Faculty of Agricultural and Nutritional Science

Christian-Albrechts-University Kiel
Institute of Animal Breeding and Husbandry

Influence of fattening pigs' positive affective state on behavioural and physiological parameters

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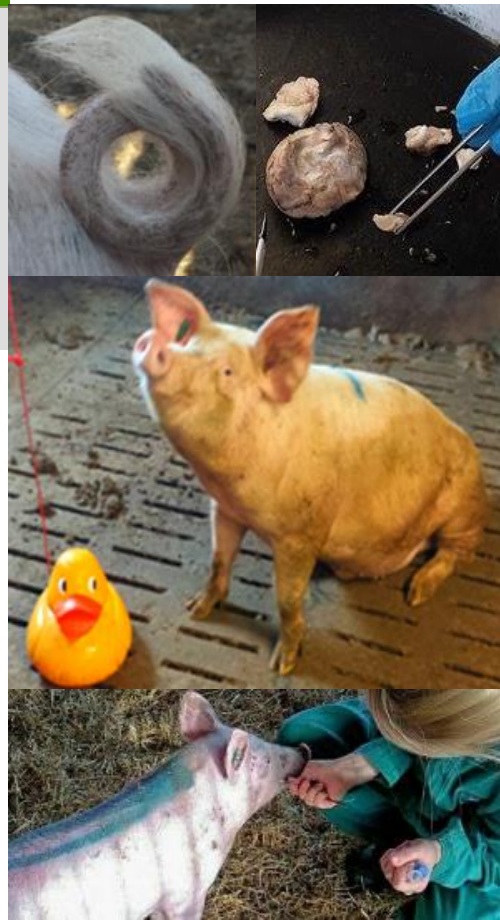

Introduction

Welfare

(Fraser, 2008)

Health and biological functionality

Natural behaviour

Affective state

Introduction

AFFECTIVE STATE

Introduction

Introduction

Behavioural parameters

Physiological parameters

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Behavioural parameters

Behavioural tests

- Human Animal Relationship Test
- Novel Object Test

Play behaviour

Body language

- Tail position
- Ear position

Physiological parameters

Saliva

- Immunoglobulin A
- Protein composition
- Total protein content

Glands

- Adrenal glands

Brain structure

- Hippocampus size
- Astroglia cells

Aims

Behaviour

Behavioural tests
- Human Animal Relationship Test
- Novel Object Test

Play behaviour

Body language
- Tail position

Are these indicators…
- **capable of measuring certain aspects of the affective state?**
- **influenced by the affective state?**

Physiological parameters

- Total protein content

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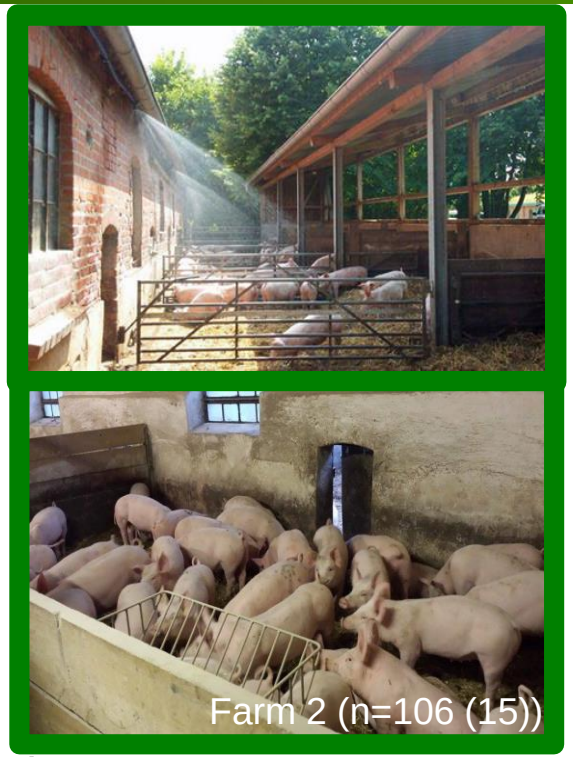
Materials and methods



Barren environment

Enriched environment

60 growing pigs (Pi x (LW x LR)), chirurgically castrated, undocked tails

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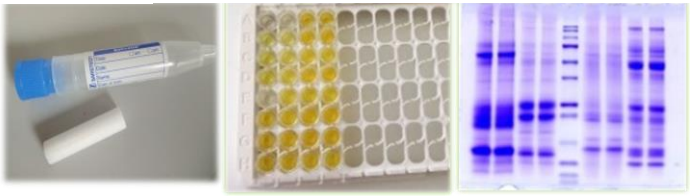

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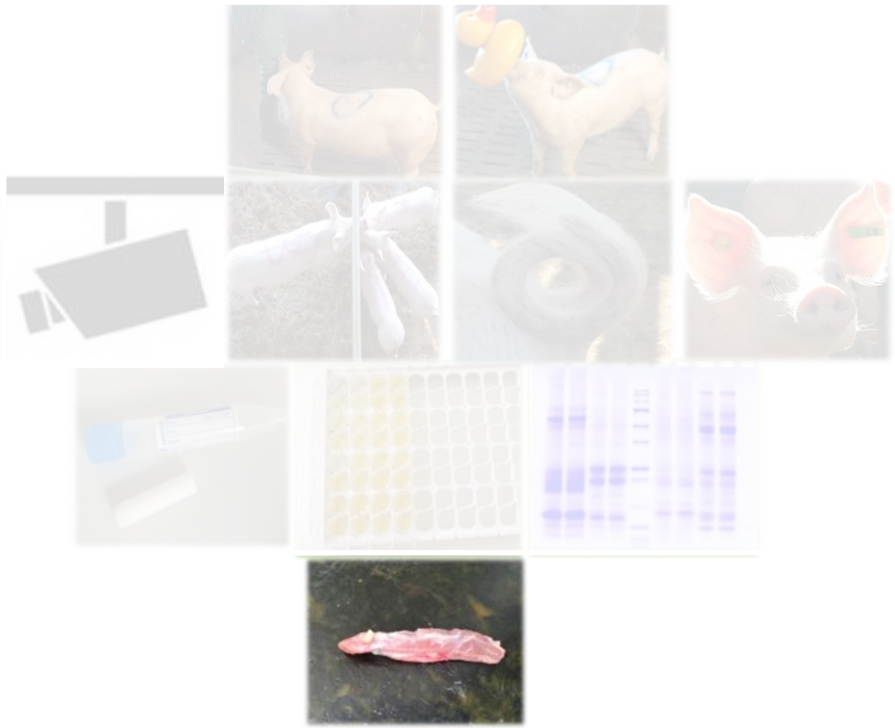

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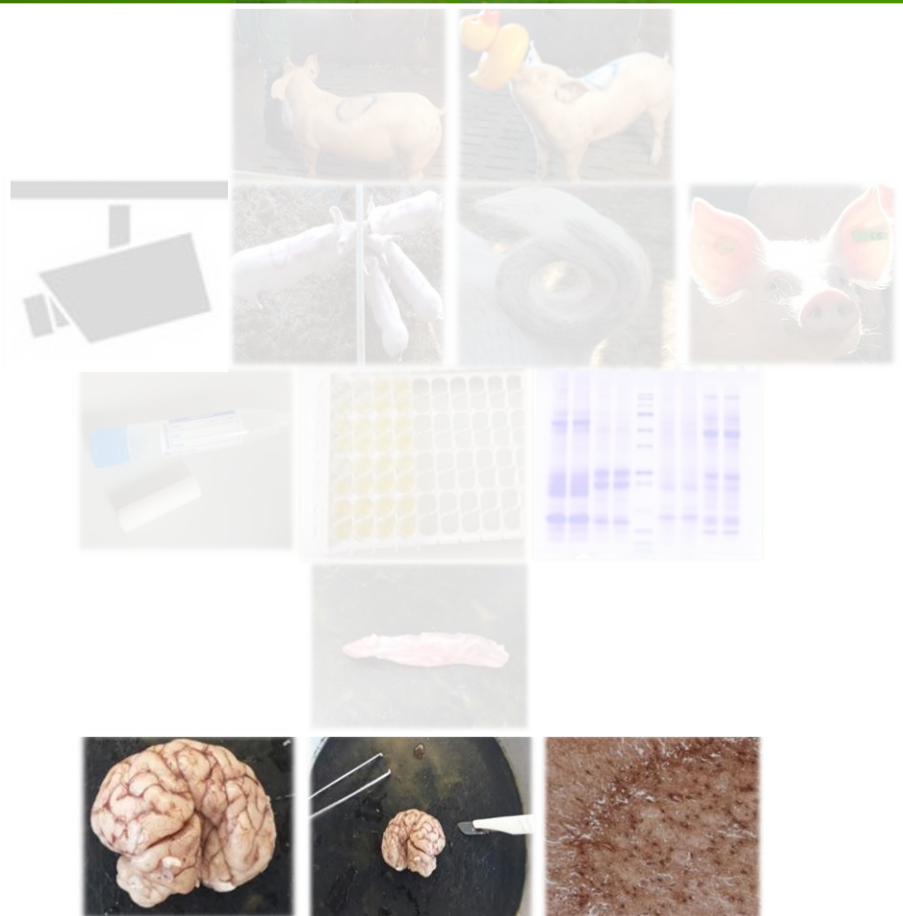

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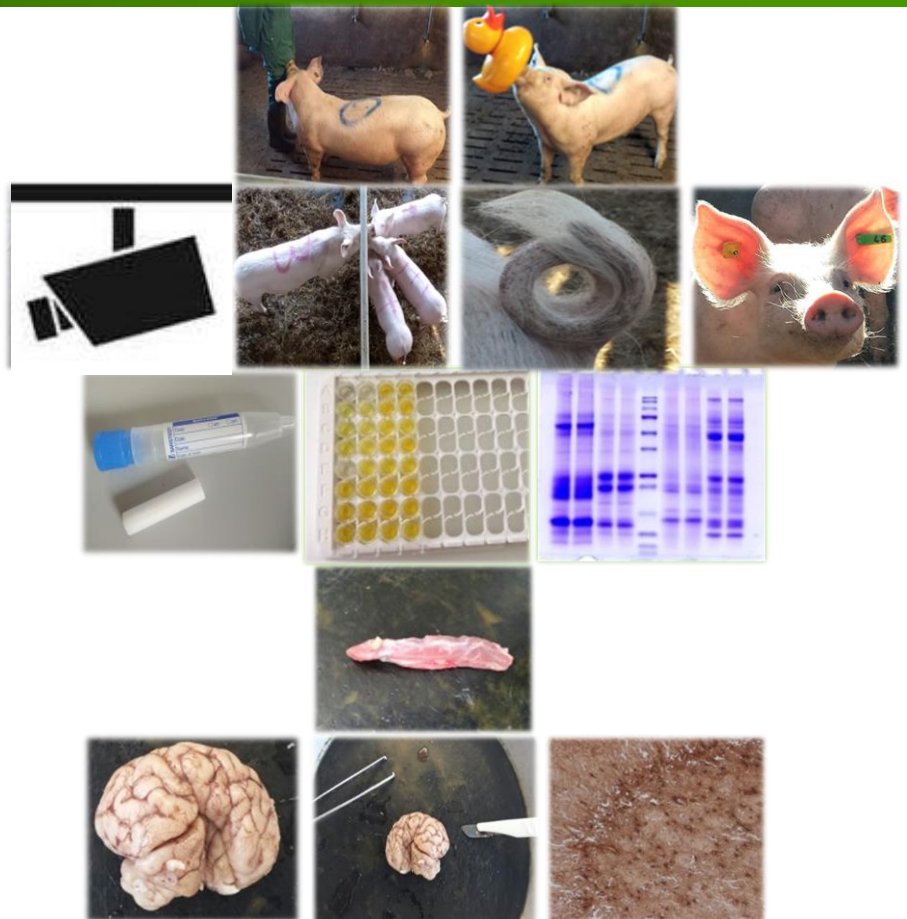

Results: Partial Least Squares Structural Equation Model

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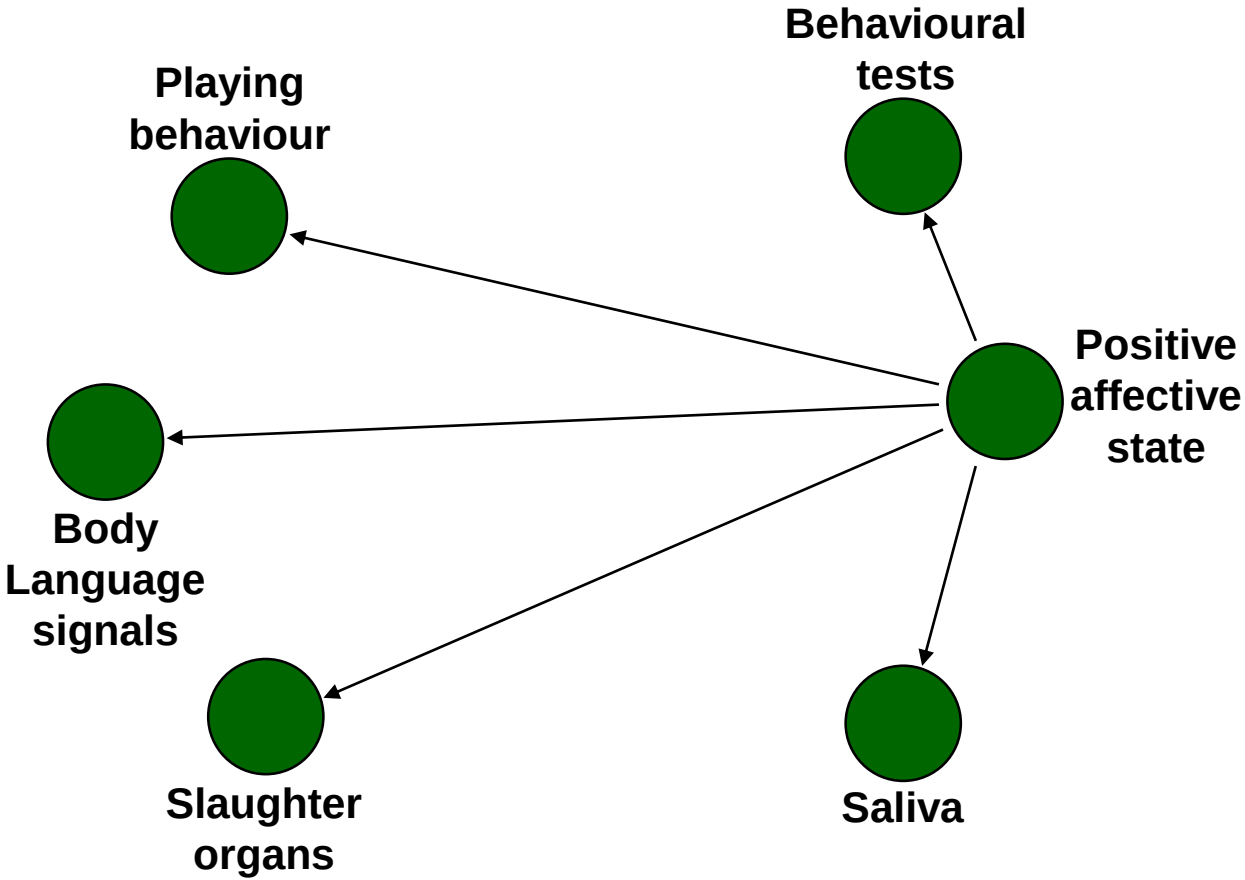

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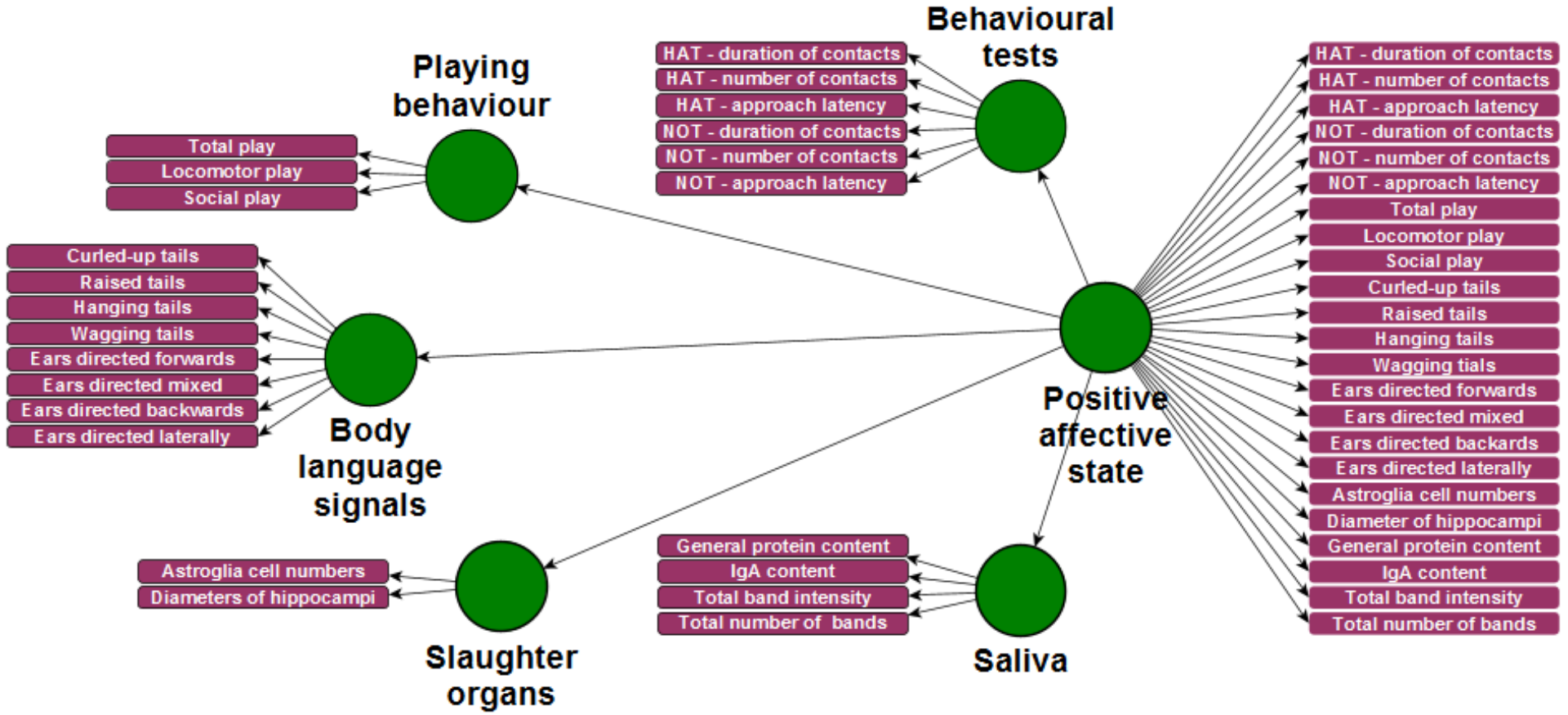

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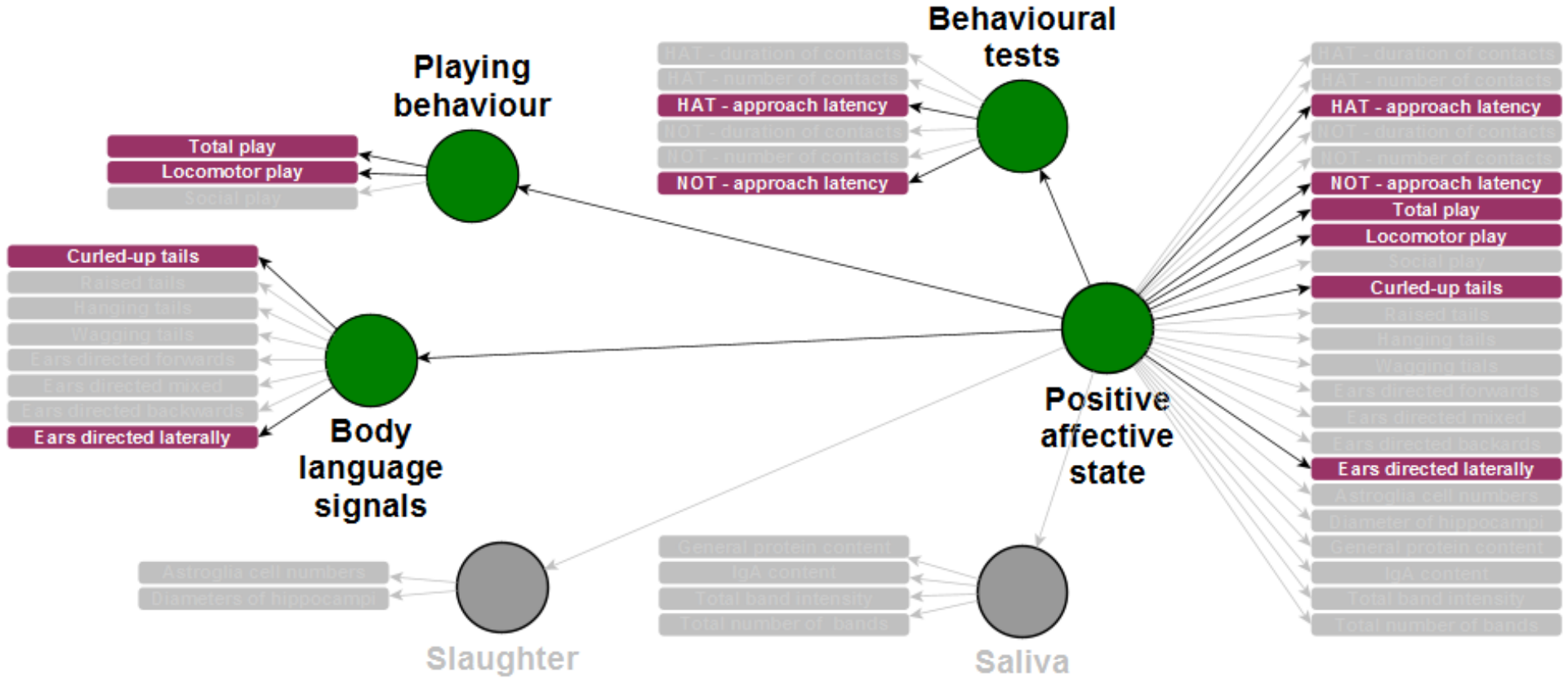
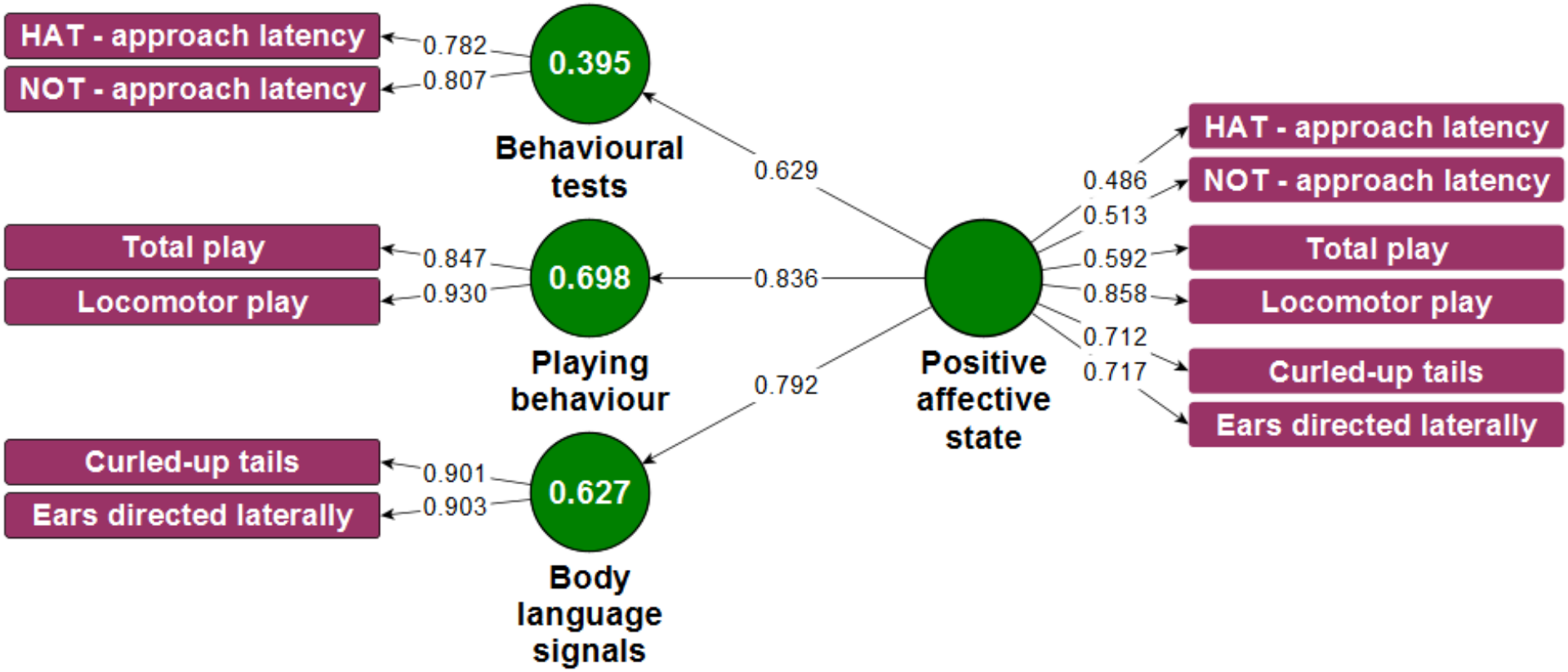


Results and discussion



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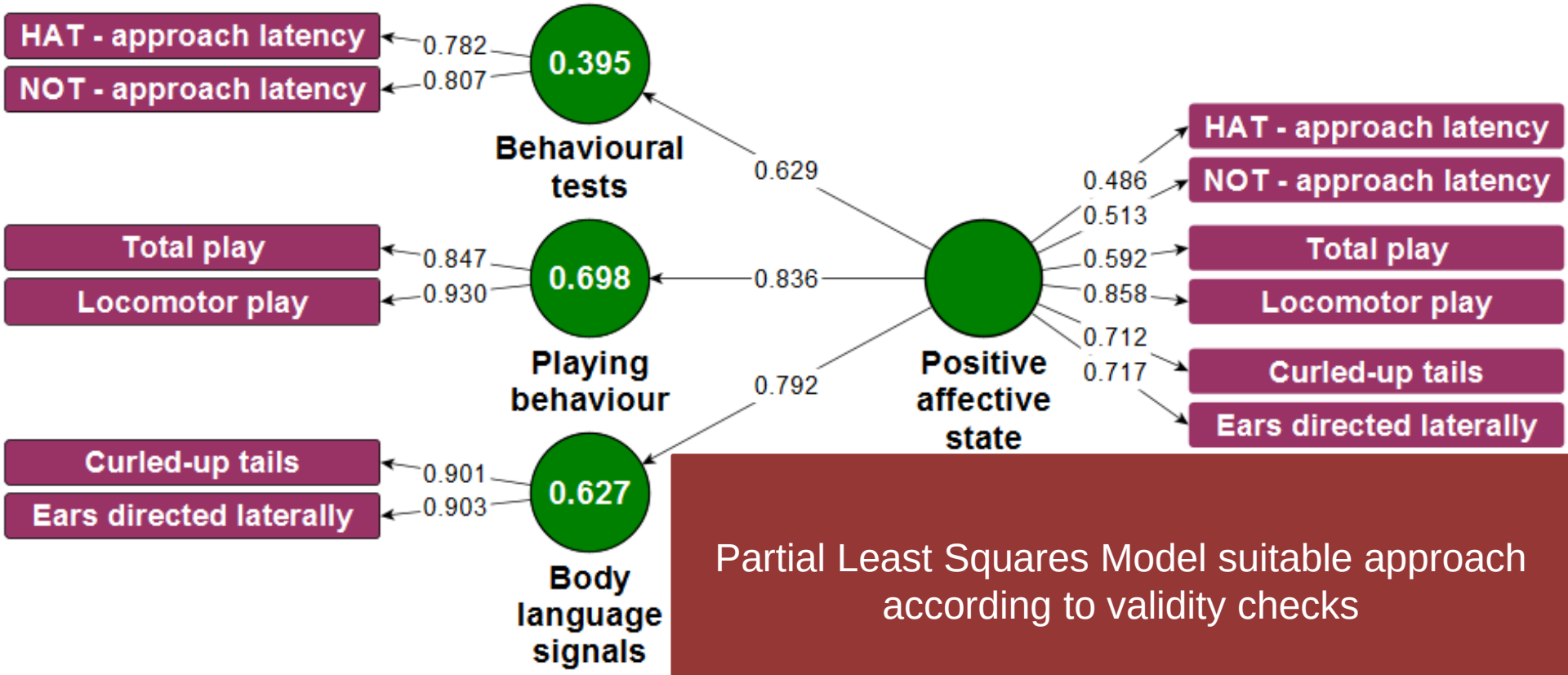
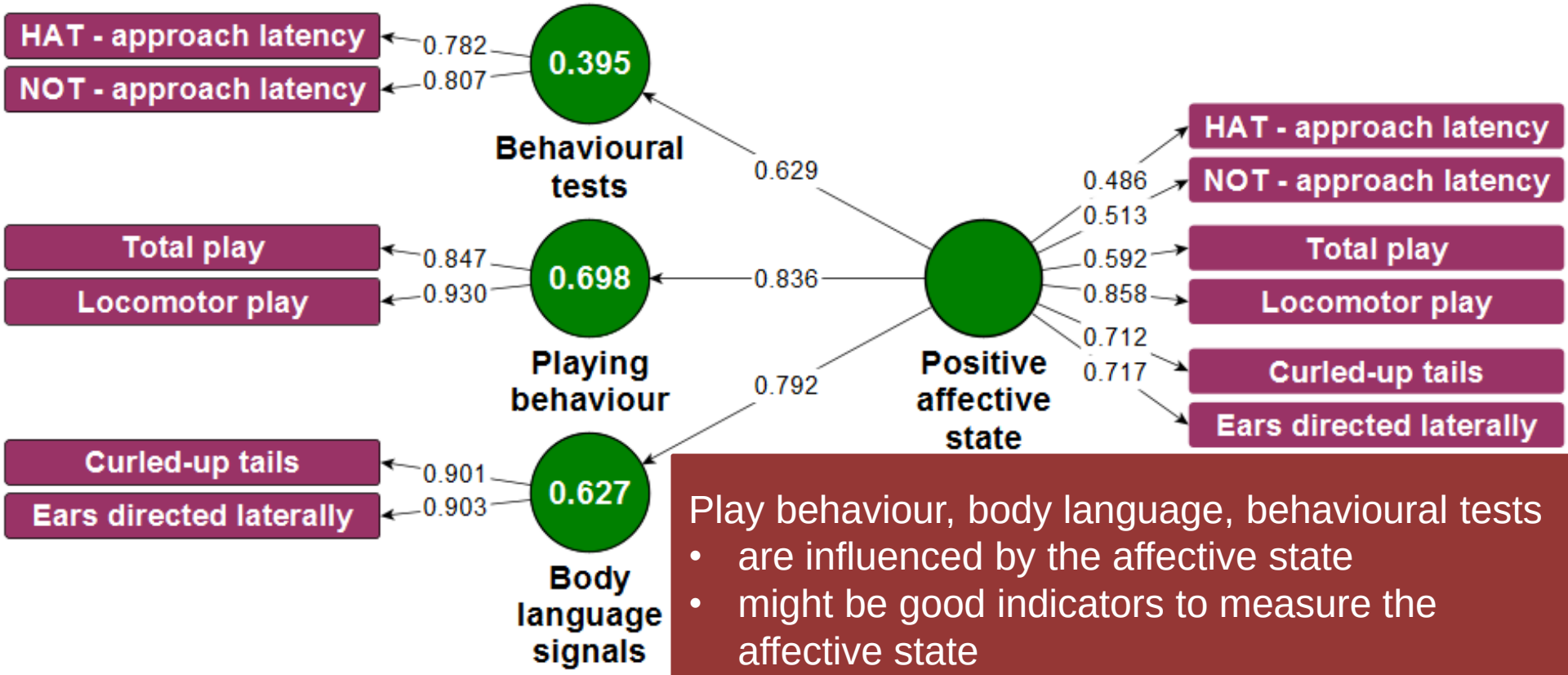


Partial Least Squares Model suitable approach according to validity checks

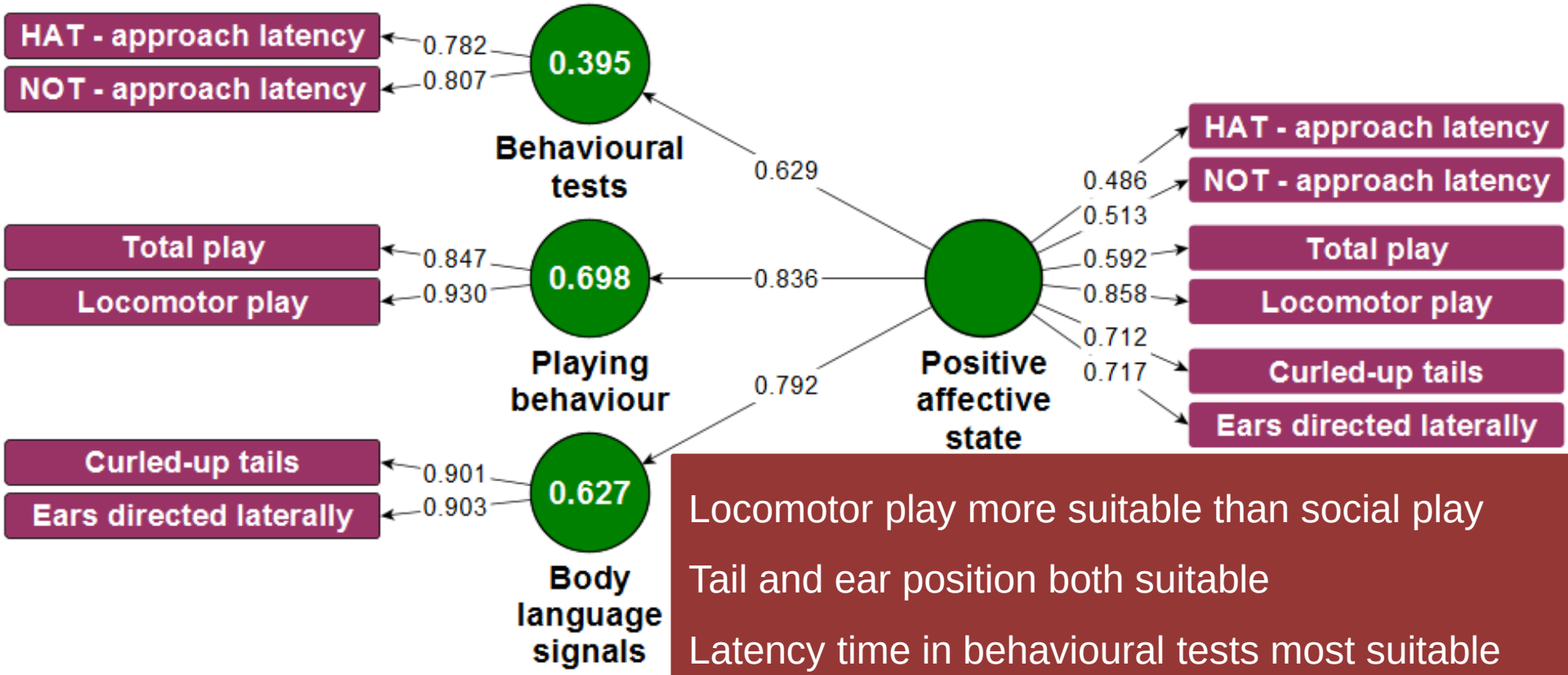
Results and discussion



Play behaviour, body language, behavioural tests

- are influenced by the affective state
- might be good indicators to measure the affective state

Results and discussion



Locomotor play more suitable than social play

Tail and ear position both suitable

Latency time in behavioural tests most suitable

Limitations of the study

- Low number of animals
- Influences by varying farm conditions (e.g. feeding)
- Do we really measure the positive affective state
  → Controlled conditions
- Other potential indicators

Federal Office for Agriculture and Food

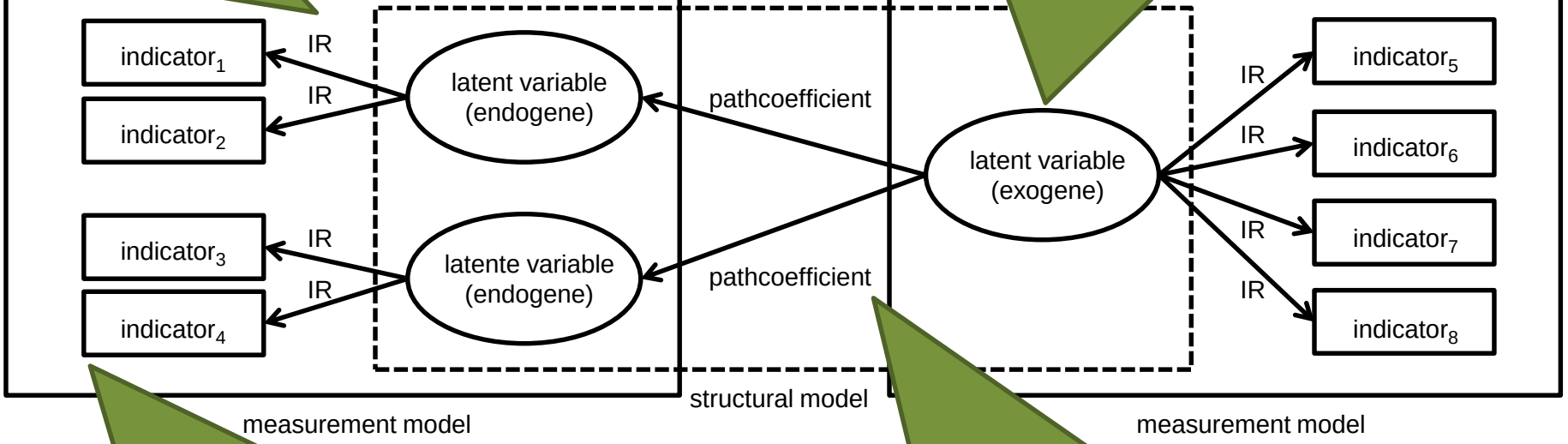
THANK YOU FOR YOUR ATTENTION!

Materials and methods

Statistikfolie erklärung sem

indicator reliability = efficiency of approximation of the latent variable by the indicators (Hair et al., 2017)

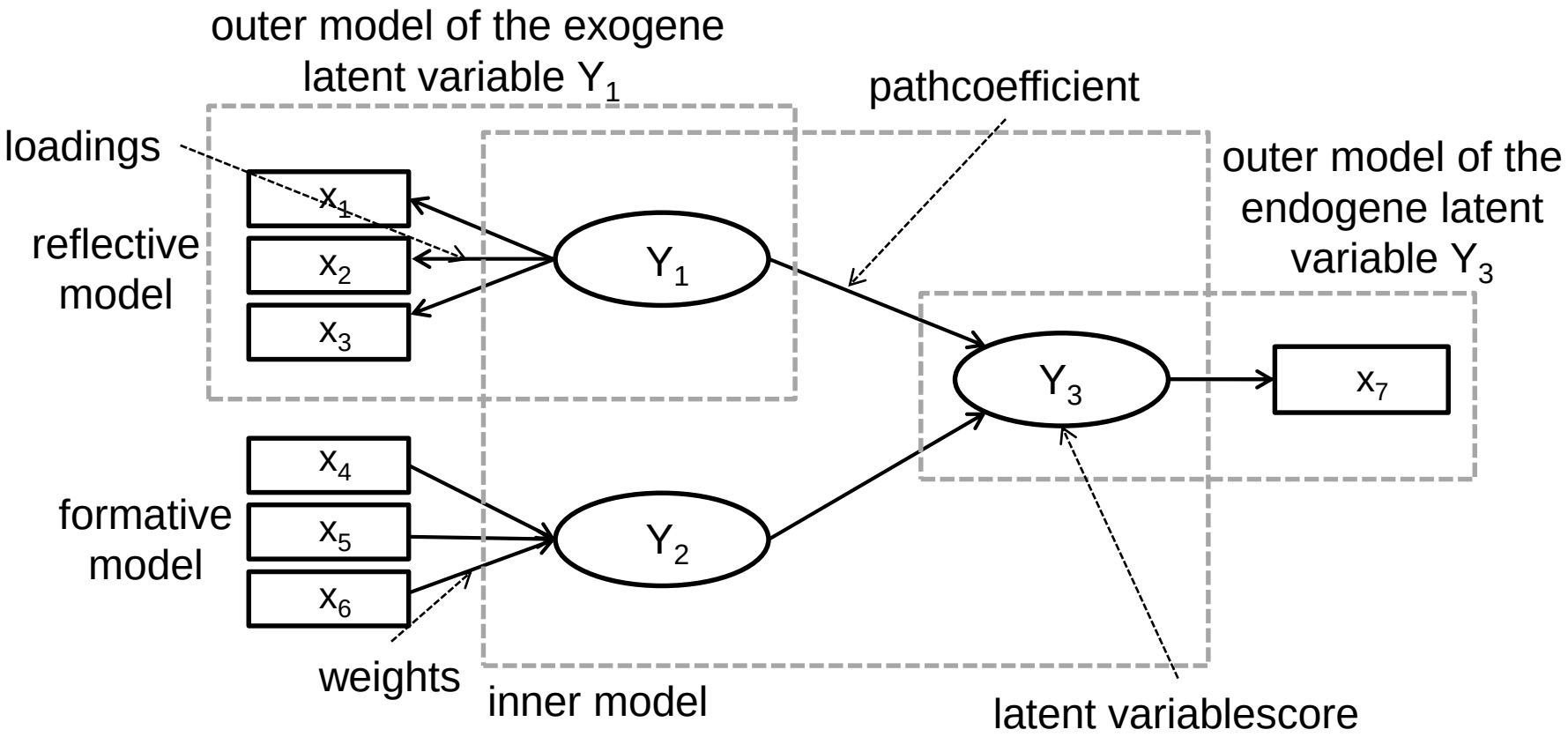
latent variable = only indirect approximation by indicators possible (Hair et al., 2017)



indicator = allows approximation of latent variable (Hair et al., 2017)

pathcoefficients = kind and strength of construct connections (Hair et al., 2017)

Materials and methods



Summary and conclusion

- **Partial Least Squares Modeling suitable approach**
- **Play behaviour, body language signals, behavioural tests**
  - **are influenced by the affective state**
  - **might be good indicators to measure the affective state**
- **Locomotor play more suitable than social play**
- **Tail and ear position both suitable**
- **Latency time in behavioural tests most suitable**

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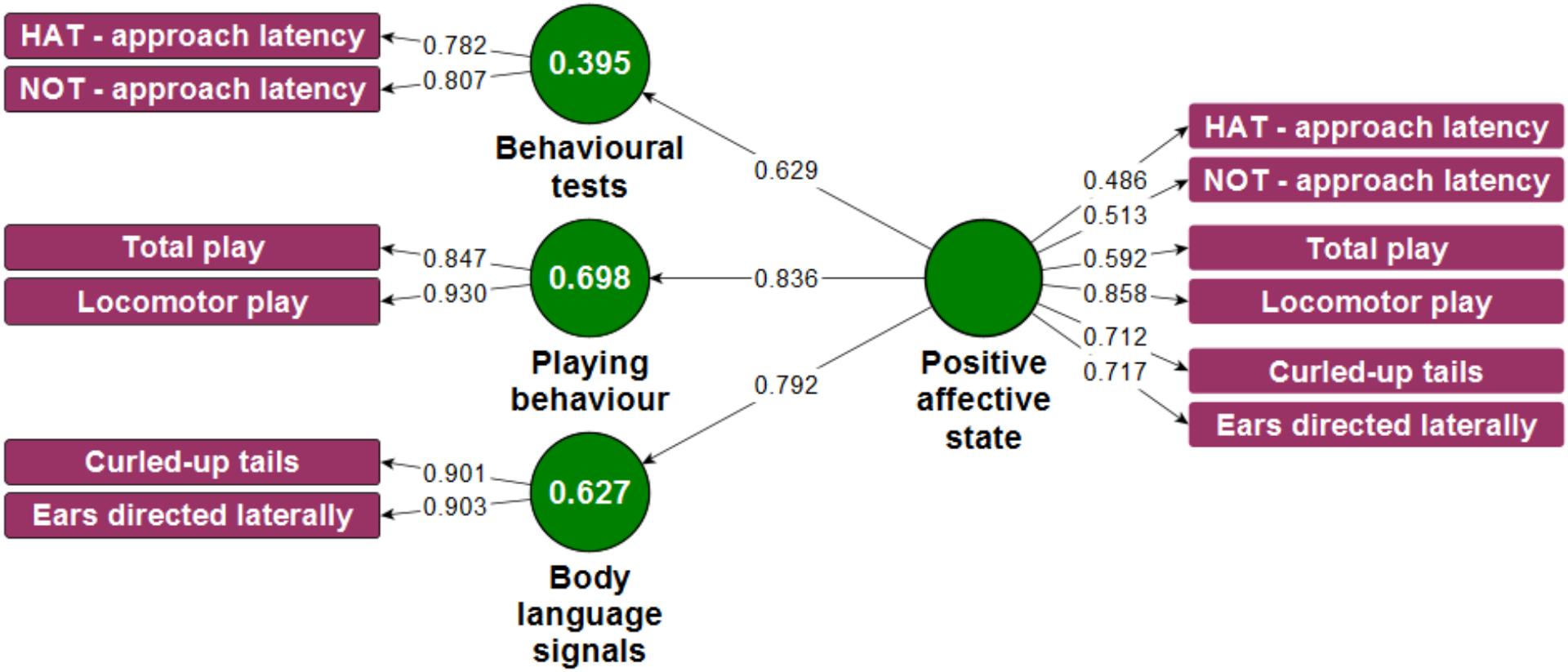

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Saliva

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Objective, reliable and valid indicators for the assessment of the affective state are needed

Affective state