

# Consumer Confidence and Psychological Variables

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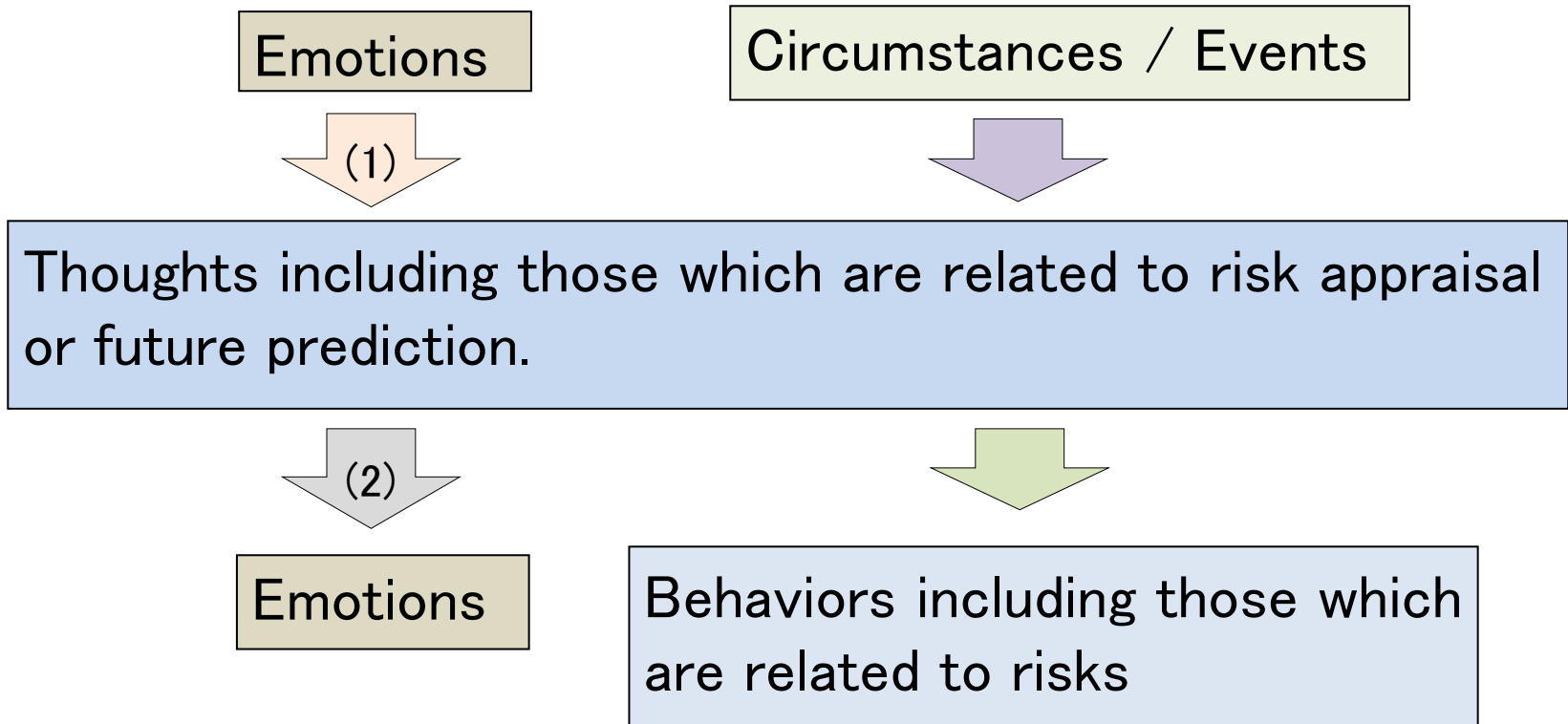
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# Research Interest

- Are economic phenomenon influenced by psychological factors?
- For example, are booms and busts influenced by psychological factors such as emotions which may be contagious?
- If so, can psychological interventions mitigate the negative impact of busts?

# Relationship between Emotions and Thoughts



(1) •••• Risk-as-feelings Hypothesis

(2) •••• Basic Idea of Cognitive Behavioral Therapy

# Risk-as-Feelings Hypothesis (Loewenstein et al., 2001)

People's risk appraisal and decision making are affected by feelings (for review, see Lerner et al., 2014).

- These feelings include integral emotions (feelings people experience when making decisions)
- These feelings include incidental emotions (feelings people happen to have and are not related to the decision or appraisal).
- These feelings include emotional traits such as trait anxiety (tendency to feel a particular feeling).

# Examples from Economic Related Matters

- Stock returns are related to the amount of daylight, suggesting that SAD (seasonal affective disorder) influence them (Kamstra, Kramer, & Levi, 2003).
- People who are induced to feel negative emotions such as anxiety tend to prefer to buy bonds and avoid buying stocks, suggesting that anxiety causes them to become more risk averse (Kuhnen and Knutson, 2011) .
- Trait anger leads to risky economic decisions and trait anxiety leads to conservative economic decisions (Gambetti and Giusberti, 2012).

# Basic Idea of Cognitive Behavioral Therapy

Feelings are influenced (caused, determined) by thoughts.  
These thoughts are often distorted (Beck, 1979; Burns, 1980).

Circumstances / Events

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graph TD; A[Circumstances / Events] --> B["Pessimistic thinking: 'I will be unemployed, and that will make my life miserable.'"]; B --> C["Emotion: Anxiety, depression"]; B --> D["Behavior: Reducing consumption"];
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Pessimistic thinking: “I will be unemployed, and that will make my life miserable.”

Emotion: Anxiety, depression

Behavior: Reducing consumption

## Other Psychological Factors that May Affect the Economy

- Oscillation between optimism and pessimism is one of the causes of business cycles (Beaudry et al., 2011; Chhaochharia et al., 2012; De Gwauwe, 2011; Milani, 2011).
- General trust promotes economic growth (Bjørnskov, 2012; Horváth, 2013) and macroeconomic stability (Sangnier, 2013).
- Young adults and adolescents who exhibited high level of life satisfaction or positive affect tended to earn higher incomes in their later lives (De Neve and Oswald, 2012) .

# Design of the Present Study (Sekizawa, Yoshitake, & Goto, 2015)

This study is for (1) examining the effect of positive psychology intervention and (2) knowing more about the relationship between consumer confidence and psychological variables.

Time 1

6,553 people who applied for a psychological intervention were assessed.

1  
month

1,000 people were selected. 500 people wrote three good things (TGT) twice a week for 4 weeks. Control group (n=500) wrote three past things.

Time 2

517 people remained and were assessed again.

1  
month

Time 3

478 people remained and were assessed again.



# Consumer Confidence and the Economy

We used the consumer confidence index (CCI) as a proxy for level of economic activities and judgments.

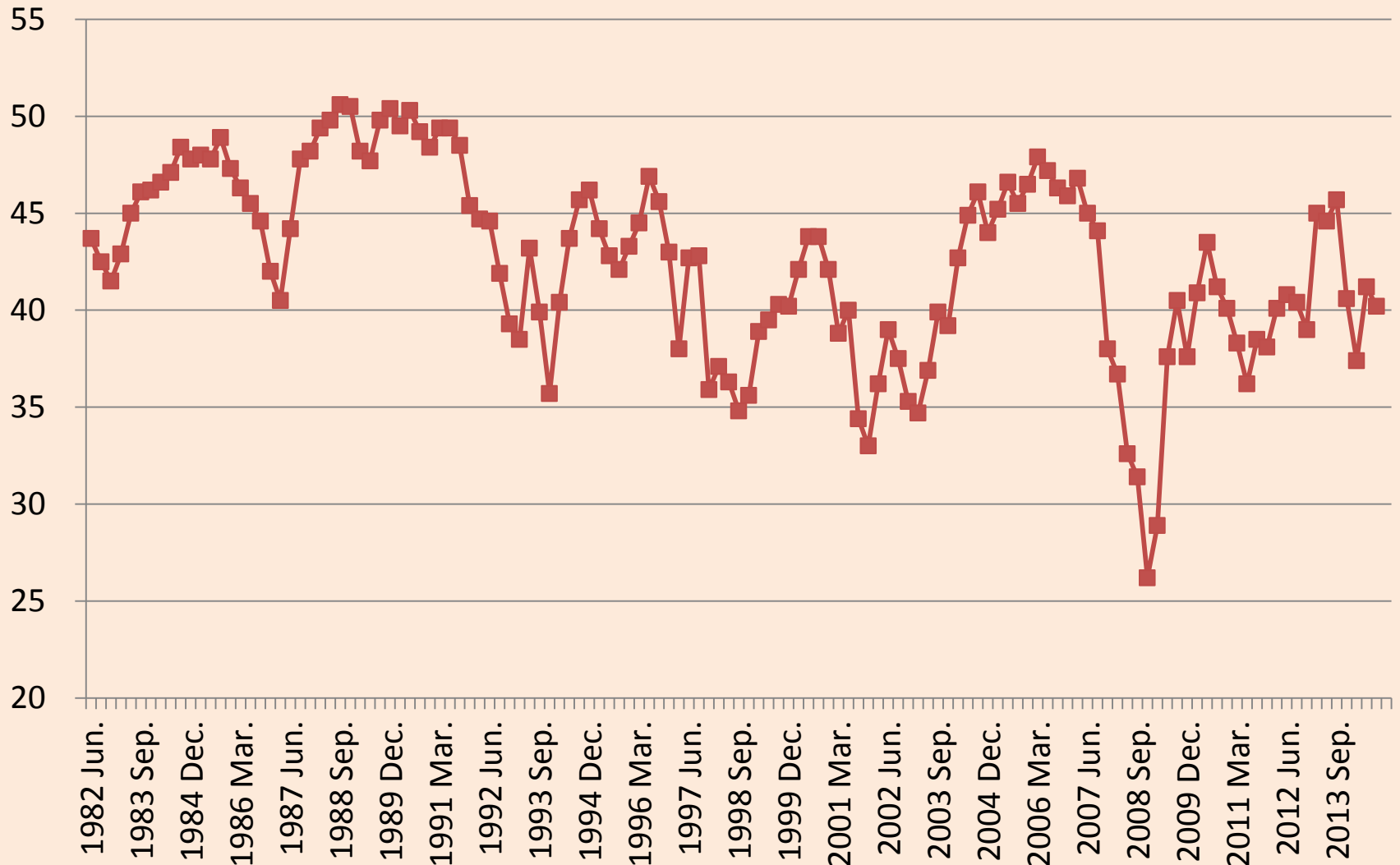
- Consumer confidence index is a predictor of consumer spending (Dées & Brinca, 2013; Ludvigson, 2004; Eppright, Arguea, & Huth, 1998) and GDP (Utaka, 2003; Utaka, 2014).
- The changes in consumer confidence Granger-cause the stock returns (Hsu, Lin, & Wu, 2014).
- There is a negative causality between consumer sentiment and the unemployment rate both in the short term and long term (Mandal & McCollum, 2013).

# Outcome Measures 1 (CCI)

- The questions to calculate the consumer confidence index (CCI) were the same as used in the monthly survey by the Cabinet Office of Japan (Cabinet Office, 2014A).
- The questions are about overall livelihood, income growth, employment, and willingness to buy durable goods for the next six months.
- Each respondent rates the current degree of each of these questions from 1 (improve) to 5 (worsen). The answers of 1 (improve), 2 (improve slightly), 3 (neutral), 4 (worsen slightly), and 5 (worsen) are converted to 100, 75, 50, 25, and 0 respectively. For the CCI as a whole, the average of the converted scores of the four questions is used.
- For example, if a respondent chooses 3 (neutral) for all four questions, his/her CCI score is 50.

# Consumer Confidence Index (CCI) of Japan

(Households of two or more persons, original series)



(Source) Cabinet Office

## Outcome Measures 2

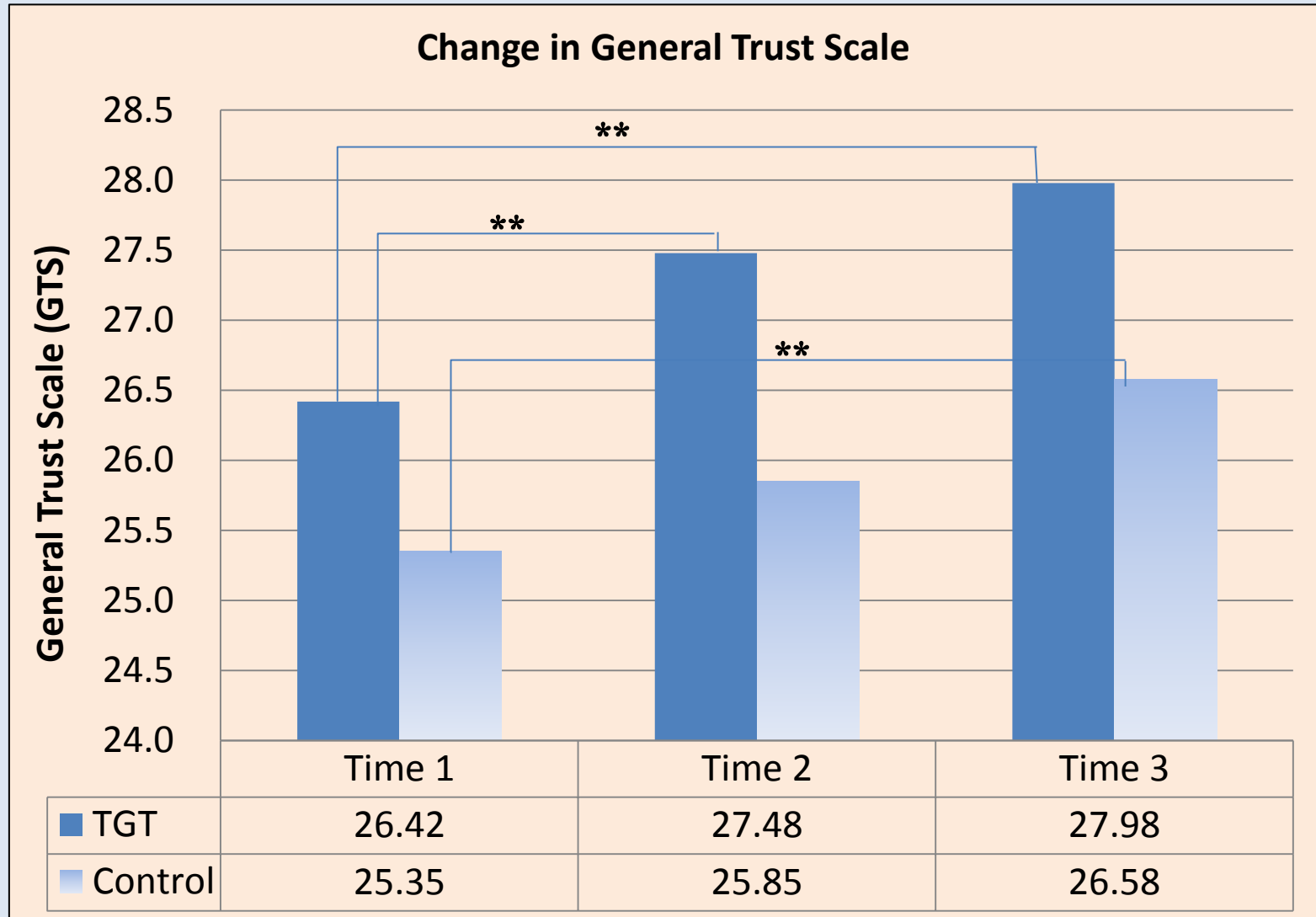
- Depression was measured by The Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977).
- Optimism was measured by The Life Orientation Test-Revised (LOT-R) (Scheier, Carver, & Bridges, 1994).
- Life satisfaction was measured by The Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985).
- General trust was measured by The General Trust Scale (GTS) (Yamagishi & Yamagishi, 1994).
- Positive affect (PA) and negative affect (NA) were measured using the mood ratings mentioned in Thomas and Diener (1990).

# Methodology of Analyses

- Repeated Measures multivariate analysis of variances (MANOVAs) were used to check the differences between Time 1, Time 2, and Time 3.
- OLS regression was used to estimate the relationship between the CCI and psychological variables for the cross-sectional data of Time 1.
- Fixed effects model was used to analyze the panel data from Time 1 to Time 3.

# Results

There were no significant differences between the three time points and groups in all psychological variables except general trust, suggesting that this psychological intervention had a small effect.



\*\* $p < .01$ , \* $p < .05$

# The Consumer Confidence Index (CCI) and Psychological Variables

Dependent Variable: CCI	(1)	(2)	(3)	(4)
Depression (CES-D)	-0.082*	-0.369**	-0.201*	-0.096
	(0.033)	(0.088)	(0.085)	(0.090)
Optimism (LOT-R)	0.721**		0.538*	0.444*
	(0.072)		(0.210)	(0.207)
Life Satisfaction (SWLS)	0.315**		0.422**	0.325*
	(0.053)		(0.158)	(0.155)
General Trust (GTS)	0.214**		0.570**	0.534**
	(0.041)		(0.142)	(0.150)
Positive Affect (PA)	0.613**			0.295
	(0.079)			(0.196)
Negative Affect (NA)	-0.130**			-0.214*
	(0.049)			(0.105)
Number of obs.	6,553	1,512	1,512	1,512
Number of groups		517	517	517

Notes: \*\* p<0.01, \* p<0.05, + p<0.1. Clustered standard errors are reported in parentheses.

Method of estimation: In Model 1, OLS using all the data at Time 1 was performed. In Models 2 through 4, fixed effects model was performed using data of all participants responding two or three times.

In Model 2, only CES-D among psychological variables was included in explanatory variables. In Model 3, optimism (LOT-R), life satisfaction (SWLS), general trust (GTS) were added. In Model 4, positive affect (PA) and negative affect (NA) were added.



# Relationship between Psychological Variables

	Depression	Optimism	Life Satisfaction	General Trust	Positive Affect	Negative Affect
<b>Depression (CES-D)</b>		-0.02 (0.015)	-0.040* (0.018)	-0.016 (0.032)	-0.121** (0.021)	0.243** (0.026)
<b>Optimism (LOT-R)</b>	-0.118 (0.087)		0.224** (0.046)	0.029 (0.065)	0.232** (0.043)	-0.033 (0.057)
<b>Life Satisfaction (SWLS)</b>	-0.150* (0.069)	0.146** (0.030)		0.188** (0.051)	0.134** (0.034)	-0.190** (0.048)
<b>General Trust (GTS)</b>	-0.031 (0.062)	0.01 (0.022)	0.096** (0.026)		0.108** (0.034)	0.028 (0.038)
<b>Positive Affect (PA)</b>	-0.538** (0.095)	0.178** (0.033)	0.157** (0.039)	0.249** (0.077)		-0.218** (0.055)
<b>Negative Affect (NA)</b>	0.482** (0.049)	-0.011 (0.020)	-0.100** (0.025)	0.029 (0.039)	-0.097** (0.026)	
<b>Consumer Confidence (CCI)</b>	-0.018 (0.017)	0.015* (0.007)	0.016* (0.008)	0.053** (0.016)	0.013 (0.009)	-0.021* (0.010)
<b>Number of obs.</b>	1,512	1,512	1,512	1,512	1,512	1,512
<b>Number of groups</b>	517	517	517	517	517	517

Notes: \*\* p<0.01, \* p<0.05, + p<0.1.

Method of estimation: In all models, fixed effects model was performed using data of all participants responding two or three times. Clustered standard errors are reported in parentheses.

# Significance of the Present Study 1

- The present study indicates that psychological variables are associated with consumer confidence, which is an economic indicator predicting GDP, consumer spending, unemployment rate, and stock returns. This result suggests that psychological factors may have some impact on the real economy.
- The present study shows the possibility that some type of psychological interventions might boost the economy. Further exploration by using effective psychological interventions such as cognitive behavioral therapy and positive psychology interventions is expected.

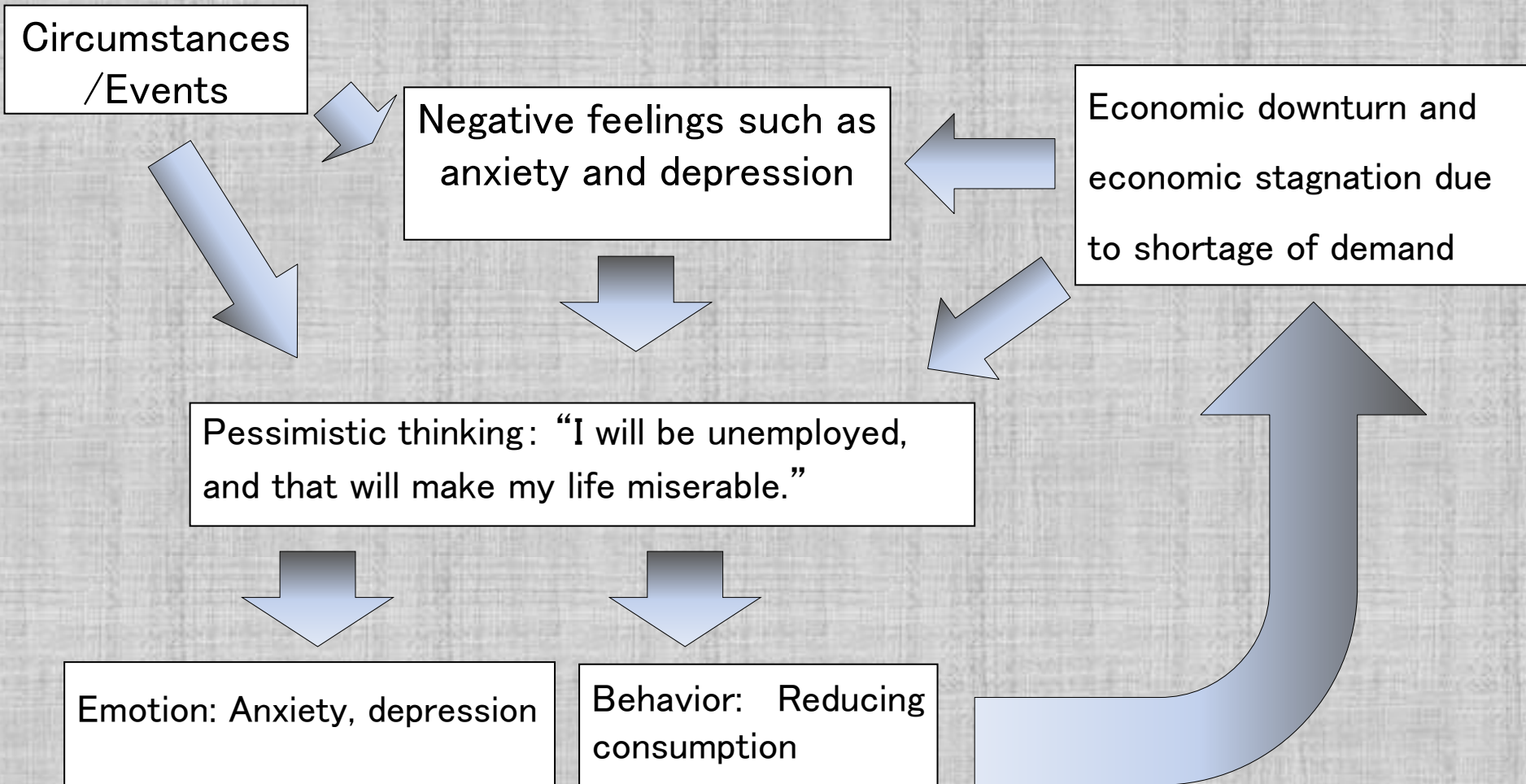
## Significance of the Present Study 2

- A significant association between consumer confidence and general trust was shown. The possibility that general trust may be enhanced by psychological intervention was also shown. A high level of trust leads to economic growth (Dearmon & Grier, 2009) and a low level of confidence may lead to worsened economic conditions (Utaka, 2014). Further exploration on the relationship among general trust, consumer confidence, and economy is expected.

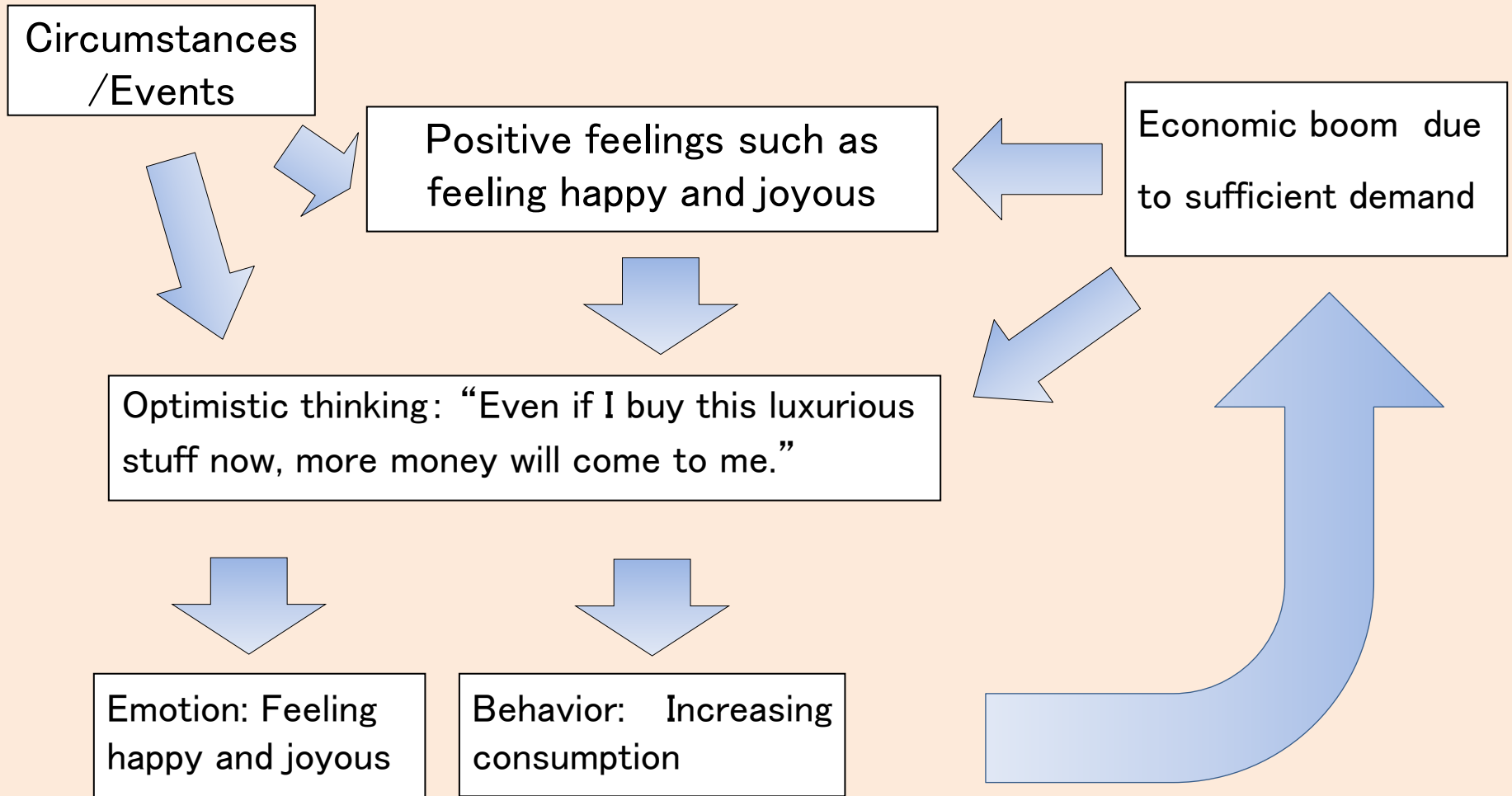
# Limitation of the Study

- A causal relationship between the CCI and the psychological variables is not clear from the present study. Psychological variables may have affected the CCI, but the real causal direction may be the opposite.
- The participants in the present study were recruited from people registered on a research company's website to be monitors for surveys conducted by the company; thus, they may not represent typical Japanese people.
- Third, the data in the present study were that of those who participated in a psychological intervention and were not observation of natural transition.
- The interval of the time points of estimation was approximately one month. This may be too short to observe major changes. The number of waves of the present study is too small to reach a conclusion.

# Psychological Explanation of Recession



# Psychological Explanation of Boom



Even if the structure of society is exactly the same, the society can be both heaven and hell depending on the mentality and attitude of the people living there.

----Zen Talks by Toshiaki Sato

- Is this applicable to economic heaven (boom) and economic hell (recession)? That is the question.
- Further exploration in this direction is important in that boosting confidence and trust may be a key factor in overcoming and/or avoiding economic stagnation such as the one Japan suffered from for almost two decades.

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