorily. (select one)	3.019	1.140	104	
Do you agree with the following statement: I feel valued and appreciated for my work within my organisation. (select one)	3.337	1.267	104	
Do you agree with the following statement: In my experience, people from different backgrounds are readily accepted and made to feel welcome at my organisation. (select one)	3.567	1.095	104	

Do you agree with the following statement: My organisation consistently has racially diverse panels during interviews. (select one)	3.058	1.221	104
Do you agree with the following statement: My workplace leadership clearly communicates the importance of achieving racial equity. (select one)	3.279	1.194	104
Do you agree with the following statement: My workplace/ work placement provides the resources necessary for achieving racial equity	3.087	1.062	104
Do you agree with the following statement: The interview process in my institution gives every candidate the best opportunity to share their skills and potential. (select one)	3.481	1.207	104
To what extent do you believe managers in your department take equity and diversity issues seriously? (select one)	4.317	1.697	104

Normality Test

The next step of the analysis was to calculate the total score of each scale, by averaging their corresponding items. The distribution of these resulting scales was tested using Shapiro Wilk's tests, which showed both scales followed normal distributions ($p > .05$). This enables the results of statistical comparisons using analysis of variance (ANOVA) possible and appropriate without further interventions in the data.

Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Carrer Progression	0.981	118	0.092
Inclusivity	0.988	118	0.400

Descriptive Statistics

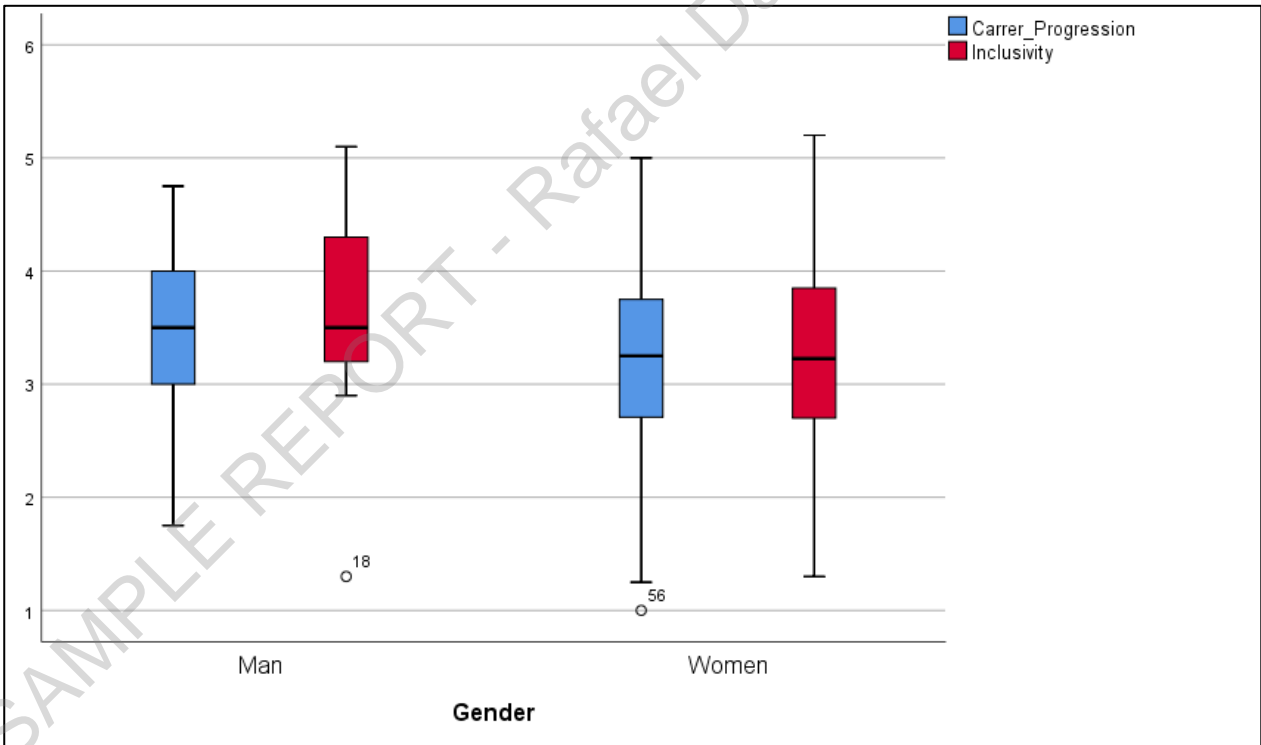
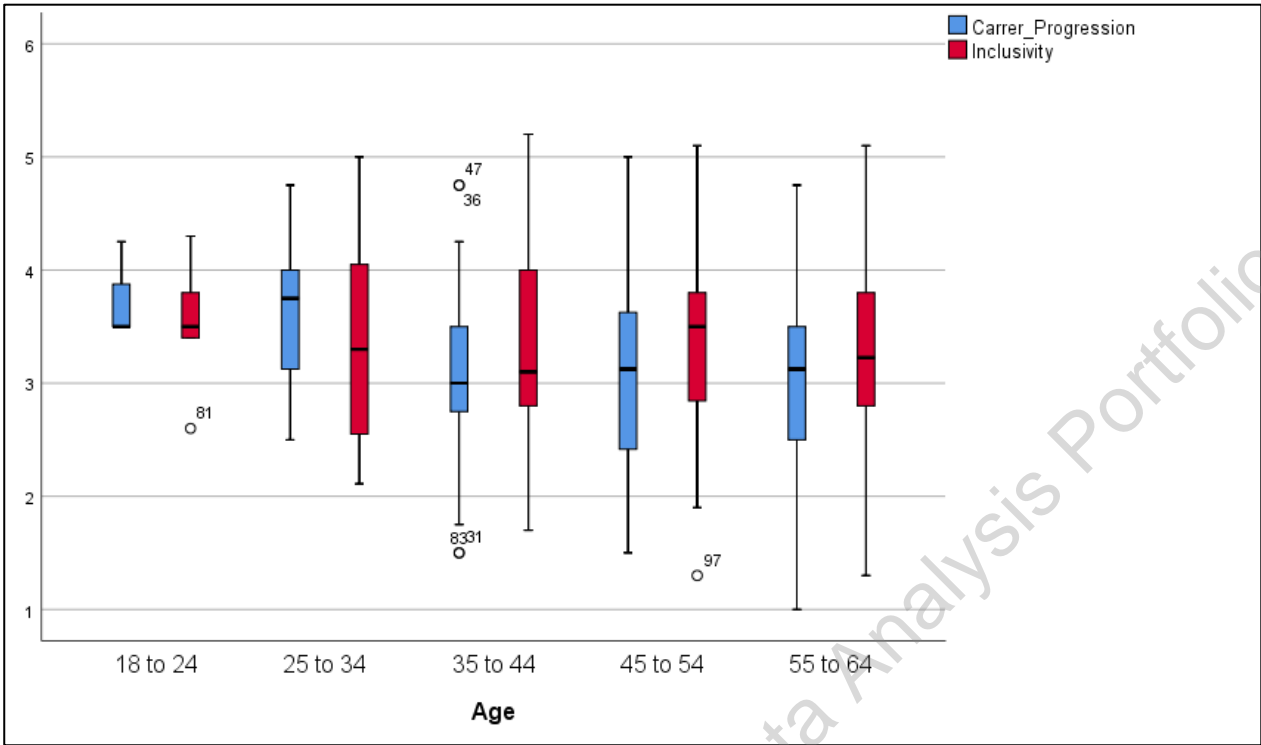
After the refinement and construction of the scales, means and standard deviations for all individual items and the total scales were calculated both overall and disaggregated by gender, ethnicity and age groups (tables below). In these tables, not only the items that were used to calculate the total scales (career progression and inclusivity) are shown, but also those that were not.

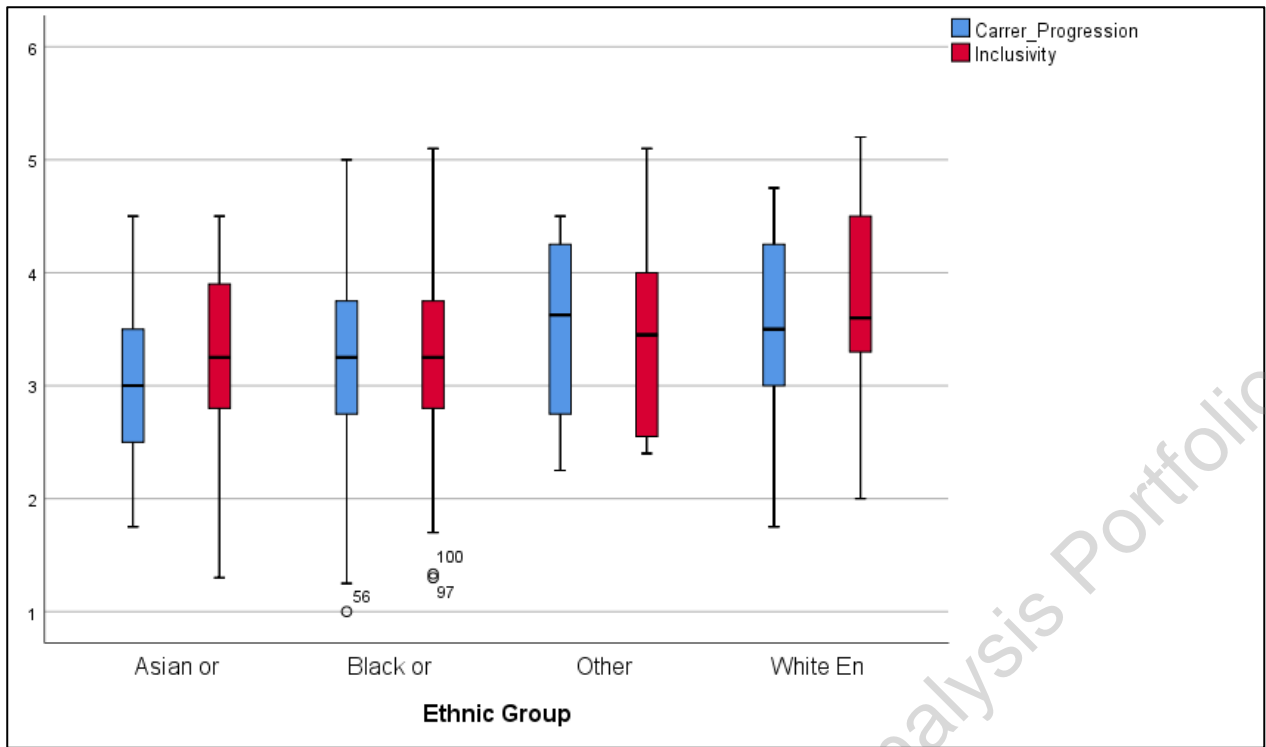
	Overall		Age									
			18 to 24		25 to 34		35 to 44		45 to 54		55 to 64	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Do you agree with the following statement: I am satisfied with how my career has progressed to date. (select one)	3.267	1.373	4.143	0.690	3.842	1.302	3.333	1.282	2.963	1.427	2.714	1.454
Do you agree with the following statement: I consider my current position as a stepping stone to my next career move. (select one)	3.948	1.107	4.143	0.900	4.316	0.885	4.073	0.985	3.821	1.090	3.450	1.468
Do you agree with the following statement: I have been supported by senior managers and colleagues to progress my career. (select one)	3.231	1.302	3.429	0.787	3.789	1.032	3.098	1.375	3.143	1.380	3.045	1.362
Do you agree with the following statement: My workplace/ work placement is characterised as an inclusive environment where everyone can reach their full potential. (select one)	2.500	1.068	3.143	0.900	2.526	0.772	2.429	1.151	2.464	1.138	2.455	1.101
Do you agree with following statement: In order to progress my career, it is necessary for me to leave my current organisation. (select one)	2.439	1.220	3.143	1.574	2.444	1.199	2.073	1.149	2.679	1.188	2.600	1.188
Do you agree with the following statement: I feel like there are not enough people who have a similar identity or background to me as role models in the senior positions in my organisation/ workplace. (select one)	2.336	1.438	2.286	1.113	2.368	1.342	2.341	1.559	2.464	1.453	2.143	1.459
Carrer Progression	3.214	0.876	3.714	0.304	3.627	0.726	3.143	0.777	3.146	0.984	2.920	1.014
Do you agree with the following statement: I would recommend my institution to s as a place to work. (select one)	3.398	1.141	3.714	0.488	3.316	1.455	3.190	1.174	3.750	0.799	3.318	1.249
Do you agree with the following statement: The composition of my leadership workplace reflects the local population. (select one)	2.823	1.483	3.143	1.069	3.333	1.328	2.725	1.633	2.593	1.421	2.762	1.513
Do you agree with the following statement: I am confident that this protocol/intervention will work and that my complaint will be taken seriously, acted on and dealt with satisfactorily. (select one)	2.966	1.154	3.143	0.900	3.053	1.026	2.738	1.326	3.179	0.863	3.000	1.309
Do you agree with the following statement: I feel valued and appreciated for my work within my organisation. (select one)	3.308	1.283	4.143	0.690	3.316	1.376	3.049	1.359	3.536	1.105	3.227	1.343
Do you agree with the following statement: I think seeing people who have a similar identity or background to me in senior positions would boost my self-confidence to progress upward. (select one)	4.430	0.882	4.333	1.633	4.500	0.618	4.634	0.698	4.393	0.832	4.048	1.117
Do you agree with the following statement: In my experience, people from different backgrounds are readily accepted and made to feel welcome at my organisation. (select one)	3.542	1.099	3.714	0.756	3.947	0.848	3.238	1.185	3.893	0.875	3.273	1.279
Do you agree with the following statement: My organisation consistently has racially diverse panels during interviews. (select one)	3.027	1.252	2.714	0.951	3.000	1.283	2.974	1.347	2.960	1.207	3.333	1.238
Do you agree with the following statement: My workplace leadership clearly communicates the importance of achieving racial equity. (select one)	3.235	1.216	3.286	1.254	3.105	1.370	3.450	1.218	3.185	1.241	3.000	1.069
Do you agree with the following statement: My workplace/ work placement provides the resources necessary for achieving racial equity	3.088	1.044	3.000	0.577	3.053	1.268	3.125	1.067	3.179	0.983	2.950	1.050
Do you agree with the following statement: The interview process in my institution gives every candidate the best opportunity to share their skills and potential. (select one)	3.448	1.211	3.429	0.976	3.667	1.138	3.463	1.142	3.286	1.301	3.455	1.405
To what extent do you believe managers in your department take equity and diversity issues seriously? (select one)	4.252	1.721	5.143	1.215	3.895	1.761	4.488	1.705	4.296	1.750	3.762	1.758
Inclusivity	3.307	0.882	3.543	0.550	3.374	0.923	3.238	0.878	3.398	0.883	3.188	0.976

	Gender								Ethnic Group						
	Overall		Man		Women		Asian or Asian British		Black or Black British		Other		White English / Welsh / Scottish / Northern Irish / British		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Do you agree with the following statement: I am satisfied with how my career has progressed to date. (select one)	3.267	1.373	3.412	1.622	3.242	1.333	3.059	1.345	3.179	1.365	4.125	1.126	3.538	1.506	
Do you agree with the following statement: I consider my current position as a stepping stone to my next career move. (select one)	3.948	1.107	4.278	1.179	3.887	1.089	3.556	1.247	4.053	1.082	4.375	0.916	3.615	1.044	
Do you agree with the following statement: I have been supported by senior managers and colleagues to progress my career. (select one)	3.231	1.302	3.444	1.423	3.192	1.283	3.000	1.029	3.141	1.266	3.500	1.690	3.923	1.498	
Do you agree with the following statement: My workplace/ work placement is characterised as an inclusive environment where everyone can reach their full potential. (select one)	2.500	1.068	2.778	1.114	2.450	1.058	2.889	1.183	2.367	0.963	2.750	1.488	2.615	1.193	
Do you agree with following statement: In order to progress my career, it is necessary for me to leave my current organisation. (select one)	2.439	1.220	2.588	1.064	2.412	1.248	2.889	1.132	2.355	1.272	2.000	1.195	2.583	0.900	
Do you agree with the following statement: I feel like there are not enough people who have a similar identity or background to me as role models in the senior positions in my organisation/ workplace. (select one)	2.336	1.438	3.222	1.478	2.173	1.377	2.111	1.183	2.338	1.501	2.625	1.598	2.462	1.391	
Carrer Progression	3.214	0.876	3.449	0.829	3.172	0.881	3.116	0.782	3.168	0.889	3.500	0.856	3.455	0.953	
Do you agree with the following statement: I would recommend my institution to s as a place to work. (select one)	3.398	1.141	3.722	0.895	3.340	1.174	3.389	0.778	3.342	1.164	3.500	1.852	3.692	0.947	
Do you agree with the following statement: The composition of my leadership workplace reflects the local population. (select one)	2.823	1.483	3.167	1.505	2.758	1.478	2.647	1.498	2.789	1.473	3.000	1.852	3.167	1.403	
Do you agree with the following statement: I am confident that this protocol/intervention will work and that my complaint will be taken seriously, acted on and dealt with satisfactorily. (select one)	2.966	1.154	3.611	1.145	2.850	1.123	3.000	1.085	2.975	1.109	2.375	1.408	3.231	1.363	
Do you agree with the following statement: I feel valued and appreciated for my work within my organisation. (select one)	3.308	1.283	3.722	1.227	3.232	1.284	3.222	1.060	3.192	1.249	3.500	1.690	4.000	1.414	
Do you agree with the following statement: I think seeing people who have a similar identity or background to me in senior positions would boost my self-confidence to progress upward. (select one)	4.430	0.882	4.059	1.197	4.495	0.805	4.278	1.074	4.545	0.836	4.375	0.744	3.909	0.831	
Do you agree with the following statement: In my experience, people from different backgrounds are readily accepted and made to feel welcome at my organisation. (select one)	3.542	1.099	3.778	1.215	3.500	1.078	3.667	0.970	3.430	1.106	3.625	1.408	4.000	1.000	
Do you agree with the following statement: My organisation consistently has racially diverse panels during interviews. (select one)	3.027	1.252	2.941	1.391	3.043	1.233	2.882	1.166	3.000	1.236	3.250	1.581	3.250	1.357	
Do you agree with the following statement: My workplace leadership clearly communicates the importance of achieving racial equity. (select one)	3.235	1.216	3.556	1.149	3.175	1.225	3.235	1.147	3.091	1.227	4.000	1.195	3.615	1.121	
Do you agree with the following statement: My workplace/ work placement provides the resources necessary for achieving racial equity	3.088	1.044	3.333	1.188	3.042	1.015	2.944	0.938	3.053	1.038	3.500	1.195	3.231	1.166	

Do you agree with the following statement: The interview process in my institution gives every candidate the best opportunity to share their skills and potential. (select one)	3.448	1.211	3.765	1.147	3.394	1.219	3.333	1.085	3.474	1.214	3.375	1.408	3.500	1.382
To what extent do you believe managers in your department take equity and diversity issues seriously? (select one)	4.252	1.721	4.778	1.700	4.155	1.716	4.111	1.711	4.105	1.771	4.250	1.488	5.308	1.316
Inclusivity	3.307	0.882	3.650	0.910	3.245	0.867	3.238	0.836	3.241	0.877	3.438	0.943	3.721	0.919

The figures below show boxplots of Career Progression and Inclusivity for Age groups, Gender and Ethnic Groups.





Statistical Comparison

Lastly, Analysis of Variance was used to determine whether or not there are differences in the scores of Career Progression and Inclusivity across age groups, genders or ethnicities. The results are shown below. A prior test of homogeneity of variances using Levene's tests indicated variances were equal between groups ($p > 0.05$).

ANOVA for Age

		Sum of Squares	df	Mean Square	F	Sig.
Career Progression	Between Groups	7.234	4	1.809	2.476	0.048
	Within Groups	82.550	113	0.731		
	Total	89.784	117			
Inclusivity	Between Groups	1.222	4	0.306	0.384	0.819
	Within Groups	89.818	113	0.795		
	Total	91.041	117			

ANOVA for Gender

		Sum of Squares	df	Mean Square	F	Sig.
Career Progression	Between Groups	1.174	1	1.174	1.537	0.218
	Within Groups	88.611	116	0.764		
	Total	89.784	117			
Inclusivity	Between Groups	2.503	1	2.503	3.280	0.073
	Within Groups	88.537	116	0.763		
	Total	91.041	117			

ANOVA for Ethnicity

		Sum of Squares	df	Mean Square	F	Sig.
Career Progression	Between Groups	1.753	3	0.584	0.757	0.521
	Within Groups	88.031	114	0.772		
	Total	89.784	117			
Inclusivity	Between Groups	2.800	3	0.933	1.206	0.311
	Within Groups	88.241	114	0.774		
	Total	91.041	117			

In the analysis of age differences based on Career Progression, a statistically significant effect was observed, as indicated by an F-statistic of 2.476, with a p-value of less than 0.05. Post-hoc tests using Tukey's test indicated that the difference lies on the comparison between those aged 25-34 and 55-64 ($p = 0.070$).

Conversely, for Inclusivity, the F-statistic was 0.384, and a non-significant p-value of 0.819 was obtained. This indicates that mean scores are not statistically different between genders.

Regarding Gender, an F-statistic of 1.537 was computed for Career Progression, with a non-significant p-value of 0.218. For Inclusivity, a F-statistic of 3.280 was observed, but the p-value (0.073) was slightly above the conventional significance level. When the mean scores are examined (previous section of the report), the mean score was higher for men ($M = 3.449$), which indicates that

the score of Career Progression is higher for men compared to women when a 10% significance level is considered ($p < 0.10$)

In the analysis of Ethnicity, an F-statistic of 0.757 was obtained for Career Progression, with a non-significant p-value of 0.521. Similarly, for Inclusivity, an F-statistic of 1.206 was calculated, and the p-value was not found to be statistically significant (0.311).

In summary, a statistically significant effect was found in Career Progression with respect to age differences ($F = 2.476$, $p < 0.05$), while age differences in Inclusivity were not found to be statistically significant ($F = 0.384$, $p = 0.819$). For Gender, a non-significant age difference was observed in both Career Progression ($F = 1.537$, $p = 0.218$) but a marginally significant difference was found for Inclusivity ($F = 3.280$, $p = 0.073$). Finally, age differences in Ethnicity were non-significant for both Career Progression ($F = 0.757$, $p = 0.521$) and Inclusivity ($F = 1.206$, $p = 0.311$).

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