

# The application of Technology Acceptance Model and Theory of Reasoned Action on the Molecular Gastronomy Message

Dr. Hsin-kuang Chi, Nanhua University, Taiwan

## ABSTRACT

*As the technology knowledge applications rapidly grow, the public judgments on molecular gastronomy message are more different for everyone. This is because the public's social-economical background on molecular gastronomy message absorptions are different that creates individual's value and attitude differences on understanding and participation in the science and technology knowledge. Therefore, the purpose of the study is to explore the public judgments of molecular gastronomy by applying Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA) and attempts to use human interaction behavior and science and technology to discuss how to enhance the public judgments on molecular gastronomy messages and behavioral intention. The results shows that perceived usefulness is more important than perceived ease of use; perceived usefulness has higher positive effect on attitude toward; attitude toward using act as a mediator between perceived ease of use and behavioral intention. Perceived usefulness has a partial mediation effect between perceived ease of use and attitude toward using.*

**Keywords:** Molecular Gastronomy, Technology Acceptance Model, Theory of Reasoned Action

## INTRODUCTION

Cooking plays a very important role in people's daily life. Cooking can be used in the scientific research form the viewpoint of science and technology. In recent years, cooking has applied chemical or physical theories to make a change on shapes and tastes of food. The kind of using scientific theory in the innovative cooking methods is called Molecular Gastronomy. The attraction of molecular gastronomy lies in its using scientific theories to understand chemical and physical characteristics in every cooking process. The method can be considered as a fulfillment of science and technology but it still needs to rely on researchers and food industry to build up a public recognition on the molecular gastronomy. Thus, the promotion of molecular gastronomy is to make people to apply science and technology knowledge in the daily diet and participate in its research and development. However, due to the diversification of science and technology knowledge, the requirements for the public to judge molecular gastronomy are very different. That is, because people come from different culture and background, their ability to absorb the knowledge and message of molecular gastronomy will be different. It creates the public different value and attitude to participate in molecular gastronomy reasoning. This complicated phenomenon gives a discussion space on molecular gastronomy research. Therefore, this study attempts to discuss how to promote the public judgment on molecular gastronomy message and behavioral intention from the perspectives of human interaction and information technology, by utilizing Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA).

## LITERATURE REVIEW

### **Molecular Gastronomy**

The term molecular gastronomy was coined in 1992 by Hungarian physicist Nicholas Kurti and French physical chemist Hervé This. In recently years, molecular gastronomy has become a shining and glittering trend in the western cuisine world, and almost every cuisine experts have paid their attention and curiosity to this new technology. Molecular gastronomy is a scientific discipline that studies the physical and chemical processes that occur while cooking (This, 2006). In addition, molecular gastronomy seeks to investigate and explain the chemical reasons behind the transformation of ingredients, as well as the social, artistic and technical components of culinary and gastronomic

phenomena in general. There are many branches of food science, all of which study different aspects of food such as safety, microbiology, preservation, chemistry, engineering, physics and the like. Until the advent of molecular gastronomy, there was no formal scientific discipline dedicated to studying the processes in regular cooking as done in the home or in a restaurant. The aforementioned have mostly been concerned with industrial food production and while the disciplines may overlap with each other to varying degrees, they are considered separate areas of investigation (Wikipedia, 2009).

The research results of molecular gastronomy can overturn, decompose, and reorganize the traditional cooking methods and give foods with a brand new smell, taste, outlook, touch and joyful experience. For example, mashed peas ball usually is a mashed shape. Unless a coagulating agent is added, it can not turn into a ball shape. However, molecular gastronomy can analyze the molecular traits of the mashed peas and find a suitable temperature. When mashed peas put it in the water under a fixed temperature, it will change its physical traits. Therefore, the mashed pea ball can form a film on its surface without a coagulating agent. When consumers eat this mashed pea ball, they will respond with doubts at first and then taste with surprises. Another example is carrot caviar. When carrot juice is extrude from a needle and drops into calcium chloride water, it will form a jelly film on its surface. It looks very like a salmon roe. After thirty seconds, chef will take it out and use clean water to wash the remaining calcium chloride. Then, chef seasons it with sea salt, passion fruit juice and olive oil and the puts it on a white enamel spoon. When people eat carrot caviar, the film will break and release the juice. The surprise is that it looks like a salmon roe but when it put into mouth, it becomes carrot juice (Chinatimes, 2009).

### **Molecular Gastronomy Message Judgment**

The public judgment on science and technology message is always a research direction for science and technology researchers. Especially, molecular gastronomy is a newly science and technology which applied chemical and physical theories on cooking technology. Thus, it is necessary and important to examine and study the public judgment on molecular gastronomy message. However, because people have different culture and background, their ability to absorb the knowledge and message of molecular gastronomy will be different. It creates the public different value and attitude to participate in molecular gastronomy reasoning. Therefore, this study attempts to discuss how to promote the public judgment on molecular gastronomy message and behavioral intention from the perspectives of human interaction and information technology. Davis (1989) proposed Technology Acceptance Model (TAM) by simplifying Theory of Reasoned Action (TRA). TAM uses perceived ease of use and perceived usefulness to measure behavioral attitude without considering subjective norm. TAM is suitable for science and technology use behavior and TRA can apply to any study related to human specific behavior (Adam, Nelson & Todd, 1992; Agarwal & Prasad, 1999; Venkatesh & Speier, 1999). Both models are extensively used in the study of consumers' technology adoption behavior.

### **Theory of Reasoned Action**

Theory of Reasoned Action was proposed by Fishbein and Ajzen in 1975. The basic assumption of TRA is whether a person to perform a specific behavior is based on his or her own will which is controlled under a systematic thinking. The theory considers that under a certain extent an individual behavior can be reasonably judged from his or her behavioral intention which is decided by behavioral attitude and subjective norm. Behavioral intention (BI) is to measure the extent of the behavior that people is indented to perform a specific behavior. A person's attitude toward a behavior is determined by his or her salient beliefs about consequences of performing the behavior multiplied by evaluation of those consequences, and beliefs are defined as the individual's subjective probability that performing the target behavior will result in consequence (Davis, Bagozzi, & Warshaw, 1989). Subjective norm (SN) refers to a person's perception that most people who are important to him think he should or should not perform the behavior in question (Fishbein & Ajzen, 1975). Subject norm is the perception level that a person feel that his or her important influencers expect that he or she to adopt a new system. Hence, in the TRA model, behavioral intention is affected by two factors. One is an individual attitude toward performing a specific behavior, and second is subjective norm which is a person decision that will be affected by external environment.

## **Technology Acceptance Model**

Base on revisions of TRA, Davis et al. (1989) proposed Technology Acceptance Model (TAM). This model is particularly developed from the human technology adoption behavior from the viewpoints of users' recognition and affection to examine the relationship between users and technology. Its purpose is to construct an information technology acceptance model to understand users' technology acceptance decision factors in order to explain users' behavior. In addition, Davis (1989) and Davis et al. (1989) suggested that users will produce a spontaneous decision to accept a new information technology based on two beliefs (1) perceived usefulness (PU) which means that a prospective user's subjective probability that using a specific application system will increase his or her job performance (Davis, 1986; Davis, 1989; Davis et al., 1989), and (2) perceived ease of use (PEOU) which refers to the degree to which a prospective user expects that target system to be free of effort (Davis, 1986; Davis, 1989; Davis et al., 1989). PU is a user's subjective view that believes a technology will improve and help job performance now and in the future. When a user has higher PU and PEOU to a certain information technology, his or her acceptance attitude toward that technology will be more positive and PEOU will affect PE. Moreover, PEOU and PU are considered as two external variables to influence users' technology acceptance and these two factors will affect users' attitude and behavioral intention to produce an actual behavior.

## **Technology Acceptance Model and Theory of Reasoned Action**

The differences of between TAM and TRA rest with that TAM introduces PEOU and PU to explain attitude and TAM does not consider subjective norm in TRA. However, in addition to TAM, if a researchers can also adopt TRA's subjective norm to examine the information acceptance behavior in the research, TAM can obtain better explanation power (Chau & Hu, 2001; Venkatesh, Morris, Davis & Davis, 2003). It is because subjective norm can be deemed as an important factor in the technology acceptance behavior. Besides, TAM and TRA both think that user's attitude will influence behavioral intention and attitude is mainly decided by PEOU and PU. Meanwhile, Davis (1989) maintained that PEOU will be positively affected PU, and Webster and Martocchio (1993), Teo, Lim and Lai (1999) concluded that PEOU and PU hold a mediating effect on attitude. Based on the literature reviews on above, the study proposes hypotheses as followings:

- H1: An individual perceived ease of use will be positively and significantly affected to his or her attitude on molecular gastronomy.
- H2: An individual perceived usefulness will be positively and significantly affected to his or her attitude on molecular gastronomy.
- H3: An individual perceived ease of use will be positively and significantly affected to his or her perceived usefulness on molecular gastronomy.
- H4: An individual attitude will be positively and significantly affected to his or her behavioral intention on molecular gastronomy.
- H5: An individual subjective norm will be positively and significantly affected to his or her behavioral intention on molecular gastronomy.
- H6: An individual perceived usefulness is a mediator between perceived ease of use and attitude.

## **RESEARCH METHODOLOGY**

### **Research Framework**

In the research of consumer adoption behavior, TAM introduces PEOU and PU to explain attitude, and TRA uses subjective norm and attitude to examine behavioral intention. TAM and TRA both think that user's attitude will influence behavioral intention. PEOU will be positively affected PU, and PU is a mediator between PEOU and attitude. This study combines above mentioned two models and builds the public attitude on molecular gastronomy message, subjective norm (SN), attitude, PEOU and PU into research framework to explain the public judgment on molecular gastronomy message and behavioral intention (BI).

## Research Design

The study adopts two stages research design. The first stage uses intensive focus group qualitative research. The second stage dispatches the official research questionnaire after synthesizing the operational definition of molecular gastronomy message acceptance model and modifying the questionnaire. This stage also includes a questionnaire pretest to subjects selecting from target population, in order to revise any unclear or unrepresentative question. On the first stage, the study interviewed twenty students and teachers from food and beverage department and used these data to adjust research framework in order to examine internal and external validity and modify research hypotheses, question items and overall research questionnaire structure. In the meantime, students had to assess the appropriateness of each dimension name and research item and gave their opinion on the choice of words in order to make the question is fully clear to the repliers. The research operational definition is shown on Table 1.

**Table 1: The Research Operational Definition of Molecular Gastronomy Message Acceptance Model**

Dimension	Operational definition	Sources
Perceived ease of use	Consumers consider that molecular gastronomy can make food with brand new smell, taste and surprising responses. There are five measurement questions.	Davis (1989) ; Davis et al., (1989)
Perceived usefulness	Consumers consider that cooking with molecular gastronomy is useful for chefs. There are three measurement questions.	Davis (1989); Davis et al., (1989)
Consumer attitude	Consumers hold a positive view to molecular gastronomy including their positive recognition on this technology. There are four measurement questions.	Ajzen (1985,1988,1991); Fishbein & Ajzen (1975); Venkatesh & Davis (2000)
Subjective norm	An individual may perform specific behavior to accept molecular gastronomy under certain social pressure. There are four measurement questions.	Ajzen(1985, 1988, 1991); Fishbein & Ajzen (1980); Venkatesh & Davis (2000)
Behavioral intention	The probability of an individual performs certain behavior. There are three measurement questions.	Ajzen(1985, 1988, 1991); Fishbein & Ajzen (1975)

## Instrument and Sample

The study performed a pretest by purposive sampling and dispatched 100 copies of questionnaires to students in food and beverage department in a university in southern Taiwan. Then, the study adopted item analysis and proceeded with critical ratio (CR) judgment to evaluate identification level of measurement items. The study also executed a reliability analysis to examine the correlation of each measurement item and overall scale. The results of item analysis are as show in Table 2. The total pretest score of all subjects is divided into for equal portions from high to low. Then, the study compared the highest 25% with the lowest 25% to find the score differences among each item and proceeded with a significant test. If CR is over 3.320 and p value is higher the 0.05, it indicates that the measurement items have good identification level. Meanwhile, Chiu (2002) suggested that coefficient of correlation of item measurement and overall measurement is better over 0.30. The results of all coefficients of correlation are over 0.328 and Cronbach's  $\alpha$  is 0.840. It signifies that the homogeneity among measurement items and overall measurement scale is high. After item analysis and correlation analysis, no measurement item was deleted.

**Table 2. Critical Ratio and Corrected item-total correlation of Measurement Scale**

Dimension	Items	Critical ratio (CR)	Corrected item-total correlation
Perceived usefulness	1 I believe that molecular gastronomy technology can create a brand new smell and taste food.	5.357	0.609
	2 I believe that molecular gastronomy technology can produce tasty food and receive consumers' surprising responses.	6.911	0.676
	3 I believe that molecular gastronomy technology is very particular on food's taste.	5.413	0.602
	4 I believe that molecular gastronomy technology is very	7.493	0.698

	particular on food's seasoning. 5 I believe that food seasoned by molecular gastronomy technology is very delicious.	9.666	0.751
Perceived ease of use	6 I consider that it is easy to use molecular gastronomy for food's seasoning.	3.320	0.328
	7 I consider that it is easy to use molecular gastronomy for food's cooking.	4.088	0.423
	8 I consider that it is easy to use molecular gastronomy technology.	3.584	0.663
Attitude	9 I enjoy food seasoned by molecular gastronomy technology.	6.919	0.697
	10 I enjoy food cooked by molecular gastronomy technology.	6.866	0.696
	11. I enjoy food's brand new taste created by molecular gastronomy technology.	6.542	0.692
	12 I enjoy molecular gastronomy technology is particular on food's tasty	8.093	0.718
Subjective norm	13. I will taste food cooked by molecular gastronomy technology from time to time by fashion trend.	7.543	0.748
	14. Advertisements on TV, newspaper or magazine will affect me to taste food seasoned by molecular gastronomy technology	8.010	0.649
	15 An influencer's invitation will affect me to taste food seasoned by molecular gastronomy technology.	5.685	0.640
	16 I will taste food seasoned by molecular gastronomy technology if my friends and colleagues (classmates) tastes food seasoned by molecular gastronomy technology first.	5.465	0.612
Behavioral intention	17 I will invite my friends and my families to taste food seasoned by molecular gastronomy technology	6.458	0.716
	18 I will accept food cooked by molecular gastronomy technology	5.947	0.727
	19 I am willing to taste food cooked by molecular gastronomy technology.	4.248	0.692

The study adopted 7-point Likert scale and selected food courts as sampling locations. The duration for questionnaire distribution was from August 1<sup>st</sup>, 2009 to September 15<sup>th</sup>, 2009. Totally 300 questionnaires were distributed and 283 copies were returned. Excluding 26 invalid questionnaires, 257 effective questionnaires were used to data analysis. The results of factory analysis and reliability analysis were as shown in Table 3. The lowest factor loading is 0.737, Cronbach's  $\alpha$  in each dimension is higher than 0.8, and all Corrected item-total correlation in each item is higher than 0.6. The results indicate that the measure instrument has a good internal consistence. Furthermore, the explained variance in each dimension is over 64%.

**Table 3: Factor Analysis and Reliability Analysis**

Dimension	Items	Factor Loading	Cronbach's $\alpha$	Corrected item-total correlation
Perceived usefulness	1. I believe that molecular gastronomy technology can create a brand new smell and taste food.	0.809	0.861	0.684
	2. I believe that molecular gastronomy technology can produce tasty food and receive consumers' surprising responses.	0.828		0.703
	3. I believe that molecular gastronomy technology is very particular on food's taste.	0.796		0.676
	4. I believe that molecular gastronomy technology is very particular on food's seasoning.	0.838		0.731
	5. I believe that food seasoned by molecular gastronomy technology is very delicious.	0.737		0.605

Explained variance	64.405%	Eigenvalue	3.220	
Perceived ease of use	6. I consider that it is easy to use molecular gastronomy for food's seasoning.	0.918	0.926	0.819
	7. I consider that it is easy to use molecular gastronomy for food's cooking.	0.942		0.867
	8. I consider that it is easy to use molecular gastronomy technology.	0.939		0.860
Explained variance	87.082%	Eigenvalue	2.612	
Attitude	9. I enjoy food seasoned by molecular gastronomy technology.	0.871	.887	0.761
	10. I enjoy food cooked by molecular gastronomy technology.	0.890		0.792
	11. I enjoy food's brand new taste created by molecular gastronomy technology.	0.820		0.690
	12. I enjoy molecular gastronomy technology is particular on food's tasty	0.874		0.769
Explained variance	74.685%	Eigenvalue	2.987	
Subjective norm	13. Fashion trend will make me taste food cooked by molecular gastronomy technology from time to time.	0.842	0.882	0.726
	14. Advertisements on TV, newspaper or magazine will affect me to taste food seasoned by molecular gastronomy technology	0.907		0.814
	15. An influencer's invitation will affect me to taste food seasoned by molecular gastronomy technology.	0.869		0.756
	16. I will taste food seasoned by molecular gastronomy technology if my friends and colleagues (classmates) tastes food seasoned by molecular gastronomy technology first.	0.824		0.687
Explained variance	64.405%	Eigenvalue	2.967	
Behavioral Intention	17. I will invite my friends and my families to taste food seasoned by molecular gastronomy technology	0.879	0.885	0.737
	18. I will accept food cooked by molecular gastronomy technology	0.911		0.790
	19. I am willing to taste food cooked by molecular gastronomy technology.	0.918		0.807
Explained variance	81.535%	Eigenvalue	2.446	

## RESULTS ANALYSIS

The results of correlation analysis indicate that the correlation among dimensions is significant. The correlation between PU and consumer attitude is 71.9%, and SN and BI is 75.6%. In the meantime, PU has lowest mean and highest standard deviation (S.D.). It refers that the majority of repliers have different views on PU.

### Regression Analysis

In order to test hypotheses, this study built up eleven regression analysis sets to examine the research model and the mediating effect. The study used VIF as an index to identify multicollinearity. The results show that the highest VIF is 2.089, and it is far lower than suggested value, 10. Thus, there is no multicollinearity in this study. In addition, the results in model 1 show that PEOU is significantly affected to PU ( $\beta = 0.371$ ). H 3 is supported. The results in Mode 2 and Model 3 show that PEOU and PU are significantly affected to attitude respectively ( $R^2 = 0.216, 0.514$ ;  $\beta = 0.470, 0.761$ ), and control variables are insignificant. The results in model 4 show that PEOU and PU are significantly

affected to attitude individually and the influence of PEOU ( $\beta = 0.630$ ) is greater than PU ( $\beta = 0.237$ ). In the meanwhile, the adjusted  $R^2$  is 0.560. From the results of Model 2, 3, and 4, H1 and H2 are both supported. Model 5 is to inspect the influence of an individual attitude on molecular gastronomy technology behavioral intention. The results are significant ( $R^2 = 0.458$ ;  $\beta = 0.678$ ). H5 is supported.

**Table 5: Regression Analysis**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	PEOU	Attitude	Attitude	Attitude	BI	BI
Control Variables						
Gender	0.041	0.023	-0.021	-0.003	-0.087 <sup>+</sup>	-0.063
Education	0.004	-0.033	-0.066	-0.035	0.092 <sup>+</sup>	0.008
Income	-0.045	-0.039	-0.002	-0.011	0.051	0.041
D.V.						
PEOU	0.371 <sup>***</sup>	0.470 <sup>***</sup>		0.237 <sup>***</sup>		
PU			0.716 <sup>***</sup>	0.630 <sup>***</sup>		
Attitude					0.678 <sup>***</sup>	
SN						0.753 <sup>***</sup>
Max VIF	1.136	1.136	1.116	1.181	1.124	1.116
N	257	257	256	257	257	257
F-value	10.216 <sup>***</sup>	18.590 <sup>***</sup>	68.620 <sup>***</sup>	66.250 <sup>***</sup>	55.184 <sup>***</sup>	86.048
Adj.R <sup>2</sup>	0.126	0.216	0.514	0.560	0.458	0.571

Note: <sup>+</sup> $p < 0.1$ ; <sup>\*</sup> $p < 0.05$ ; <sup>\*\*</sup> $p < 0.01$ ; <sup>\*\*\*</sup> $p < 0.001$

Model 6 presents that behavioral intention is regressed with subject norm. The result is significant ( $\beta = 0.753$ ). H5 is supported. Model 7 indicates that behavioral intention is regressed with attitude and subject norm. The result show that adjusted  $R^2$  is 0.673 and the influence of subject norm on behavior intention is stronger ( $\beta = 0.548$ ).

### Mediating Effect Test

The study referred the suggestion from Baron and Kenny (1986) to test and examine three mediation relationships: (1) PU between PEOU and attitude, (2) attitude between PEOU and BI, and (3) attitude between PU and BI. The results in Model 2 and Model 3 show that PEOU and PU are both significantly affected to attitude ( $\beta = 0.470, 0.716$ ). In addition, by adding mediating variable in Model 4, the result is significant ( $\beta = 0.630$ ) and the standardized coefficient of PEOU reduces to 0.237. It reveals that H6 is supported and PU has a partial mediating effect between PEOU and attitude. Finally, the study discusses the mediating effect of attitude on BI. The results show that PEOU and PU are both significantly affected to attitude in Model 2 and Model 3 and has a significant and direct effect on BI ( $\beta = 0.339, 0.663$ ). Meanwhile, by adding mediating variable in Model 10 and Model 11, the results show the influence of attitude on BI is still significant but PEOU is not significant to BI. It suggests that attitude has a complete mediating effect between PEOU and BI. In addition, PU is significant to BI but its coefficient reduces to 0.367. Thus, it indicates that there is a partial mediating effect.

**Table 6. Regression Analysis**

	Model 7	Model 8	Model 9	Model 10	Model 11
	BI	BI	BI	BI	BI
Control Variables					
Gender	-0.068	-0.071	-0.094	-.086 <sup>+</sup>	-0.096 <sup>*</sup>
Education	0.051	0.072	0.021	.094 <sup>+</sup>	0.083 <sup>+</sup>
Income	0.049	0.024	0.032	.050	0.056
D.V.					
PEOU		0.339 <sup>***</sup>		.025	
PU			0.663 <sup>***</sup>		0.367 <sup>***</sup>
Attitude	0.381 <sup>***</sup>			.667 <sup>***</sup>	0.414 <sup>***</sup>
SN	0.548 <sup>***</sup>				
Max VIF	1.427	1.136	1.116	1.308	2.089

<i>N</i>	257	257	257	257	257
<i>F</i> -value	106.319***	8.928***	51.534***	44.055***	57.038***
Adj. <i>R</i> <sup>2</sup>	0.673	0.110	0.450	0.457	0.523

Note: \*p<0.1; \*\*p<0.05 ; \*\*\* p<0.01; \*\*\*\* p<0.001

### Path Analysis

Through regression results, the study indicates the standardized coefficients between variables in research framework in Figure 2. This path diagrams can identify the influence strengths between dependent variables and independent variables.

**Figure 2. The Coefficient Diagrams of Molecular Gastronomy Acceptance Model**

Further, the study examines the influences of PEOU and PU on attitude. The direct effect of PEOU on attitude is 0.237 and indirect effect is 0.234. Total effect is 0.470. In addition, there is no indirect effect of PU on attitude, and direct effect is 0.630. The effect is higher than total effect of PEOU on attitude. In regard to BI, SN has the highest influence on BI (0.548). Meantime, PEOU and PU have no direct effects and total effects are 0.180 and 0.240 respectively. If the study combines the influence of TAM on BI, the overall total effect will be 0.310 but it is still lower than SN, 0.548. The details are as shown on Table 7.

**Table 7: Path Analysis (N=257)**

D.V.	I.V.	Direct Effect	Indirect Effect	Total Effect
Attitude	PEOU	0.237	0.234	0.470
	PU	0.630	-	0.630
BI	PEOU	-	0.180	0.180
	PU	-	0.240	0.240
	SN	0.548	-	0.548

Finally, study summarizes the hypotheses and the research results as follows (See Table 8):

**Table 8: Summaries of the hypotheses and the research results**

Hypotheses	Results
H1 An individual perceived ease of use will be positively and significantly affected to his or her attitude on molecular gastronomy.	Supported
H2 An individual perceived usefulness will be positively and significantly affected to his or her attitude on molecular gastronomy.	Supported
H3 An individual perceived ease of use will be positively and significantly affected to his or her perceived usefulness on molecular gastronomy.	Supported
H4 An individual attitude will be positively and significantly affected to his or her behavioral intention on molecular gastronomy.	Supported
H5 An individual subjective norm will be positively and significantly affected to his or her behavioral intention on molecular gastronomy.	Supported
H6 An individual perceived usefulness is a mediator between perceived ease of use and attitude.	Complete Mediation

## CONCLUSION AND SUGGESTION

### Conclusion

The study found that PU has lower mean and higher standard deviation. It implies that people have different views on PU and the influence of PU on attitude is higher. The study concludes that because most people do not have experience in consuming molecular gastronomy food, their attitude toward molecular gastronomy food will differ. In addition, the adjusted explanation power of attitude and SN on BI reaches 0.673, and the influence of SN on BI is strongest in the path analysis and total effect of TAM on BI is still lower than SN. It reveals that external forces such as friends and relatives will make consumers change or accept their behavioral intention on molecular gastronomy food.

### Suggestion

The study suggests that perceived usefulness should be emphasized. Molecular gastronomy food can not only rely on visual innovation and easy to use. If so, it will not increase consumers' positive attitude. Instead, it should use perceived usefulness to increase consumers' attitude, especially when molecular gastronomy is not yet popular and consumers have different views. Only when consumers can perceive the usefulness of molecular gastronomy technology, will their attitude change and in the end, accept food prepared by it. Accordingly, gourmet owners and dining schools need to use sales promotions, free samples and conferences to promote molecular gastronomy food. So, people can contact and understand molecular gastronomy technology. Then, they will have positive attitude to accept gourmets made by molecular gastronomy.

### Acknowledgement:

This work was supported by the National Science Council, Taiwan, R.O.C. under the Grants Number NSC-97-2515-S-343-0001.

## REFERECES

- Adem, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived usefulness, ease of use and usage of information technology: A replication. *MIS Quarterly*, 16(2), 227-250.
- Agarwal, R., & Prasad, J. (1999). Are individual difference germane to the acceptance of new information technologies? *Decision Sciences*, 30(2), 361-391.
- Baron, R. M. & Kenny, D. A. (1986), The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical consideration. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Chau, Y. K., & Hu, J. H. (2001). Information technology acceptance by individual professionals: A model comparison approach. *Decision Sciences*, 32(4), 699-719.
- Chiu, H. C. (2002). Quantitative research and statistics analysis. Taipei, Taiwan: Wunan.
- Chinatimes (2009). *Tokyo Tapas Molecular Bar: Molecular gastronomy*. Retrieved July 23<sup>rd</sup>, 2009 from <http://blog.chinatimes.com/rosepudding/archive/2008/04/15/269107.html>
- Davis, F. D. (1986). *A technology acceptance model for empirically testing new end-user information system: Theory and results*. Cambridge, MA : MIT Sloan School of Management.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 23(2), 145-158.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- Fidhbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research: reading*. MA: Addison-Wesley.
- Teo, T. S. H., Lim, V. K. G & Lai, R. Y. C. (1999). Intrinsic and extrinsic motivation in internet usage. *The International Journal of Management Science*, 27, 25-37.
- This H. (2006). Food for tomorrow? How the scientific discipline of molecular gastronomy could change the way we eat. *EMBO reports*, 7, 1062 - 1066
- Venkatesh, V., & Speier, C. (1999). Computer technology training in the workplace: A longitudinal investigation of the effect of the mood.

*Organizational Behavior and Human Decision Processes*, 79(1), 1-28.

Venkatech, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward an unified view. *MIS Quarterly*, 27(3), 297-216.

Webster, J., & Martocchio, J. J. (1993). Turning work into play: Implications for microcomputer software training. *Journal of Management*, 19(1), 127-146.

Wikipedia. (2009). Molecular gastronomy. Retrieved July 30<sup>th</sup>, 2009 from [http://en.wikipedia.org/wiki/Molecular\\_gastronomy](http://en.wikipedia.org/wiki/Molecular_gastronomy)