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A NEW INTUITION MODEL IN THE WORKPLACE: TESTING PSYCHOMETRICS OF AN INSTRUMENT ON A MULTICULTURAL SAMPLE

VALIDITY AND RELIABILITY OF THE MEASUREMENT INSTRUMENTS GLOBAL CONFIRMATION MODEL FOR
INTUITION @ the Workplace

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Ostfalia Hochschule für angewandte Wissenschaften

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1. Introduction

1.1 International Study on Digital Trust & **Intuition @ the Workplace**

Introduction

- The study INTUITION and DIGITAL TRUST @ the Workplace is based on the EU-funded research projects of Prof. Dr. Markus Launer
 - **Digital Trust and Teamwork (DigVert)**
 - **Intuition Types: Rationality, Heuristik, Intuition and Anticipation (RHIA)**
- This study is a Follow-up study Intuition and Digital Trust @ the Workplace by Prof. Markus Launer and approx. 30 professors and researchers
- Grand Study **N = 5,579 Participants from over 18 countries.**
- This study is a Pre-Study based on the scales of Prof. Betsch (2004) and experimental discussion with cooperation partners in the City of Uelzen, Germany (Police, Fire Brigade, managers, Yoga teachers)



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1. Introduction

1.2 Purpose of the Study

Introduction

- The purpose of this study is to **explore the validity and reliability of a newly developed model** for measuring intuition in the workplace.
- This model proposes to measure intuition in the workplace, emphasizing these **six dimensions**.
- Although the construct of rational and intuitive decision-making styles was well established in the literature, the pattern of different types of intuition and rational decision-making is a new topic and research area in the literature.



1. Introduction

1.3 Theory on Intuition

Introduction

In the management literature, there is a **research gap** in empirically testing different intuitive decision-making styles simultaneously to verify how they interact.

The proposed basic decision-making principles, forming the intuition model are

- Rational Decisions
- Unconscious Intuition



Lots of literature comparing
deliberation and intuition

According to Thorsten Pachura, Melanie Spaar (2015),
Domain-specific preferences for intuition and deliberation
in decision making:

- Planning
- Knowing
- Spontaneous intuition



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- Unconscious Intuition
- Emotional Intuition



Lots of literature in neurology
and popular books

According to Thorsten Pachura, Melanie Spaar (2015),
Domain-specific preferences for intuition and deliberation
in decision making:

- Affective intuition



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- Rational Decisions
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- Emotional Intuition
- Fast heuristic Decisions



Lots of literature on experiments

Mainly based publications on heuristics by
Gigerenzer, Todd, Kahneman, Hertwig, Pachur
and others



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The proposed basic decision-making principles, forming the intuition model are

- Rational Decisions
- Unconscious Intuition
- Emotional Intuition
- Fast heuristic Decisions
- Slow Unconscious Thoughts



Limited literature on experiments

Mainly based on Dijksterhuis



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- Rational Decisions
- Unconscious Intuition
- Emotional Intuition
- Fast heuristic Decisions
- Slow Unconscious Thoughts
- Anticipation / Prä-Cognition



Lots of literature on PSI and other non-psychological articles

Mainly based on Bem, Jeffrey (1998), Richards, Davis, Togayck
→ AEI „Sheep Goat“ Scales



2. Development of a Comprehensive Intuition Model

2.1 Assembling different Intuition Types

38. Please choose the level of your agreement with the following statements using the scales below.

I tend to be a rational thinker.	<input type="range"/>
Before I make a decision, I usually think about it for quite some time.	<input type="range"/>
I think more about my plans and goals than other people.	<input type="range"/>
I think first before I act.	<input type="range"/>
I prefer to make elaborate plans rather than leave anything to chance.	<input type="range"/>
I am an intuitive individual.	<input type="range"/>
If I am supposed to determine whom I can trust, I make intuition-driven decisions.	<input type="range"/>
Emotions play a significant role in my decision-making patterns.	<input type="range"/>
For most decisions, it makes sense to feel.	<input type="range"/>
I carefully watch my innermost feelings.	<input type="range"/>
I prefer emotional persons.	<input type="range"/>

Rational Decisions

Unconscious Intuitive Decisions

Emotional Decisions (based on feelings and emotions)

If I have to make a decision, I always sleep on it.	<input type="range"/>
I never make decisions right away, and I always wait for a while	<input type="range"/>
Before I make a decision, I first focus on doing something else	<input type="range"/>
I frequently make quick and spontaneous decisions based on my insights into humanity	<input type="range"/>
I frequently make quick and spontaneous decisions based on my life experience	<input type="range"/>
I make quick decisions by rules of thumb	<input type="range"/>
I frequently have a premonition as to what will happen.	<input type="range"/>
I can often predict emotional events	<input type="range"/>
Before the phone rings, I frequently know in advance who the caller is	<input type="range"/>
I can frequently predict the outcome of a transaction	<input type="range"/>

Slow Unconscious Thinking

Quick Heuristic Decisions

Anticipation / Prä-cognition



2. Development of a Comprehensive Intuition Model

2.2 Methodology

- The sample was from a global study with **employees from different industries and about 30 countries worldwide**.
- An electronic questionnaire was used to collect data with a snowball sampling method through the international personal network of **30 professors and researchers**.
- Following the European data protection rules, the voluntariness and confidentiality were used to invite individuals to participate.
- The online questionnaire was developed in English and then translated in to **12 different languages** (Simplified Chinese, Traditional Chinese, Japanese, Spanish, Portuguese, Vietnamese, German, Russian, Polish, Romanian, Slovenian, and Thai language) with using the translation and back translation method by bilingual field experts (professors and post Ph.D.).



2. Development of a Comprehensive Intuition Model

2.2 Methodology

- Participants of the research were **5,574 employees working in 43 different industries from over 30 countries** from the research project.
- Gender distribution was 41.2% female, 8.4% LGBT-Q, and 50.3% male.
- Of the professional experiences of participants, 9.3% were less than one year, 19.7% were 1 to 3 years, 40.3% were 4 to 10 years, 18% were 11-20 years, 6.6% were 21 to 30 years, 1.3 % were 31 to 40 years, and 0.3% were more than 40 years.
- The employment status was mostly permanent (85.8%).



2. Development of a Comprehensive Intuition Model

2.2 Methodology

- The questionnaire consists of items from Preference for **Intuition and Deliberation (PID)** construct taken from Betsch (2004), and also items constructed on measuring four different types of intuition namely emotional, unconscious, quick, and anticipation.
- The different types intuition items were developed through **consulting experts in the field**. The appearance and relevance of the domain were evaluated for the **face and content validity by conducting face-to-face interviews**.
- For testing the **validity and reliability of the instruments**, **explanatory and confirmatory analyses and also internal consistencies were conducted**.



3. Results

3.1 The construct validation of rational and intuition styles

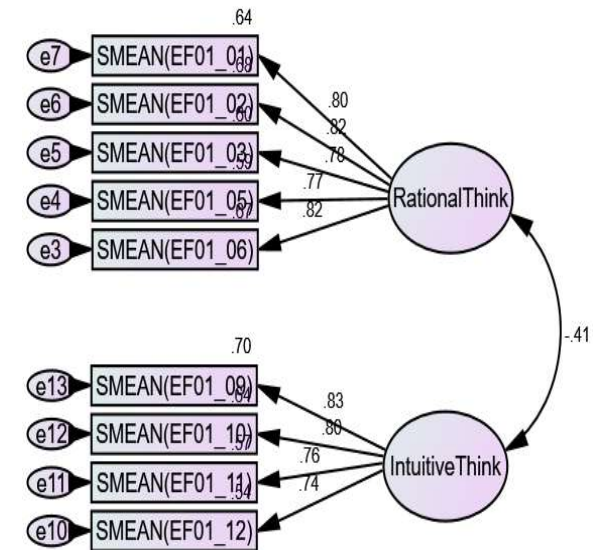
- The **PID is a validated and confirmed instrument** for measuring the differences of perceptions in different cultures.
- The result of EFA indicated that 11 items loaded on two factors with explaining 66.2% of the construct (factor loadings ranged from .69 to .82 for intuition and from .80 to .85 for deliberation or rational).
- We have used **Confirmatory Factor Analysis (CFA)** for testing the **two-factorial construct of PID** in our sample.



3. Results

3.1 The construct validation of rational and intuition styles

	n	NOIs	FLs	X ²	df	X ² /df	TLI	CFI	RMSEA	RMR
Two-factorial PID	5574	11	from .18 to .83	6096.16	64	95.2	.79	.83	.130	.144
Two-factorial PID modified	5574	9	from .74 to .83	275.35	26	10.6	.99	.99	.041	.028
Two-factorial PID modified	Random sample 1 (n=1862)	9	from .72 to .86	113.55	26	4.3	.99	.99	.043	.030
Two-factorial PID modified	Random sample 1 (n=1825)	9	from .74 to .84	101.67	26	3.9	.99	.99	.040	.031
Two-factorial PID modified	Random sample 3 (n=1812)	9	from .73 to .83	117.79	26	4.5	.99	.99	.044	.033





3. Results

3.2 The construct validation of rational and different types of intuition styles

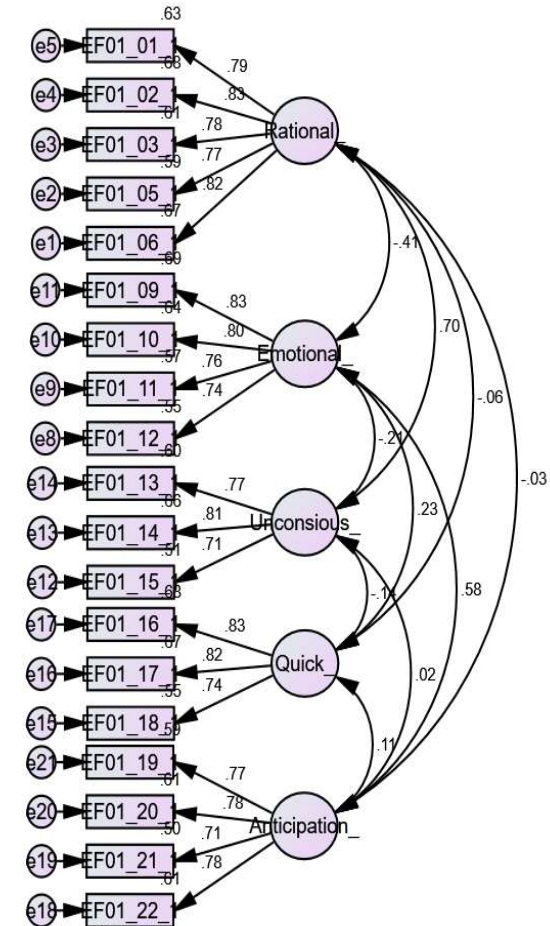
- After confirming the two-factorial PID, we have tested the **structural patterns** of emotional, quick heuristic, unconscious, and anticipation decision-making styles with rational decision-making style.
- The modified version of the construct **confirmed the fit of five construct of four types of intuition** and rational decision-making.
- We also tested the **modified and confirmed factorial structure** on the same three random subsamples selected from the total sample to increase the generalizability.



3. Results

3.2 The construct validation of rational and different types of intuition styles

	n	NOI	FL	X ²	df	X ² / df	TLI	CFI	RMSEA	RMR
Five factor structure	5574	19	from .71 to .83	1128.41	142	7.9	.98	.98	.035	.026
Five factor structure modified	5574	14	from .74 to .83	341.21	67	5.0	.99	.99	.027	.020
Five factor structure modified	Random sample 1 (n=1862)	14	from .73 to .84	172.13	67	2.5	.99	.99	.029	.021
Five factor structure modified	Random sample 1 (n=1825)	14	from .74 to .83	125.31	67	1.8	.99	.99	.021	.022
Five factor structure modified	Random sample 3 (n=1812)	14	from .73 to .83	127.03	67	1.9	.99	.99	.021	.022





3. Results

3.2 The construct validation of rational and different types of intuition styles

- We then calculated Cronbach's Alpha coefficients of confirmed factors for determining the internal consistencies.
- The coefficients of the subdimensions of the modified five-factor structure ranged from .76 to .85 for the total sample and all random samples.
- These **results presented reliability of the multifactorial structure.**

	(1)	(2)	(3)	(4)
1.Rational	1			
2.Emotional	-.336**	1		
3.Unconscious	.591**	-.171**	1	
4.Quick	-.039**	.190**	-.134**	1
5.Anticipation	-.030*	.479**	.006	.077**

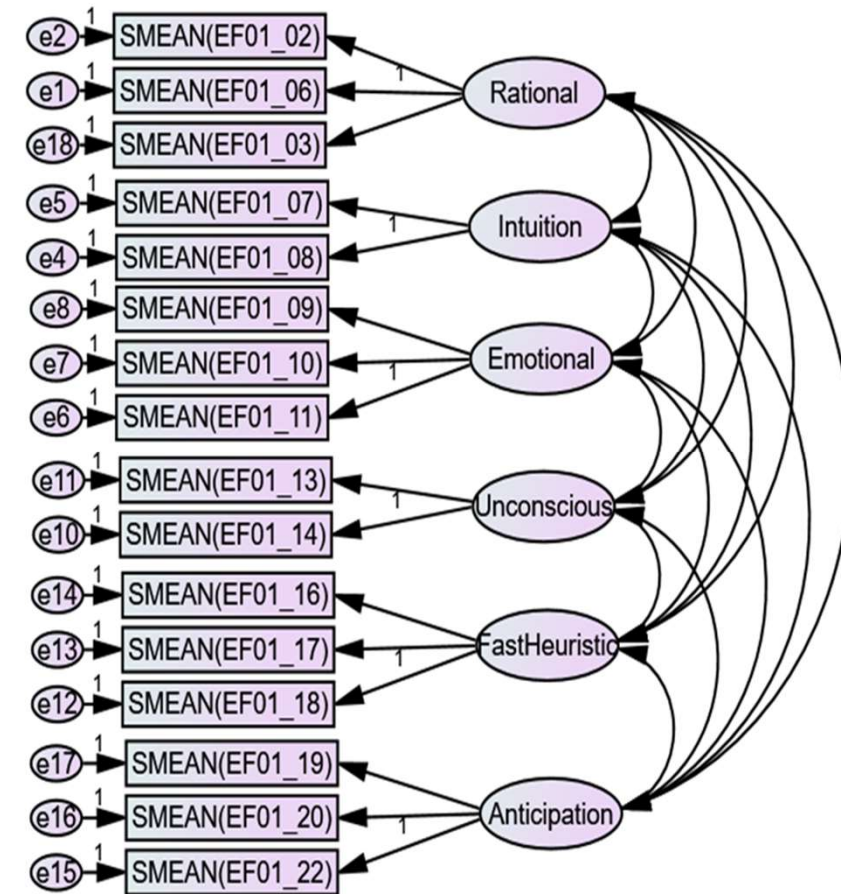


3. Results

3.3 The complete model

Validation of the complete Intuition Model

- Confirmed factorial structure of multidimensional decision-making styles
 - Rational Decisions
 - Unconscious Intuition
 - Emotional Intuition
 - Fast heuristic Decisions
 - Slow Unconscious Thoughts
 - Anticipation / Prä-Cognition





3. Results

3.4 Discussion

- Explanatory and confirmatory factorial constructs have confirmed the fit of six different thinking style dimensions.
- After excluding inconsistent items, a total of 16 questions described six dimensions.
- The factorial construct also ensured the reliability of the instrument by providing higher-level internal consistencies.
- All the findings have demonstrated that the proposed instrument is valid and reliable for testing multidimensional intuition thinking styles in the workplace.

