Factors Influencing the Intension to Use Food Online Order and Delivery Appvia Platforms- Using Tam(Technology Acceptance Model)

S.Preetha, S.Iswarya

Abstract: ***FOOD App is increasingly downloaded and used by a class of people having smart phones. The frequency of usage and the determinants which engage people to use this app has not been assessed. This study aims to estimate the factor influencing the intension to use FOOD (Food Online Order and Delivery) App via Platforms. The experimentalvalidation of the Technology Acceptance Model is used, to quantify the intension to use. Perceived Ease ofUse and Perceived Usefulness being measured using FOOD app quality (via Platform).Perceived ease of use and Perceived Usefulness together measures the intension to use. The FOOD App Quality is measured in three dimensions as system quality, Information quality and Service quality. The model empirically proved to be good fit using TAM. This is a primary study in FOOD App via platform adaption using TAM.***

Index terms: Food Online order and delivery via platforms, Technology Acceptance Model, TAM, Perceived Ease of Use, Perceived Usefulness, Intension to use, Food Mobile App Quality.

I.INTRODUCTION

We commonly sight the FOOD app delivery personnel across the streetsevery day. There is an increase in number of vehicles as the days move on. Also the number of players are increasing. The digitalization has enabled the common man to handle their payments online. This extends the users to purchase online, use various APP. Food is a basic need for every person. This needy food featured with flavours from their choice of restaurants across the city are delivered anywhereusing FOOD App via Platform. Food industry has also evolved in e-commerce technology. It is more interesting to understanding the influencing factors which leads to intension to buy food using App like Swiggy, Uber eats, Zomato, etc... using Technology Acceptance Model (TAM) (Davis 1983). This model encompasses of variables elucidating the behavioural intension and the intension to use technology directly or indirectly. PerceivedEaseOfUse explained as PEOU is the gradation which of factors related to use of technology which makes the person effortless (Davis 1989), PerceivedUsefulness explained as PU is the gradation, where the person's job performance is enhanced by the use of technology.The resultant is the technology adaption.

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II.REVIEW OF LITERATURE

A survey among the college students in Dubai on the usage of online food ordering app showed highly favourable. The positive and negative feedback of dine-in had enhanced the usage of FOOD app (Karishma Sharma[1], Kareem Abdul Waheed[2], 2018). The attitude of internet users in adopting web environment for food ordering is studies. Trust, Innovativeness and external influences are also considered as factors contributing to the attitude to purchase food online among a homogenous group of college students (Serhat Murat Alagoz[1], Haluk Hekimoglu[2], 2012). The intention to adopt e-textbook, with the usage of planned behavior theory and TAM were investigated. PEOU and attitude positively contributed to the intension to use, by unified theory of acceptance (Letchumanan and Tarmizi, 2011). The Indonesianuser's intention to use e-payment system investigated using unifies theory model. The external variablescontributing to intension to use technology are culture perceived security, social influence, performance expectancy and effort expectancy (Junadi[1], Sfenrianto[b], 2015)[5][10][11],[12],[13][17].

In developing countries, the adoption of e-learning among the students where directly influenced by PU and Attitude. While PEOU and computer efficacy were indirectly related using TAM (Richard Boateng, Alfred Sekyere Mbrokoh, Lovia Boateng, Prince Kwame Senyo and Eric Ansong, 2016).PC Lai discussed a literature review briefing on the various technology adoption theories.

Theory of diffusion of Innovation (Roger 1995), the theory if Reasonable Action (TRA) (Fishbein and Ajzen 1975), Planned Behavior theory (TPB) (Ajzen 1985, 1991), Decomposed Theory of Planned Behavior (Taylor and Todd, 1995), The technology acceptance model TAM, TAM2, TAM3 (Davis,Bogozzi and Warshaw 1989,Venkatesh and Davis (2000), Venkatesh and Bala 2008)[1],14],[15].Intention to use e-tax service in Manado and Bitung were studied using TAM and analysed using measurement model and SEM. The model revealed a good fit using TAM, the direct and indirect relationship are significant (Jullie Jeanette Sondakh, 2017). Teacher's adoption technology in class room is analysed with a

sample of 34357 using TAM and verified significantly using SEM (Ronny Schere, Fazilat Siddig, Jo Tondeur[3], 2019). The Greek bank target customers where analysed for their adoption of IT based services and electronic payment using TAM (George Rigopoulos, Dimitrios Askounu, 2007). The brand loyalty, trust and website quality were taken as determinant in TAM to test the use of apparel mobile commerce (Ting Chi 2018). A study conducted in USA with the restaurant operators reveal that adoption of online ordering exceed their expected ROI and they were very pleased on the use of technology (Sheryl E. Kimes, 2011)[7],[8],[9],[16],[19].

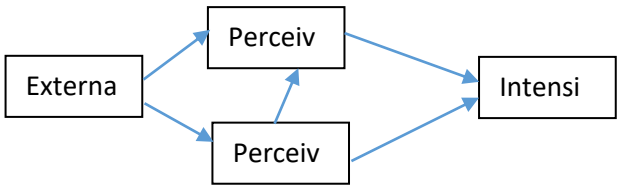
Biometric security system adoption among the employee in the organization is analysed and the problems of adoption, its impacts are estimated using TAM (Timothy Carroll, 2016). The influence of antecedents of adoption in online banking is determined using TAM and its demographic variables towards behavioural intension (Bijith Marakarkandy, Nilay yajnik and Chandan Dasguta, 2017). Conventional model was adopted to study the consumers mobile app attributes towards online food order. Visual, Navigational, information and collaboration design were identified as the four key element in an online order for food app using mobile (Anuj Pal Kapoor, Madhu Vij, 2018)[2],[3],[4][18].

Various new online technology and e-commerce adoption models are analysed and examined using TAM. The FOOD App via Platforms are gaining their momentum in these days across the urban and semi-urban locations in India. In this facet, understanding the determinants of technology adoption and intension to use of the FOOD App is essential. The adoption and intension to use FOOD app being recently loaded in the mobiles are examined here.

III.RESEARCH FRAMEWORK

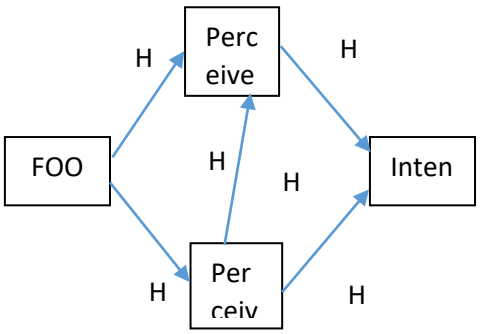
There are different theories and framework analysed for technology adoption. The theory used her for adoption of FOOD app via platforms is the sort of Technology Acceptance Model (TAM) by Venkatesh and Davis, 1996

TAM Conceptual Framework:



Source: Fred D.Davis, ViswanathVenkatesh (1996), Int. J. of Human- Computer Science.

IV.RESEARCH FRAMEWORK



This study is intended to investigate the determinant ofindividual's adoption to technology- FOOD app via Platform. The external variable here is identified as the FOOD app Quality. The Quality is differentiated into Service quality, System quality and Information Quality. An adopted tested questionnaire is used to estimate the intension to use mobile FOOD app via Platform (Ting Chi, 2018).Four factors as determinant for adoption to Food Online Order and Delivery App via Platform (food order and delivery through mobile apps)[6].

1. FOOD APP Quality (Quality)
2. Perceived Ease of Use (PEOU)
3. Perceived Usefulness (PU)
4. Intension to Use

HYPOTHESIS FOR THE STUDY

The following are the hypothesis framed for the adoption of technology.

H1. FOOD app quality significantly influences PU

H2. FOOD app quality significantly influences PEOU

H3. PEOU significantly influence PU

H4. PU significantly influence Intention to use FOOD APP.

H5. PEOU significantly influence Intension to use FOOD APP.

H6. PEOU and PU together significantly influence Intention to use FOOD APP.

V.METHODOLOGY

The descriptive study was conducted using survey technique method. The model was tested with four constructs each described by multiple items and are measured by 5 point Likert scale adapted from Ting Chi, 2018.108 responses were collected, the casual relationship between the dependent and independent variable are analysed. SPSS version 20 is used for analysis.

VI.FINDINGS

The responses where collected using Google forms. The demography of the responses are tabulated below.

Items	Demographics	Numbers	Percentage
Gender	FEMALE	55	51
	MALE	53	49
AGE	18-20 yrs	37	34.3
	21-30 yrs	32	29.6
	31-40 yrs	21	19.4
	41-50 yrs	12	11.1
	above 50 yrs	6	5.6
Marital Status	married	61	56.5
	single	46	42.6
	others	1	0.9
Type of Family	Nuclear	80	74.1
	joint	22	20.4
	with Friends	6	5.6
Education	High School	1	0.9
	Some College	10	9.3
	Bachelor	24	22.2
	Master	47	43.5
	Doctorate	26	24.1
Occupation	IT	12	11.1
	non-IT	56	51.9
	students	31	28.7
	self employed	9	8.3
Monthly Income	10k-25k	37	34.3
	26k-40k	29	26.9
	41k-55k	12	11.1
	56k-70k	11	10.2
	Above 70k	19	17.6
Total Household Food expenses	3k-6k	33	30.6
	6k-12k	43	39.8
	12k-24k	25	23.1
	above 24k	7	6.5
Amount Spend in restaurants per month (in Rupees)	250-1250	27	25
	1251-2250	43	42.6
	2251-3250	17	15.7
	3251-4250	8	7.4
	4251-5250	3	2.8
	above 5250	7	6.5
Amount spend through mobile FOOD App via platforms per month. (in Rupees)	250-1250	70	64.8
	1251-2250	25	23.1
	2251-3250	5	4.6
	3251-4250	3	2.8
	4251-5250	3	2.8
	above 5250	2	1.9

In the sample gender is proportionally distributed. 80 percentage of the sample population are between 18-40 yrs of age. The responses are almost equally distributed between the married and single respondents, majority are members of nuclear family. Bachelors, Master and doctorates are the major respondent's educational status. Around 56 percentage of respondents are non-IT professionals. 20 percent of the household food expenses are done in restaurants and around 14percentage of the household food expenses are done through mobile FOOD app platforms.

VII.FOOD APP QUALITY SIGNIFICANTLY INFLUENCES PU (H1)

The influence of FOOD App quality on Perceived Usefulness is measured using regression analysis.

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Model Summary				
Model	R	R^2	Adj R^2	Std.Er
1	.681[a]	0.46	0.459	0.6003
a. I.V: (Constant), quality				
b. D.V: PU				

Anova						
MODEL		Sum of Sq	Deg of Freedom	Mean Sq	F value	Sig
1	Regression	33.113	1	33.113	91.899	.000[b]
	Residual	38.194	106	0.36		
	Total	71.307	107			
a. D.V: PU						
b. I.V: (Constant), quality						

COEFFICIENTS						
Model		UnstdCoeff		StdCoeff	T	Sig
		B	Std. Error	Beta		
1	(Constant)	0.31	0.354		0.88	0.4
	quality	0.86	0.09	0.681	9.59	0
a. D.V: PU						

The R^2 value is 0.464. That is 46% of Perceived Usefulness can be explained by the FOOD App quality. The value of P is statistically significant and influence the resultant variable PU.

$$PU = 0.312 + 0.863(Quality)$$

VIII.FOOD APP QUALITY SIGNIFICANTLY INFLUENCES PEOU (H2)

Regression analysis is performed to estimate the effect of Food App on the PEOU

MODELSUMMARY				
	R	R^2	Adj R^2	Std.Er
1	.695[a]	.482	.478	.55575
a. I.V: (Constant), quality				
b. D.V: PEOU				

Anova						
MODEL		Sum of Sq	Deg of Freedom	Mean Sq	F value	Sig
1	Regression	30.516	1	30.516	98.805	.000[b]
	Residual	32.738	106	0.309		
	Total	63.255	107			
a. DV: PEOU						
b. I.V: (Constant), quality						

COEFF				
MODEL		UNSTD Coeff		STD Coeff
		B	Std. Error	Beta
1	(Constant)	.888	.328	
	quality	.828	.083	.695
a. DV : PEOU				

The R^2 value is 0.482. That is 48% of Perceived Ease of Use can be explained by the FOOD App quality. The value of p is statistically significant and influence the PEOU. The model is a good fit.

$$PEOU = 0.888 + 0.828(Quality)$$

IX.PEOU SIGNIFICANTLY INFLUENCE PU (H3)

The relationship influence of PEOU to PU is estimated using regression analysis.

MODEL SUMMARY			
	R	R^2	Adj R^2
1	.672[a]	.451	.446
a. I.V (Constant), PEOU			
b. D.V: PU			

Anova				
MODEL		Sum of Sq	Deg of Freedom	Mean Sq
1	Regression	32.182	1	32.182
	Residual	39.126	106	.369
	Total	71.307	107	
a. Dependent Variable: PU				
b. I.v: (Constant), PEOU				

Coefficients				
Model		Unstd. Coeff		Std. Coeff
		B	Std. Error	Beta
1	Constant	.734	.319	
	PEOU	.713	.076	.672
a. Dependent Variable: PU				

The R^2 value is 0.451. That is 45% of PU can be explained by the PEOU. P value is statistically significant and influence the resultant variable PU.

$$PU = 0.734 + 0.713(PEOU)$$

PU significantly influence Intention to use FOOD APP (H4)

Model Summary

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Model	R	R^2	Adj R^2
1	.688[a]	.473	.468

a. I.V: (Constant), PU

b. D V: Intensiontopurchase

a. D.V: Intensiontouse

The R^2 value is 0.249. That is 25% of Intension to purchase via FOOD App can be explained by the Perceived ease of use (PEOU). P value statistically significant and predicts the resultant variable Intension to use

Intension to use = 1.267+ 0.520(PEOU)

Anova

MODEL		Sum of Sq	Deg of Freedom	Mean Sq	F value	Sig
1	Regression	32.604	1	32.604	95.304	.000[b]
	Residual	36.264	106	.342		
	Total	68.867	107			

a. D.V: Intensiontopurchase

b.I.V: (Constant), PU

PEOU and PU together significantly influence Intention to use FOOD APP (H6)

Model Summary

Model	R	R^2	Adj R^2	Std. Er
1	.690[a]	.476	.466	.58634

a.I.V: (Constant), PU, PEOU

b. D.V: Intensiontouse

Coefficient

Model		Unstd. Coefficient		Beta
		B	Std. Error	
1	(Constant)	.926	.260	
	PU	.676	.069	

a. D.V: Intensiontouse

The R^2 value is 0.473. 47% of Intension to use via FOOD App can be explained by the Perceived Usefulness. P value is statistically significant and predicts the resultant variable Intension to purchase.

Intension to Purchase = 0.926 + 0.676(PU)

PEOU significantly influence Intension to use FOOD APP (H5)

Anova

MODEL		Sum of Sq	Deg of Freedom	Mean Sq
1	Regression	32.770	2	16.385
	Residual	36.098	105	.344
	Total	68.867	107	

a. D.V: Intensiontouse

b. I.V : (Constant), PU, PEOU

COEFFICIENTS

Model		Unstd. Coefficient		Std
		B	Std. Error	Beta
1	(Constant)	.802	.315	
	PEOU	.069	.100	.066
	PU	.632	.094	.644

a. D.V: Intensiontouse

Model Summary

Model	R	R^2	Adj R^2	Std. Er
1	.499[a]	.249	.241	.69870

a. I.V: (Constant), PEOU

b. D.V: Intensionto use

The R^2 value is 0.476. That is 48% of Intension to purchase via FOOD App can be explained by the PEOU and PU.

P value is statistically significant and predicts the outcome variable Intension to use

Anova

MODEL		Sum of Sq	Deg of Freedom	Mean Sq	F value	Sig
1	Regression	17.120	1	17.120	35.068	.000[b]
	Residual	51.748	106	.488		
	Total	68.867	107			

a. D.V: Intensiontouse

b.I.V: (Constant), PEOU

Intension to use = 0.802+ 0.069(PEOU) +0.632(PU)

X.DISCUSSION

Coefficients

Model		Unstd Coefficient		Std Coefficient	T	Sig
		B	Std. Error	Beta		
1	(Constant)	1.267	.367		3.455	.001
	PEOU	.520	.088	.499	5.922	.000

The proposed Hypotheses were tested using Linear Regression model. External variable considered here is FOOD App Quality. The FOOD quality is measured through three dimensions. First, Service quality is represented by timely service

deliveries, prompt responses to customer questions, personalized and professional services. Secondly, Information Quality describes the updated information about menu, discount and offers, accuracy, comprehensiveness, presentation should be attractive, design and app should be informative. Third is the system quality which is attributed to the reliability of the application, effectiveness of use, clarity in content and navigations and hassle free.

The results of the study shows that PU is explained by FOOD App quality to the extent of 46%. It can be concluded that quality of the FOOD app predicts the PU by the customers. Also PEOU is explained by FOOD App quality to the extent of 48%. Hence, the quality of FOOD App also predicts the PEOU by the customers. PU is 45 % predicted by PEOU for the customers. PU influences the intension to adopt FOOD App technology by 48%, and PEOU influences the intension to adopt FOOD App technology by 24%. But, the combined relationship of PU and PEOU of the customersstronglyinfluence the intension to adopt FOOD App technology by 48 percent.

There is strong positive influence of the quality of FOOD App, PEOU and PU together towards the customer's intension to adopt FOOD App technology via platforms and the results are in coherence with TAM (Davis and Venkatesh 1996).

XI.CONCLUSION

The technology adoption of FOOD App, is influenced by the Quality of FOOD App (Information, Security and System), PEOU of the customer and PU of the customer which is proved using TAM. It is the quality of FOOD App which is the foremost external stimuli which results in technology adoption. From the analysis there is a strong indication that adoption of technology will happen as a result of the quality of FOOD App. The service providers have to be very conscious in terms of maintaining the quality of the FOOD App. This ensures that it results in Ease of use and ultimately purchase intension.

Several factors which lead to the quality of FOOD App mentioned in the study have to be focused which are vital for new users to adapt technology to order food via App.

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