

P8158 - Final Project
Effects of Athletic Identity, Resilience, and
Healthy Lifestyle on Emotional Well-being during
COVID-19

Waveley Qiu, Yihan Qiu, Yuanyuan Zeng

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Motivation

- ▶ The onset of COVID-19 affected almost every sphere of work and leisure.
- ▶ We are interested in investigating the impact one's athletic identity may have on mental well-being, particularly as the context of a global pandemic may have dramatically impacted one's experience of playing a sport/being an athlete.

Resilience, Healthy Lifestyle, and Mental Health

- ▶ Resilience and health lifestyle are both characteristics that are associated with mental well-being (both of which increase positive indicators of mental health and decrease negative indicators of mental health)
- ▶

Methodology

1. Conduct EFA and CFA to determine which observed variables underlie our latent variables of interest.
2. Evaluate reliability with Chronbach's alpha.
3. Create a SEM to quantify the relationship between our constructed latent variables and mental health score.

Data: Athlete Mental Healthy Survey

Several surveys administered including in the UK after their first COVID-19 lockdown including:

- ▶ Athletic Identity Scale (AIMS)
- ▶ The Brief Resilience Scale
- ▶ Mental Health Continuum Short Form (MHC-SF)

In total, 753 individuals were interviewed – we will focus our analysis on the 363 athletes represented in this study.

Latent Variable 1: Athletic Identity

Athletic Identity Scale (AIMS)

First Order Factors	AIMS Items
Social identity	
AIMS 1	I consider myself an athlete. CNSDR-ATH
AIMS 2	I have many goals related to sport. SPRT-GOALS
AIMS 3	Most of my friends are athletes. FRNDS-ATH
Exclusivity	
AIMS 4	Sport is the most important part of my life. SPRT-IMPT
AIMS 5	I spend more time thinking about sport than anything else. THINK-SPRT
Negative affectivity	
AIMS 6	I feel bad about myself when I do poorly in sport. BAD-SPRT
AIMS 7	I would be very depressed if I were injured and could not compete in sport. DPRS-SPRT

Note: Participants respond to the 7-items of the Athletic Identity Measurement Scale (AIMS) on a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Latent Variable 1 (Athletic Identity): EFA

Parallel component analysis recommends 2 components.

From the EFA, we first propose that there are three latent variables underlying the AIMS variables, structured as follows:

- ▶ `external_identity` (comprised of `sprr_goals`, `cnsdr_ath`, `frnds_ath`)
- ▶ `internal_value` (comprised of `sprr_impt`, `think_sprr`)
- ▶ `negative_events` (comprised of `dprsr_sprr`, `bad_sprr`)

Latent Variable 1 (Athletic Identity): Reliability

Chronbach's alpha were reasonable for `internal_value` and `negative_events` (0.81 and 0.63, respectively), with no variables indicated that could be dropped to improve reliability.

However, for `external_identity`:

```
lower alpha upper      95% confidence bc  
0.59 0.65 0.72
```

Reliability if an item is dropped:

	raw_alpha	std.alpha	G6(smc)	a
<code>cnsdr_ath</code>	0.47	0.49	0.33	
<code>sprr_goals</code>	0.46	0.47	0.31	
<code>frnds_ath</code>	0.75	0.76	0.61	

Since Chronbach's alpha would improve significantly if `frnds_ath` is removed, we decided to remove this variable from the `athlete_identity` latent structure.

Latent Variable 1 (Athletic Identity): CFA

Latent Variables:

	Estimate	Std.Err	z-value	P(> z)
external_identity =~				
sprt_goals	0.677	0.073	9.247	0.000
cnsdr_ath	0.584	0.056	10.404	0.000
internal_value =~				
sprt_impt	0.627	0.109	5.728	0.000
think_sprt	0.840	0.166	5.077	0.000
negative_events =~				
dprs_sprt	0.625	0.078	8.053	0.000
bad_sprt	0.799	0.103	7.777	0.000
athlete_identity =~				
external_dntty	0.809	0.143	5.658	0.000
internal_value	1.396	0.374	3.729	0.000
negative_evnts	0.813	0.152	5.364	0.000

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Both the first- and second- order latent variables report significant loadings. As fit statistics are also adequate (CFA > 0.99, RMSEA < 0.05, $\chi^2 = 0.514$), we will proceed with this structure in our SEM.

Latent Variable 2: Resilience

► The Brief Resilience Scale

Please respond to each item by marking <u>one box per row</u>		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times <i>BOUNCE</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 2	I have a hard time making it through stressful events. <i>STRS-EVNT</i>	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 3	It does not take me long to recover from a stressful event. <i>STRS-RCVR</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 4	It is hard for me to snap back when something bad happens. <i>SNAP-BACK</i>	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1
BRS 5	I usually come through difficult times with little trouble. <i>DIFFICULT</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
BRS 6	I tend to take a long time to get over set-backs in my life. <i>SETBACKS</i>	<input type="checkbox"/> 5	<input type="checkbox"/> 4	<input type="checkbox"/> 3	<input type="checkbox"/> 2	<input type="checkbox"/> 1

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Latent Variable 2 (Resilience): PCA

- ▶ Parallel component analysis recommended 1 component.
- ▶ After running EFA on 1- and 2- factor models,

Latent Variable 3: Healthy Lifestyle

- ▶ Indicators of healthy lifestyle
 1. Five Fruit and Vegetables: Yes/No

- ▶ Higher sum score indicates healthier lifestyle

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- ▶ Indicators of healthy lifestyle
 1. Five Fruit and Vegetables: Yes/No
 2. Smoking Status: 7-point Likert scale

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Latent Variable 3: Healthy Lifestyle

- ▶ Indicators of healthy lifestyle
 1. Five Fruit and Vegetables: Yes/No
 2. Smoking Status: 7-point Likert scale
 3. Hour Sleep: numerical variable
- ▶ Higher sum score indicates healthier lifestyle

Outcome Variable: Well-Being Composite Score

- ▶ The Mental Health Continuum Short Form (MHC-SF)
- ▶ Assess three components of well-being – Emotional – Social – Psychological
- ▶ Higher scores indicate greater levels of positive well-being (scores range from 0 to 70)

Discussion

Resources

1. Hu, T., Zhang, D., & Wang, J. (2014, December 13). A meta-analysis of the Trait Resilience and Mental Health. Personality and Individual Differences. <https://www.sciencedirect.com/science/article/pii/S0191886914006710>
2. Dale, H., Brassington, L., & King, K. (2014, March 5). The impact of healthy lifestyle interventions on Mental Health and Wellbeing: A systematic review. Mental Health Review Journal. <https://www.emerald.com/insight/content/doi/10.1108/MH-RJ-05-2013-0016/full/html>
2. <https://www.tandfonline.com/doi/full/10.1080/10413200802415048>
2. <https://measure.whatworkswellbeing.org/measures-bank/brief-resilience-scale/>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7068432/#B17-ijerph-17-01265>
4. <https://www.hsph.harvard.edu/health-happiness/mental-health-continuum-short-form/>
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7147210/>