Analysis Report

This report is structured as follows.

Contents

Descriptive Stats

In the table below, various variables are presented along with their corresponding mean, standard error of the mean (SEM), standard deviation (SD), skewness, and kurtosis values.

Variable	Mean	SEM	SD	Skewness	Kurtosis
I feel free to make choices with regards to the way I train	5.870	0.057	1.649	-1.594	4.545
I feel pushed to behave in certain ways	3.426	0.066	1.919	0.118	1.613
I have a say in how things are done	5.273	0.055	1.606	-0.964	3.163
feel forced to follow training decisions	3.159	0.065	1.890	0.379	1.836
I have the freedom to make training decisions	5.628	0.055	1.583	-1.247	3.828
I feel forced to do training tasks that I would not choose to do	2.486	0.060	1.736	0.880	2.497
I pursue goals that are my own	6.154	0.043	1.249	-2.006	7.158
I feel excessive pressure	2.248	0.056	1.636	1.168	3.194
I feel like I can be myself	6.209	0.045	1.317	-2.240	7.893
I must do what I am told	3.292	0.067	1.947	0.220	1.643
Autonomy Satisfaction	5.827	0.037	1.079	-1.327	5.087
Autonomy Frustration	2.922	0.047	1.371	0.406	2.325

The reliability of the composite scales 'Autonomy Satisfaction' and 'Autonomy Frustration' was tested using Cronbach's Alpha and scales showed good reliability ($\alpha = 0.774$ and $\alpha = 0.805$).

Descriptive Stats by Groups

The table below shows means and standard deviations for each adulthood phase.

Variable	Late		Mid		Early	
	M	SD	M	SD	M	SD
I feel free to make choices with regards to the way I train	6.257	1.435	5.822	1.689	5.202	1.748
I feel pushed to behave in certain ways	2.986	1.931	3.587	1.907	3.994	1.719
I have a say in how things are done	5.436	1.607	5.321	1.619	4.871	1.522
feel forced to follow training decisions	2.743	1.845	3.340	1.901	3.646	1.796
I have the freedom to make training decisions	5.870	1.578	5.702	1.480	5.028	1.624
I feel forced to do training tasks that I would not choose to do	2.217	1.701	2.530	1.738	2.933	1.709
I pursue goals that are my own	6.277	1.262	6.117	1.275	5.978	1.154
I feel excessive pressure	1.994	1.593	2.140	1.537	2.933	1.706
I feel like I can be myself	6.315	1.277	6.187	1.385	6.039	1.255
I must do what I am told	2.821	1.927	3.324	1.913	4.152	1.742
Autonomy Satisfaction	6.031	1.034	5.830	1.087	5.424	1.045
Autonomy Frustration	2.552	1.354	2.984	1.315	3.531	1.272

The table below shows means and standard deviations for each level of coaching presence.

Variable	Yes		Sometimes		No	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
I feel free to make choices with regards to the way I train	5.580	1.724	6.045	1.534	6.466	1.385
I feel pushed to behave in certain ways	3.616	1.913	3.416	1.866	2.856	1.923
I have a say in how things are done	5.129	1.600	5.400	1.524	5.500	1.723
feel forced to follow training decisions	3.391	1.911	3.163	1.833	2.438	1.742
I have the freedom to make training decisions	5.377	1.578	5.759	1.535	6.178	1.521
I feel forced to do training tasks that I would not choose to do	2.574	1.762	2.596	1.693	2.034	1.667
I pursue goals that are my own	6.087	1.228	6.102	1.368	6.445	1.057
I feel excessive pressure	2.371	1.677	2.155	1.507	2.027	1.694
I feel like I can be myself	6.221	1.284	6.024	1.411	6.479	1.205
I must do what I am told	3.647	1.925	3.073	1.854	2.568	1.922
Autonomy Satisfaction	5.679	1.059	5.866	1.071	6.214	1.062
Autonomy Frustration	3.120	1.355	2.881	1.341	2.385	1.330

In the first table, examining adulthood phases, a clear trend emerges across most variables. For instance, the perception of freedom to make choices and pursue personal goals, as well as the feeling of being oneself, shows a gradual increase from early to late adulthood. Conversely, feelings of being pushed or forced to behave in certain ways, and experiencing pressure, generally decreases as one moves from early to late adulthood. This suggests an increase in autonomy satisfaction and a decrease in autonomy frustration as individuals progress from early to late adulthood.

The second table, focusing on the level of coaching presence, reveals a somewhat different trend. Here, when there is no coaching presence, the mean scores for variables like feeling free to make choices, having the freedom to make training decisions, and pursuing personal goals are notably higher compared to when coaching presence is 'Yes' or 'Sometimes.' This suggests greater autonomy satisfaction in the absence of coaching. Conversely, feelings of being pushed, forced, or experiencing pressure are lower in the absence of coaching, indicating reduced autonomy frustration.

Correlation Analysis

The table presented here displays the correlation coefficients between various aspects of training autonomy and attitudes in a structured matrix. Each cell in the matrix shows the correlation between two different variables, indicated by the numbers 1 to 12. The asterisks (***) indicate a significant correlation at the specific confidence level of 0.001.

The correlations range from positive (indicating a direct relationship) to negative (indicating an inverse relationship). For example, a positive correlation between "I feel free to make choices with regards to the way I train" (1) and "I have the freedom to make training decisions" (5) suggests that as one's sense of freedom in training choices increases, so does their sense of freedom in training decisions. Conversely, a negative correlation, such as between "I feel free to make choices with regards to the way I train" (1) and "feel forced

to follow training decisions" (4), implies that an increase in one's sense of freedom in training choices is associated with a decrease in feeling forced to follow training decisions.

In summary, this correlation matrix provides a detailed view of how different aspects of training autonomy and attitudes are interconnected. Positive correlations indicate a mutual increase or decrease in the variables, while negative correlations suggest an inverse relationship, where an increase in one is associated with a decrease in the other.

	1	2	3	4	5	6	7	8	9	10	11	12
I feel free to make choices with regards to the way I train (1)	-											
I feel pushed to behave in certain ways (2)	-0.217***	-										
I have a say in how things are done (3)	0.352***	-0.214***	-									
feel forced to follow training decisions (4)	-0.409***	0.511***	-0.298***	-								
I have the freedom to make training decisions (5)	0.567***	-0.295***	0.471***	-0.463***	-							
I feel forced to do training tasks that I would not choose to do (6)	-0.279***	0.446***	-0.253***	0.575***	-0.389***	-						
I pursue goals that are my own (7)	0.359***	-0.248***	0.351***	-0.331***	0.491***	-0.304***	-					
I feel excessive pressure (8)	-0.246***	0.428***	-0.287***	0.403***	-0.268***	0.507***	-0.285***	-				
I feel like I can be myself (9)	0.270***	-0.323***	0.377***	-0.300***	0.400***	-0.315***	0.468***	-0.374***	-			
I must do what I am told (10)	-0.368***	0.422***	-0.375***	0.468***	-0.392***	0.400***	-0.257***	0.391***	-0.297***	-		
Autonomy Satisfaction (11)	0.726***	-0.353***	0.717***	-0.499***	0.818***	-0.422***	0.704***	-0.397***	0.664***	-0.471***	-	
Autonomy Frustration (12)	-0.407***	0.755***	-0.381***	0.793***	-0.484***	0.771***	-0.378***	0.709***	-0.427***	0.725***	-0.571***	-

Two-way ANOVA

Before the two-way ANOVA was conducted, the assumption of equal variances was tested for both autonomy frustration and satisfaction. The Levene's tests indicated that variances are equal in all cases (p > 0.05) so no violation of this assumption was present.

The two-way ANOVA table presents the analysis of variance for two variables, Autonomy Satisfaction and Autonomy Frustration, across different groups and their interaction. The table breaks down the variance into components associated with different effects: the Adulthood Group, whether individuals were Coached, and the interaction between these two factors (Adulthood_Group:Coached). It also includes the residuals, which represent the variation not explained by the factors in the model.

For Autonomy Satisfaction:

The Adulthood_Group effect shows a significant influence (p = 0.000), with a sum of squares (Sum_Sq) of 43.399, indicating a substantial amount of the variance in autonomy satisfaction is explained by adulthood group differences.

The Coached effect is also significant (p = 0.000) with a Sum_Sq of 21.791, suggesting that whether individuals were coached or not also significantly affects autonomy satisfaction.

The interaction effect (Adulthood_Group:Coached) is not significant (p = 0.105), with a lower Sum_Sq of 8.344, indicating that the combined effect of adulthood group and coaching on autonomy satisfaction is not statistically significant. This means that the effect of age on autonomy satisfaction does not depend on whether or not the individual was coached or not.

For Autonomy Frustration:

The Adulthood_Group effect is significant (p = 0.000), with a high Sum_Sq of 114.694, indicating a strong impact of adulthood group on autonomy frustration.

The Coached effect is significant (p = 0.000) with a Sum_Sq of 37.056, showing coaching status also significantly influences autonomy frustration.

The interaction effect (Adulthood_Group:Coached) is not significant (p = 0.384), with a Sum_Sq of 7.121, suggesting the combined impact of adulthood group and coaching on autonomy frustration is not statistically significant. In other words, the effect of age on autonomy frustration is not related to the level of coaching.

Variable	Effect	Sum_Sq	Mean_Sq	Df	FValue	p
Autonomy Satisfaction	Adulthood_Group	43.399	21.699	2	19.954	0.000
Autonomy Satisfaction	Coached	21.791	10.895	2	10.019	0.000
Autonomy Satisfaction	Adulthood_Group:Coached	8.344	2.086	4	1.918	0.105
Autonomy Satisfaction	Residuals	902.588	1.087	830		
Autonomy Frustration	Adulthood_Group	114.694	57.347	2	33.582	0.000
Autonomy Frustration	Coached	37.056	18.528	2	10.850	0.000
Autonomy Frustration	Adulthood_Group:Coached	7.121	1.780	4	1.042	0.384
Autonomy Frustration	Residuals	1417.351	1.708	830		

The posthoc table provides detailed comparisons between different levels of factors for two response variables, Autonomy Frustration (AF) and Autonomy Satisfaction (AS), under the influence of two factors: Coached and Adulthood Group. The table lists the differences (Diff) between group means along with their confidence intervals (Lower Limit and Upper Limit) and the significance levels (p-values).

Response_Variable	Factor	Comparison	Diff	Lower Limit	Upper Limit	p
AF_Coached	Coached	Sometimes-No	0.496	0.165	0.826	0.001
AF_Coached	Coached	Yes-No	0.735	0.433	1.036	0.000
AF_Coached	Coached	Yes-Sometimes	0.239	-0.012	0.490	0.067
AF_Adulthood_Group	Adulthood_Group	Late-Early	-0.979	-1.266	-0.693	0.000
AF_Adulthood_Group	Adulthood_Group	Mid-Early	-0.547	-0.838	-0.256	0.000
AF_Adulthood_Group	Adulthood_Group	Mid-Late	0.432	0.190	0.674	0.000
AS_Coached	Coached	Sometimes-No	-0.348	-0.608	-0.087	0.005
AS_Coached	Coached	Yes-No	-0.535	-0.772	-0.297	0.000
AS_Coached	Coached	Yes-Sometimes	-0.187	-0.385	0.011	0.069
AS_Adulthood_Group	Adulthood_Group	Late-Early	0.608	0.379	0.836	0.000
AS_Adulthood_Group	Adulthood_Group	Mid-Early	0.406	0.174	0.639	0.000
AS_Adulthood_Group	Adulthood_Group	Mid-Late	-0.201	-0.395	-0.008	0.039

For Autonomy Frustration (AF) with respect to the Coached factor:

There is a significant difference between the 'Sometimes' and 'No' coaching conditions (p = 0.001), with a mean difference of 0.496, indicating higher autonomy frustration in the 'Sometimes' group.

The difference between 'Yes' and 'No' is also significant (p = 0.000) with a larger mean difference of 0.735, suggesting even higher autonomy frustration when coaching is consistently present.

The comparison between 'Yes' and 'Sometimes' is not statistically significant (p = 0.067), with a smaller mean difference of 0.239.

Regarding the Adulthood Group factor for Autonomy Frustration:

There's a significant difference between the Late and Early adulthood groups (p = 0.000), with a mean difference of -0.979, indicating lower autonomy frustration in the Late adulthood group.

The Mid and Early group comparison is significant (p = 0.000) with a mean difference of -0.547, also suggesting lower autonomy frustration in the Mid group compared to the Early group.

The Mid-Late comparison is significant (p = 0.000) with a mean difference of 0.432, indicating higher autonomy frustration in the Mid group compared to the Late group.

For Autonomy Satisfaction (AS) with respect to the Coached factor:

There's a significant difference between 'Sometimes' and 'No' (p = 0.005), with a mean difference of -0.348, indicating higher autonomy satisfaction when coaching is absent or sporadic.

The 'Yes' and 'No' comparison is significant (p = 0.000) with a larger mean difference of -0.535, showing higher satisfaction in the absence of coaching.

The 'Yes' versus 'Sometimes' difference is not statistically significant (p = 0.069), with a mean difference of -0.187.

For the Adulthood Group factor in Autonomy Satisfaction:

The Late-Early group comparison is significant (p = 0.000), with a mean difference of 0.608, indicating higher satisfaction in the Late adulthood group.

The Mid-Early comparison is significant (p = 0.000) with a mean difference of 0.406, also suggesting higher satisfaction in the Mid group compared to the Early group.

The Mid-Late comparison is significant (p = 0.039), with a mean difference of -0.201, indicating lower satisfaction in the Mid group compared to the Late group.

Lastly, the graphs below shows the difference of autonomy frustration and satisfaction for different levels of the two factors under study (interaction plots).

The first graph (below) shows the mean scores for Autonomy Frustration. All three lines show a downward trend, indicating that AF decreases from the Early to Late adulthood phase..

The green line, representing the 'Sometimes' coaching presence also shows a decrease in AF, but it shows a slighter decrease from Mid to Late adulthood, which could suggest a nuanced impact of occasional coaching on AF in the later phases of adulthood. Nevertheless, the absence of interaction effects as per the results of the ANOVA suggest that there is no difference on the decline of AF from early yo late adulthood across different levels of coaching.

The second graph shows the same information for autonomy satisfaction. The trends are upward, indicating that AS increases from the Early to Late adulthood phase.

The red line, representing individuals with no coaching, shows the highest increase. The green line (Sometimes) exhibits a dip in the Mid adulthood phase before rising again in the Late phase, while the blue line (Yes) shows a more consistent increase across the phases, although it starts lower and ends higher than the green line.

Interaction Plot: AF by Adulthood_Group and Coached

Interaction Plot: AS by Adulthood_Group and Coached