Examining a theory of reasoned action (TRA) in internet banking using SEM among Saudi consumer

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ABSTRACT

This study examines the applicability of theory of reasoned action (TRA) in a context of internet banking intention using structural equation modeling (SEM), hence it is intended to test whether the theory is acceptable or not in a newly context among none western culture, thus, emic measures of etic latent constructs are required. The simplified theory is tested using survey data from 350 respondents. Out of these, only 304 questionnaires are found to be usable whilst the rest are omitted owing to the incomplete responses or due to statistical circumstances. Results suggest that Compared to the TRA model, our generating model can create a much better understanding of actual internet banking behavior among Saudi consumers in Riyadh. The results indicated that direct paths from attitude to actual behavior and when adding a path from SN to attitude would improve the predictive power of the model and convincing improvement in fit, more so than what had been established by the original TRA model.

Keywords: TRA theory, Subjective norm, Attitude, Internet banking, and Saudi.

INTRODUCTION

One of the most commonly used classes of models is TRA theory (Fishbein and Ajzen, 1975). This model originates from learning theory and assumes that behavior toward a particular object is approximated by an intention to perform that behavior. Intention represents a person's conscious plan to exert effort to carry out a behavior (Eagly and Chaiken, 1993, p. 168). The theory of reasoned action (TRA) (Fishbein and Ajzen, 1975), originally introduced in the field of Social Psychology, has been widely used to explain individuals behavior. The TRA hypothesizes that behavior is predicted by an individual's intention to engage in a given behavior. Intention, in turn, is predicted by two factors, the individual's attitude towards the outcome of the behavior and by the opinions of the person's social environment, which is called the subjective norm (Fishbein and Ajzen, 1975).

Since the similarities between people across the globe are not easy to measure, it is also not easy to recommend and create rules that explain how all people make buying decisions (Abdulrahman et al., 2012). However, experienced scholars who analyze customer behavior have presented a useful "outline" or set of guidelines of acceptable conduct or procedure regarding how a consumer decides to make a purchase. It is very important to validate and generate TRA theory before it is adopted in relation to consumer behavior in Kingdom of Saudi Arabia. "Emic measures of etic latent constructs are required for Theory of Reasoned Action" (Malhotra & McCort, 2001, p.235). In addition, Bang et al. (2000) contends that, the TRA model contains Western cultural biases. Researchers agree and state that "TRA should be revised, or extended" (Javalgi, Khare, & Gross, 2005, p.327). This sentiment has also been expressed by Ticehurst and Veal (2000) who state culture can also influence the outcomes of the research. Hui (1982) agrees by stating the validity of the TRA theory challenge exists.

In fact, most theories relating to purchase behavior have been created in developed countries such as the USA. As for as TRA theory is considered to be very useful when predicting behavior (Abbas & Nik, 2010), but is not thoroughly tested in less developed countries or even in non-western cultures such as Saudi Arabia (Malhotra & McCort, 2001). It is clear that great care needs to be taken when extending the findings of studies conducted in developed countries like the USA, to countries such as Saudi Arabia. The research findings from more developed countries are not necessarily applicable to organizations in less developed countries – LDC. In fact, according to Ticehurst and Veal (2000), culture can influence research outcomes. Despite its popularity and usefulness, researchers feel that, with respect to different cultures, the Reasoned Action theory should be modified for the local market. According to the Theory of Reasoned Action (TRA) the strongest and most closely associated predictor of volitional behavior is individual behavior, "intention". In order for behavioral intention to perform both the constructs, "attitude & subjective norms" are needed as indicated in Figure 1 (Appendix).

As per the TRA, Ajzen (2006) states that the two constructs are control and guided human action. His beliefs are based on certain outcomes of behavior, appraisal of these outcomes (Ab - Attitude), beliefs about the normative anticipation of others and motivation to comply with this anticipation (SN-Subjective norm). As per the TRA, Ajzen (2006) states that the two constructs are control and guided human action. His beliefs are based on certain outcomes of behavior, appraisal of these outcomes (Ab - Attitude), beliefs about the normative anticipation of others and motivation to comply with this anticipation (SN-Subjective norm). Thus, behavioral beliefs and normative beliefs can be the foundation on which to build any further explanation for certain actions toward a certain target. The following formula can explain the diagram of TRA theory:

$$[BI = (Ab) \ W1 + (SN) \ W2]$$

BI refers to the individual behavior intention, which is a function of both Ab (attitude toward performing the behavior) and SN (individual subjective norm in regard to certain behavior performing). As for W1 &2 (the weight of each construct), (Ab) is weighted by (W1) which represents the importance of attitude to the target person, and (SN) is weighted by (W2) which represents the salience of normative influence to the target person (Dillard & Pfau, 2002).

STUDY OBJECTIVE

The purpose of this study is to validate and generate a research model that will demonstrate actual purchase behavior towards online banking among Saudi consumer in Riyadh, and determine factors that influence an individual's intention to use online banking based on TRA theory using structural equation modeling (SEM). We used online banking as the target technology and Saudi subjects as the sampling frame. Internet banking has become a major fully-fledged distribution channel of banking products and services in developed world. In line with the increase of users, it has been estimated that e-banking using would also amplify. In spite of the world internet potential, actual number of e-banking users stills a very marginal activity

in Saudi Arabia, until today we can observe the limitation for using the online banking. As proposed in the theory of reasoned action, we hypothesized that attitude towards online banking and subjective norm positively affect an individual's intention to use online banking which will affects directly the actual use for online banking. The research model for this study is shown as indicated in Figure 2 (Appendix).. Based on the theory of reasoned action as shown in the research model above, three hypotheses were proposed.

Hypothesis 1:   Attitude toward Internet banking positively affects the intention to use the technology.

Hypothesis 2:   Subjective norm positively affects the intention to use Internet banking

Hypothesis 3:   Intention to use Internet banking affects the actual use Internet banking

Hypothesis 4a: Intention is a mediating effect for the relationship between SN and Internet banking

Hypothesis 4b: Intention is a mediating effect for the relationship between attitude and Internet banking

LITERATURE REVIEW

Theory of Reasoned Action (TRA) was adopted in several studies and shows a strong predictor of actual behavior in different locations. All these types of behaviors can accounted for by the TRA theory. Furthermore, three meta-analysis studies were found to be supporting TRA (Shappard et al., 1988; Randolf & Wolff, 1994; Sherran & Oberall, 1999). As indicated in table 1 (Appendix) shows the related literature from previous studies that used TRA to predict behavior.

Intentions among Theory of Reasoned Action (TRA)

Intention is the "probability, as stated by the respondent, that he/she will perform the stated action" (Ajzen & Fishbein, 1980, p.180). This intention is comprised of attitudes (Ab) and subjective norms (SN) as previously discussed. Fishbein (1967) has proposed that there are other variables which could be added to the model of the TRA, but which can only affect intention and therefore, behavior. It refers to the intention to perform the behavior in question (Fishbein, 1967). It represents the cognitive part of the Fishbein and Ajzen theory. Behavioral intentions "capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991, p. 181). Moreover, they refer to "a person's subjective probability that he will perform some behavior" (Fishbein and Ajzen, 1975, p.288).

Theoretically, previous studies have shown the accuracy of intention measurement. According to Olsen et al. (1993), intention is marginally less than perfect in the prediction of purchase behavior. For example, he listed a number of elements that could affect the strength of the relationship between purchase intention and purchase behavior. These factors include "intervening time, different levels of specificity, unforeseen environmental events, unforeseen situational contexts, degree of voluntary control, stability of intentions, and new information. Obviously intention can change over time" (Olsen et al., 1993, p.319)

Attitude among Theory of Reasoned Action (TRA)

Attitude is a stands for a person's general feeling of favorableness or unfavorableness toward a concept. In other words, it represents the amount of affect (Fishbein and Ajzen, 1975). The attitude toward behavior considers behavior as a concept, it "represents the person's general feeling of favorableness or unfavorableness for the behavior in question"(Ajzen and Fishbein, l980, p.285). Based on TRA, the first determinant of individual intention to act, as mentioned earlier, is the attitude. According to Ajzen and Fishbein, attitude towards behavior is the estimation of positive or negative self-evaluation in relation to a certain behavior. This construct depends on whether behavior is positively or negatively esteemed. It is "determined by a total set of accessible behavioral beliefs linking behavior to various outcomes and other attributes" (Ajzen and Fishbein, l980, p.283). Thus, attitude is an individual's salient belief as to whether the outcome of his or her behavior will be positive or negative. Therefore, when a consumer has positive salient beliefs about his behavior then he has a positive attitude in relation to that behavior. The opposite applies when he has negative salient beliefs regarding a certain outcome of his purchase behavior, which is then considered to be a negative attitude.

Subjective Norm among Theory of Reasoned Action (TRA)

Ajzen and Fishbein mentioned, "Subjective norms are a person's own estimate of the social pressure to perform or not perform the intended behavior" (Ajzen and Fishbein, 1980, p.6). It refers to an individual's perception about what other people think of his or her behavior in question This encompasses perceptions about what family and friends think about the outcome of the behavior (normative belief), and the degree to which this influences the behavior or action of the person responsible (motivation to comply). In other words, normative belief and motivation to comply create the subjective norm, irrespective of the individual's opinion. It is the

consumer's perception that "the importance of people around him/her and their opinions on how he or she should act will determine the behavioral outcome" (Ajzen and Fishbein, 1980, p.6).

METHODOLOGY

To determine user intention to adopt Internet banking and actual use, a convenience survey using a seven-point scale with a structured questionnaire was conducted during the first half of 2012. The data was gathered on personal banking customers with 5 Saudi banks.

A total of 350 customers from various Saudi bank, were requested to complete a questionnaire that contained measures of the constructs of concern. The participants in the main investigation were all customers at the bank where the data collection took place. Participation in the study was voluntary and was limited to customers with at least one bank account. Items from previous studies were modified for adaptation to the internet banking context. The measures of actual use, behavioral intention to use, attitude toward using, subjective norm, were adapted from various studies related to the TRA (Taylor and Todd, 1995). The measures were pilot tested on MIS graduate, who were asked to indicate agreement or disagreement with the survey items using a seven-point scale. The wording of the items was then modified based on the pilot test results and advice from MIS professors. Researchers had to confront several challenges in Saudi Arabia especially in terms of designing sampling procedures as legally and socially females cannot be approached by male strangers. Because of these difficulties, a convenience sample was utilized. The questionnaires distributed were self-administered, which means that there is no interviewer asking or guiding the respondents throughout the questions, instead the respondents will themselves read and answer the questionnaire. Just a female researchers were support us in distributing the female section in each bank. Each bank here in Saudi have to section one for male and other for female.

As this survey was executed in Sudi Arabia, it was therefore necessary to translate the questionnaire from English to Arabic, and to ascertain that the translation used equivalent language. The questionnaire was translated into the Arabic language by two bilingual Arabian (Arabic/English) lecturers at the Al Imam language center. The double-translation method was employed to ensure the proper translation of this survey to avoid confusion or misinterpretation and also to ensure that the Arabic questionnaire adequately represented the English version on which it was based (Hair et al., 2006).

ANALYSIS AND RESULTS

The data collected were coded and saved into SPSS version 20 and analyzed using AMOS version 14. A confirmatory factor analysis (CFA) was duly conducted on measurement models and structural models. CFA specifies the indicators that define each latent construct (Hair et al, 1998). Measurement analysis, discriminant analysis, composite reliability analysis and direct indirect impact analysis (mediating effect), testing the fit for the hypothesized structural model, revised model, competing model, and comparison analysis (Sentosa et, al., 2012). Through modification indices, items that are cross-loaded in more than one dimension were relaxed one at time as proposed by Long (1983) and insignificant parameters were excluded from the study. Beside relaxing parameters, removing or adding items (or parameters) from one dimension to another dimension, which is highly cross-loaded, was also performed in this study. However, any removing, excluding or adding parameters need to be performed based on theoretical, statistical and practical considerations (Bagozzi and Heatherton, 1994). All the items are shown in Table 3. During the process of data screening for outliers, six dataset were deleted due to Mahalanobis (D2) values more than the χ^2 value ($\chi^2=67.83$; n=39, p<0.001) leaving a final 304 dataset to be analyzed.

Demographic Characteristics of the Respondents

Table 2 shows the results obtained after the recorded demographic variables were analyzed using descriptive statistics. The frequency and percentage for each variable is listed according to the survey categories in this table. A total of 304 usable, complete responses were obtained. The gender breakdown was 66.7 percent male and 33.3 percent female; almost all were in twenties or thirties. 34 percent had more than one experience with Internet banking, and approximately a total of 304 usable, complete responses were obtained. The gender breakdown was 66.7 percent male and 33.3 percent female; almost all were in twenties or thirties. 15.7 percent had no experience with Internet banking, and approximately 43.7 percent at least once a month. As indicated in table 2 (Appendix) gives a detailed description of the demographic statistics for the respondents.

Exploratory factor analysis (EFA):

Factor analysis was employed to validate both independent and dependent variable constructs. Principal component analysis with varimax rotation was utilized in all cases. In the current results, the eigenvalues for the independent variables were greater than one, as was the dependent variable. It is likely argued that the used items in the constructs were significant and qualified for the further analysis of the study data. The factor loadings or regression estimates of latent to observe are greater than the recommended level of 0.35, which is based on 304 samples and at the 5 percent significance level (Hair et al., 2006). As indicated in table 3 (Appendix).

The Kaiser-Meyer-Oklin value is 0.936, which is higher than the recommended minimum of 0.6 (Kaiser, 1974). Barlett's test of sphericity (Bartlett, 1954) was significant (p<0.001), supporting the factorability of the correlation matrix. As indicated in table 3 (Appendix), all items loaded as expected on their respective factor.

Reliability test:

After completing EFA, internal consistency reliability to test unidimensionality was evaluated by Cronbach's alpha. Each construct shows Cronbach alpha readings of acceptable values of above 0.60 (Nunnally, 1970), except for subjective norms which obtained a Cronbach value of 0.541. However, this variable is included in subsequent analysis since composite reliability calculated for subjective norms is 0.779, thus conforming to Nunnally's standard. The research framework consists of two exogenous and two endogenous variables as indicated in table 4 (Appendix).

Particularly, the SEM for the abovementioned demonstrates the distribution of data was normal. Given this evidence, a sample can be considered to be multivariate normally distributed at the 5 percent significance level since the critical ratio is smaller than that of 1.96, indicating that the coefficient of multivariate kurtosis is not significantly different from zero. This means, the assumption of data normality is particularly met. Hence, the data employed in the present study is statistically meaningful and also helps us to improve the understanding of the subject of the study. A univariate normality of the data was also performed, as indicated in table 5 (Appendix) because the Z-value of kurtosis and skewness did not give a significant value and exceeded 0.05.

Confirmatory factor analysis (CFA) results:

Although EFA produced good results, yet, under the CFA, modifications are made to ensure that the hypothesized model meeting the SEM assumptions. Evidently, the items may subject to the modifications, although they were statistically significant under EFA. Considering these modifications are of importance in ensuring, the data are free from the outliers and the non-normality of data. The authors used CFA with AMOS 14 to examine the convergent validity of each construct. From the confirmatory factor analysis result in Table 6, we observed that the factor loadings of all observed variables are adequate ranging. This indicates that all the constructs conform to the construct validity test as indicated in table 6 (Appendix).

The twelve items as noted in the CFA are further analyzed using SEM. As reported in Table 13, both RMSEA and RMR are well within the range of acceptability recommended by MacCallum et al. (1996) and Byrne (2006) respectively. As expounded earlier, MacCallum et al. (1996) suggested that a RMSEA that is less than 0.08 indicates good fit and reasonable errors of approximation in the population. The RMR of the measurement model indicates that the model is a well-fitting model.

Test of Convergent Validity:

The fifth test is average variance extracted (AVE) by each construct, which indicates the amount of variance in the item explained by the construct relative to the amount attributed to measurement error (Fornell & Larcker, 1981). The Fornell and Larcker criterion, which states that the AVE should be >0.50 AVE = $(\sum \Box \text{Standardized Loading})^2 / [(\sum \Box \text{Standardized Loading})^2 + \sum \text{Measurement}]$, was used to assess the AVE for all constructs. As indicated in table 7 (Appendix) that all the indicators were statistically significant for the proposed constructs, thereby providing strong evidence for convergent validity (Bagozzi & Yi, 1988).

Hypothesized Model Analysis (SC):

AMOS 14.0 Graphics was used to run the structural model and test the hypothesized relationship between constructs. Maximum likelihood (ML) estimation was employed to compare structure coefficients between latent variables. Examinations of the goodness of fit indices (GOF) ML are based on the assumption that the observed variables are normally distributed. This assumption has been shown to be met by the data

previous section. The hypothesized model in Figures 2, yields a χ2 (chi-square) of 371.0, degree of freedom = 185 and P-value = 0.000 which is not significant at the level of 0.050), indicating that the model fits the data very well except the P-value. However, because the chi-square statistic is very sensitive to the sample size it is more appropriate to look at other fit measures. Fortunately, other fit measures also indicate the goodness of fit of the model to the data (CMIN/DF = 2.006, RMSEA = 0.51, TLI = 0.980, CFI = 0.983, NFI = 0.966, GFI = 0.921, AGFI = 0.901). All indexes indicate that the model achieves a good level of overall fit as indicated in table 8 (Appendix).

Mediating Effect of Hypothesized Model:

A mediating effect is created when a third variable/construct intervenes between two other related constructs. For our study, we tested the mediating effects of intention in the relationship between attitude/SN and actual behavior as indicated in table 9 (Appendix).

Intention is a mediating effect for the relationship between SN and actual behavior, and has a significant indirect effect of 0.341**, which support (H4a): Intention mediates the relationship between attitude in travel and actual behavior. Finally, according to mediating effect of intention as for (H4b), is not supported by the relationship of attitude and actual purchase. The direct effect between the relationship of attitude and actual purchase is significant 0.719**.

Hypothesis Testing of Hypothesized Model

Based on Hair (2006) sate that regression weights are present each parameter's un- standardized estimate, (S.E.), and (C.R.), where estimation of the critical ratio (C.R.) by divided into S.E. If the result is above +/-1.96, (Null hypothesis): C.R is 0" is rejected. Table 10 shows Estimate, S.E, and each parameter's C.R. Based on the finding, as indicated in table 10 (Appendix), all the hypothesis are acceptable because they are above +/-1.96 C.R.

Model Generating (MG)

Jöreskog and Sorbom (1993) noted that, although re-specification may be either theory or data driven, the ultimate objective is to find a model is both substantively meaningful and statistically well-fitting.

Goodness-Of-Fit indices of Model Generating (MG)

The modification indices of the perceived actual purchase suggest adding a path from attitude to actual purchase. Figure 3 presents the modified model, with standardized estimates. The path coefficient for the adding path is negative, which suggests that if there is more positive attitude, the amount of actual behavior toward interne banking is high. This is logical; the advice to apply this modification meets with the theoretical justification. Thus, we decide to accept the modification. The resulting models fit, with a chi-square of 355.460 and 339 degrees of freedom, and a p-value of the 0.259 as indicated in figure 3 (Appendix).

Hypothesis Testing of Hypothesized Model

Based on Hair (2006) sate that regression weights are present each parameter's un- standardized estimate, (S.E.), and (C.R.), where estimation of the critical ratio (C.R.) by divided into S.E. If the result is above +/-1.96, (Null hypothesis): C.R is 0" is rejected. As indicated in table 11 (Appendix). Estimate, S.E, and each parameter's C.R. Based on the finding, (Table 11) can decide that the entire hypotheses are acceptable because they are above +/-1.96 C.R.

Comparison between Hypothesized and Model Generating:

Using modification indices, the study developed a Model Generating with an attempt to ensure a better fitting and possibly more parsimonious model. The new path is a direct relationship between attitude and actual behavior. This modification need to test by direct and indirect effect to investigate whether mediator effect between the relationships of attitude and actual behavior. Based on finding, this hypothesis is supported. Partial mediation is supported for this relation. As indicated in table 12 (Appendix).

According to Hair et al. (2006), better nested models are usually evaluated using the difference between the Chi-square (CMIN/df). The following equation is used for computation:

$$\Delta \chi^2 \Delta \, df = \chi^2 df \, (B) - \chi^2 df \, (A)$$
$$\Delta \, df = df \, (B) - df \, (A)$$

Because the difference of two χ^2 distributed values is itself χ^2 distributed, we can test for statistical significance given $\Delta\chi^2$ difference value and the difference in degrees of freedom (Δ df = 1, meaning the additional path in the MG model), a $\Delta\chi^2$ of 3.84 or better would be significant at the 0.05 level.

$$\Delta\chi^2\Delta\,df = 382.41 - 355.460 = 26.94\ (>3.84)$$
$$\Delta\,df = 340 - 339 = 1$$

Thus, as shown in Table 12, based on goodness of fit indices, The Model Generating (MG) model has a better fit and larger parsimony compared with hypothesized model Strictly (Confirmatory Model- SC).

DISCUSSION

The study is aimed at explaining the applicability of the TRA in a context of none western culture using survey questionnaire to validate it. The model is simplified by only investigating the impact of the "attitude" and "subjective norm" constructs on the usage intentions and the impact of the intention on actual behavior. The appropriateness of the model's constructs is examined in length using SEM. Since the research is model testing in nature, therefore there is no additional constructs have suggested in the model.

Attitude

In the present study, the attitude was positively correlated to use. Thus, the more positive the attitude is, the more likely that none western culture (Saudi Arabia) is selected by the respondents. The result is not surprisingly as many studies have been found out that attitude was an influential factor for behavioral intentions and actual behavior. This outcome is consistent with the findings from (Ramayah & Mohd-Suki, 2006). Bentler and Speckarts (1981) examined the theoretical results of adding a direct path between attitude and behavior. Their results indicated that direct paths from attitude to actual behavior would improve the predictive power of the model, more so than what had been established by the original TRA model (Fishbein & Ajzen, 1975).

Subjective norm

The current study's result also concluded that subjective norm was positively associated with use. The findings are in light to that of the previous works opined by Ramayah and Mohd-Suki (2006) and Gopi and Ramayah (2007). These authors have documented that the TRA's subjective norm construct has positive relationship to that of behavioural intentions. The outcome of the current study for subjective norm is also in the direction.

Attitudes and Subjective Norms

Ajzen and Fishbein (1980) postulated that both attitude and subjective norms are empirically segregated and have unique and different effects on intention. This finding also lends support to the previous argument of (Park, 2000; Miniard & Cohen, 1981). Both of them show a high correlation between subjective norm constructs and attitude construct. "Attitude and subjective norms are correlated because the impact of one's behavior on another can be stated as either a behavioral belief or normative belief" (Miniard & Cohen, 1981, p.311). This could affect the model fit where "TRA can show statistical problems when strong attitudes exist. This is because the purpose of the subjective norm relationship is to represent the preferences of others in terms of behavioral beliefs rather than normative beliefs" (Dillard & Pfau, 2002, p.270).

The solution treats the normative component of the TRA as a determinant of attitude as Park (2000) mentioned. Previous studies show attitude towards intention is stronger than subjective norm towards intention (Park, 2000; Dillard & Pfau, 2002). Recently, Hansen et al. (2008) investigated the theories of TRA and TPB and indicated that by adding a direct path from attitude to subjective norm, in both theories; the model fit of the theory is improved compared to models without this path.

As indicated in table 13 (Appendix), these findings are supported by Chang (1998), who conducted a study of unethical behavior and found a convincing improvement in fit when adding a path from SN to attitude, as per the TRA theory. Chang (1998) hypothesized that subjective norms positively influence attitudes towards buying organic food.

Managerial implications

Managerial implications can be drawn from the present study. Practically, this research assists a service provider in understanding the attitude of existing users of Saudis in which in the future the service provider is of

value to set up with "Saudi culture" in their premises in order to cater Saudi internet banking needs who gives greater emphasis on the religion matters in financial transactions. The research is also pivotal to assist the existing internet banking based none western culture to pay more attention about the importance of attitude and subjective norm in affecting one's usage internet banking. On the prospective researcher point of view, the research is of significance to contribute to the knowledge for none western culture by providing the latest findings, particularly what makes people using internet banking.

CONCLUSION

It is examined whether the TRA is supportive in understanding the impact of attitude and subjective norm on the actual behavior, with a reference to the newly emerging context notably none western culture. In our opinion, this study is a pioneering effort in applying the TRA to the newly emerging context of Saudi culture and by adding a direct path from attitude to subjective norm, and from attitude directly to actual behavior; the model fit of the theory is improved compared to models without this path. Compared to the TRA model, our generating model can create a much better understanding of actual internet banking behavior among Saudi consumers in Riyadh. Nonetheless, we can use TRA to demonstrate actual purchase behavior; however our generating model is more effective. Every research comes with contributions. As such, the present study is also contributing primarily to the body of knowledge pertaining to into none western culture context especially among Saudis. The TRA has been sufficiently addressed the impact of the "attitude" and "subjective norm" factors on the internet banking behavior among Saudis usage. Secondly, the research is of importance to note that SEM approach is widely scanty among Saudi context. Various studies have employed SEM in their theoretical frameworks, but particularly on the other occasions (Lada et al., 2009; Abbas, 2010).

Nonetheless, the study also comes with limitations. This study acknowledges two main limitations. The reasons of only suggesting two limitations are of profound importance of developing more works in this area meticulously in the future. Firstly, the present study was conducted in Riyadh, in which the findings can only be generalised to local people of Riyadh. The findings and implications drawn from this present study cannot be readily generalized to other cities in Kingdom of Saudi Arabia. To overcome the limitation, future works may call to include all Saudis from various states in Kingdom of Saudi. Secondly, the present study used convenience sampling with the understanding that the current research was self-financed and also owing to the limitation of times. This is only a minor dearth and the authors believe the use of convenience sampling method is able to contribute significantly, at least at exploratory level. In future researches, the selection of different sampling method will be of importance to advance the usefulness of the findings obtained and for the purpose of generalization of findings.

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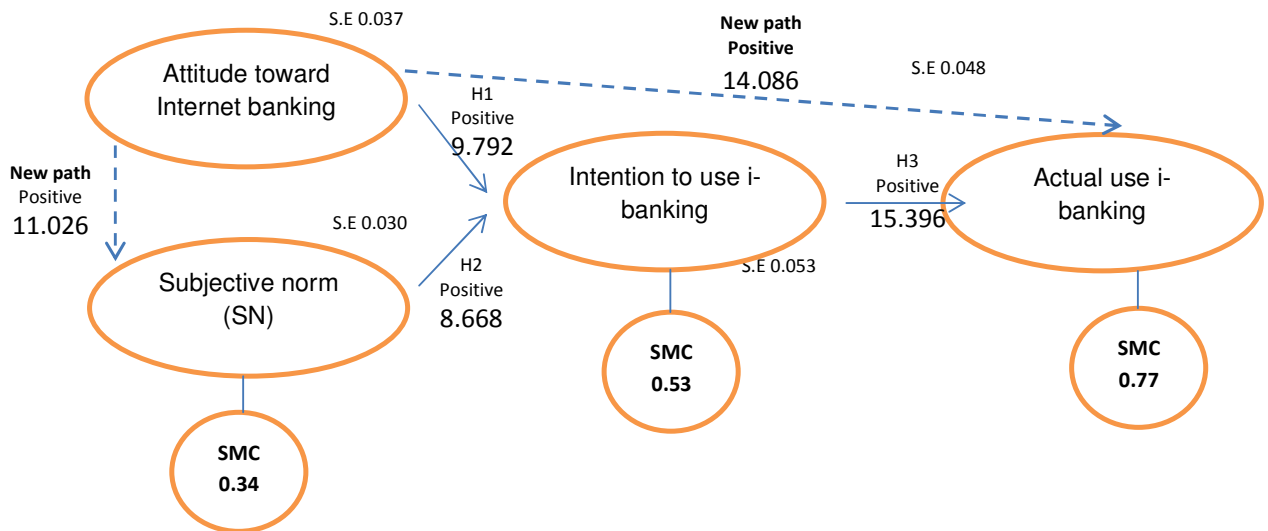
APPENDIX

Figure 1: Theory of Reasoned Action Model – Fishbein & Azjen, 1975 (TRA)
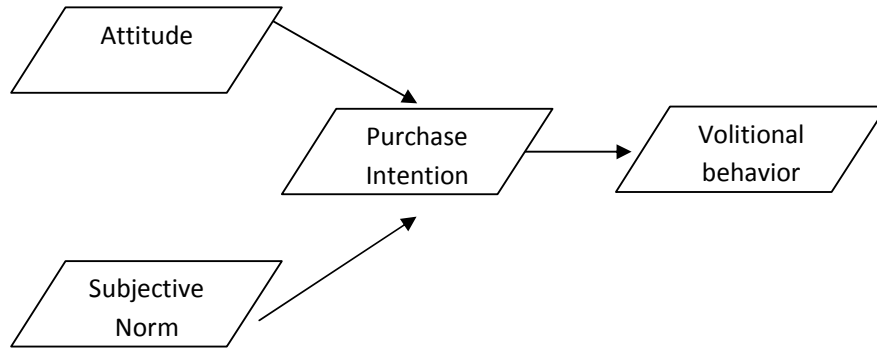
Figure 2: Research hypothesized model
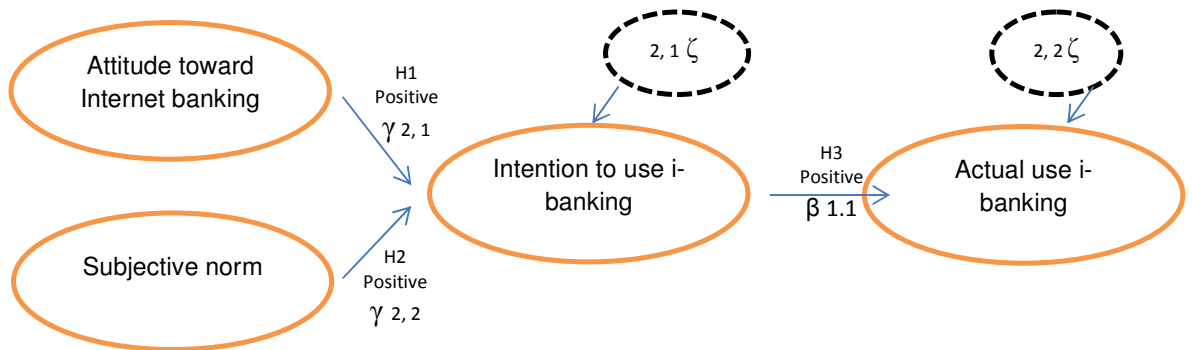
Figure 3: Research Model Generating (MG)

Table 1: Previous studies using TRA in different place and different area of interesting

Authors	Country	Year	Area	Finding
Davies	USA	2008	Medical	Supports TRA
Bonne et al.	France	2007	Halal meat consumption	Supports TRA
Damen & Steenbekkers	Netherlands	2007	Freezing and defrosting meat	Supports TRA
Cook & Fairweather	New Zealand	2007	Lamb & beef	Supports TRA
Sharon et al.	USA	1997	Medical	Supports TRA
Shih & Fang	Taiwan	2004	Banking	Supports TRA
Choong	USA & China	1998	Brand loyalty	Supports TRA
George	USA	2004	Int. Purchasing	Supports TRA
Summers et al.	USA	2006	Luxury products	Supports TRA
Lee & Littrell	USA	2005	Int. Purchasing	SupportsTRA
Hansen et al.	Denmark	2003	Online grocery shopping	Supports TRA
Patry & Pelletier	USA	2001	Alien abductions	Supports TRA
Sejwacz et al.	USA	1980	Dieting	Supports TRA
Greene et al.	USA	1997	Using Condoms	Supports TRA
Sparks et al.	USA	1995	Food consumption	Supports TRA
Marks	USA	1996	Medical	Supports TRA
Shappard et al.	USA	1988	Meta analyzed	SupportsTRA
Sharon et al.	USA	1997	Medical	Supports TRA

Table 2: The Profile of Respondents (N=304)

Demographics Variables		Frequency	Valid Percent %
Gender	Male	203	66.7
	Female	101	33.3
Education Level	High school	100	32.8
	Bachelor Degree	146	48
	Master Degree	58	19.2
	Doctoral Degree	0	0
	18 – 25	11	0.30
Age	26 – 35	168	55.2
	36 – 45	74	24.4
	46 and above	51	16.7
Income	Less than 5000 SAR	82	26.9
	5000-less 10000 SAR	78	25.7
	1000-less 15000 SAR	111	36.6
	15000 SAR and over	33	10.8
Frequency of online banking	Never	48	15.7
	Twice per year	0	0
	Monthly	133	43.7
	Weekly	84	27.6
	Daily	39	12.8

Table 3: Exploratory factor analysis (EFA)

Variable	Code	Attributes	Factor Loadings
Actual usage	USAGE1	The internet is a reliable way for me to take care of my personal affairs.	0.755
	USAGE2	Usage frequency	0.653
Behavioral intention	INT1	Plan to use IB	0.657
	INT2	Intend to use it within the next three months	0.649
	INT3	Add IB to my favorite links	0.589
Attitude	ATT1	Using IB would be a wise idea	0.755
	ATT2	Using IB is a good idea	0.672
	ATT3	I like to use IB	0.736
Subjective norms	SN1	People important to me would think that using IB would be a wise idea	0.753
	SN2	People important to me would think that using IB is a good idea	0.701
	SN3	My family important to me would think that using IB would be a wise idea	0.684
	SN4	My family important to me would think I should use IB	0.834
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.870	
Variance		90.227	
Approx. Chi-Square		5612.360	
Df		45	
Sig.		0.000	

Table 4: Reliability analysis for each construct

Variable Name		No of Items	Mean (Std. Dev)	Cronbach Alpha	Composite Reliability
Endo 1	Actual usage	2	3.831 (0.795)	0.788	0.940
Endo 2	Intention	3	4.098 (0.823)	0.736	0.919
Exo 1	Attitude	3	3.954 (0.867)	0.748	0.913
Exo 2	Subjective Norm	4	4.190 (1.182)	0.541	0.779

Table 5: Distributional Characteristics Testing for Normality

Construct	Skew. Stat.	Std. Error of Skew	Z -Value	Kurtosis. Stat	Std. Error of Kurtosis	Z -Value
USAGE1	0.235	0.125	1.880	0.423	0.249	1.69
USAGE2	0.207	0.125	1.6556	0.614	0.249	2.46
INT1	0.199	0.125	1.592	0.836	0.249	3.35
INT2	0.230	0.125	1.840	0.671	0.249	2.69
INT3	0.234	0.125	1.872	0.615	0.249	2.46
ATT1	0.057	0.125	0.456	0.902	0.249	3.62
ATT2	0.053	0.125	0.424	0.878	0.249	3.52
ATT3	0.113	0.125	0.904	0.808	0.249	3.52
SN1	0.029	0.125	0.232	0.919	0.249	3.69
SN2	0.189	0.125	1.512	0.564	0.249	2.26
SN3	0.243	0.125	1.944	0.571	0.249	2.29
SN4	0.204	0.125	1.640	0.658	0.249	2.64

The Z values are derived by dividing the statistics by the appropriate standard error of 0.125 (Skweness) and 0.249 (Kurtosis), Hair et al. (2006).

Table 6: Confirmatory factor analysis (CFA) of all measurement and structured model (Goodness-Of-Fit indices)

CFA Model	df	CMIN	CMIN/df	TLI	NFI	GFI	AGFI	CFI	REMSEA
Actual usage	2	2.265	1.133	0.999	0.999	0.997	0.986	0.999	0.019
intention	2	3.155	1.577	0.997	0.997	0.996	0.979	0.999	0.039
Attitude	2	2.141	1.070	0.999	0.998	0.997	0.986	0.999	0.014
Subjective norms	2	2.328	1.164	0.999	0.999	0.997	0.985	0.999	0.021

Table 7: Test of Convergent Validity of hypothesized Model

Factor	Indicators	Loading Std. regression estimate	Measurement error	AVE
Actual usage	USAGE1	0.939	0.040	0.988
	USAGE2	0.963	0.034	
Behavioral intention	INT1	0.930	0.049	0.972
	INT2	0.959	0.045	
	INT3	0.879	0.046	
Attitude	ATT1	0.872	0.048	0.978
	ATT2	0.869	0.039	
	ATT3	0.859	0.038	
Subjective norms	SN1	0.888	0.040	0.979
	SN2	0.922	0.034	
	SN3	0.935	0.049	
	SN4	0.908	0.034	

Table 8: Hypothesized Model (Goodness-Of-Fit indices)

Measures		Fit Indices	Threshold Values
Absolute Fit Level	RMSEA	0.051	Less than 0.08
	GFI	0.921	0.90 and Above
	P- Value	0.000	P- Value ≥0.05
Incremental Fit Level	AGFI	0.901	0.90 and Above
	CFI	0.983	0.90 and Above
	TLI	0.980	0.90 and Above
	NFI	0.966	0.90 and Above
Parsimonious Fit Level	CMIN/df	2.006	Less than 2.0
	SMC (R^2)	0.720	Bigger better

Table 9: Direct, Indirect, and Total Effects of Hypothesized Model

Endogenous Variables Actual behavior			
	Indirect effect	direct effect	Total effect
SN	0.341**	0.041	0.300**
Attitude	0.044	0.719**	0.763**

Table 10: Regression Wight for Hypotheses Testing Result (H. Model)

H	Regression Weights		Estimate	SE	C.R.	P	Hypothesis Support
	From	To					
H1	SN	Intention	0.515	0.069	3.503	***	Asserted
H2	Attitude	Intention	0.358	0.037	7.292	***	Asserted
H3	intention	Actual behavior	0.222	0.051	7.317	***	Asserted

Table 11: Regression Wight of Model Generating (MG)

H	Regression Weights		Estimate	SE	C.R.	P	Hypothesis Support
	From	To					
H1	SN	Intention	0.258	0.030	8.668	***	Asserted
H2	Attitude	Intention	0.348	0.037	9.792	***	Asserted
H3	intention	Actual behavior	0.818	0.053	15.396	***	Asserted
New	Attitude	Actual behavior	0.679	0.048	14.086	****	Asserted
New	Attitude	SN	0.359	0.039	11.026	****	Asserted

Table 12: Comparison between Hypothesized, Original and Model Generating

Hypoth esis	From	Mediation	To	Hypothesized Model (SC)			Model Generating (GM)		
				Estimate	P	hypothesis Asserted	Estimate	P	hypothesis Asserted
H1	SN	--	INT	0.280	***	Yes	0.120	***	Yes
H2	ATT	--	INT	0.420	***	Yes	0.137	***	Yes
H3	SN	INT	ACT	0.517	***	Yes	0.524	***	Yes
H4a	ATT	INT	ACT	0.676	***	Yes	0.679	***	Yes
H4b	INT	--	ACT	0.232	***	Yes	0.225	***	Yes
New Path	ATT	--	ACT	0.227	***	Yes	0.184	***	Yes
Modification Indices									
Goodness-of-fit				Goodness-of-fit			Goodness-of-fit		
CMIN				371.0			355.460		
df				185			339		
CMIN/df				2.006			1.049		
GFI				0.921			0.940		
RMSEA				0.051			0.011		
TLI				0.980			0.999		
CFI				0.983			0.999		
P-value				0.000			0.259		
SMC (R^2)				0.72			0.77		

Table 13: Studies suggesting modification to TRA theory.

Authors	Year	Findings
Hansen et al.	2008	Path from subjective norm to attitude better fit
Candan et al.	2008	Strongly suggested external variables to improve the power of the TRA theory
Summers et al.	2006	RA has not been focused enough on external factors in past studies
Malhotra & McCort,	2001	Consumers express their attitudes towards products from different countries unequally
Dillard & Pfau,	2002	1-need external variables to show better fit model, 2-SN & ATT have positive relation "statistical problem", Attitude strong direct effect ACT.
Park	2000	High correlation between subjective norms constructs and attitude construct
Miniard & Cohen,	1981	High correlation between subjective norms constructs and attitude construct
Javalgi et al.	2005	TRA should be revised, extended or modified to take into account the rapid changes that have taken place in other environment
Bagozzi et al.	2000	Norms' explanatory power was relatively weak, even though significant
Bentler & Speckarts	1981	Direct significant relationship between attitude and actual behavior.
Ajzen and Fishbein	1975, 1980	Other variables effects intention or behavior will be indirectly through attitude and subjective norms
Kim & Hunter	1993	Direct significant relationship between attitude and actual behavior.
Chang	1998	Path from subjective norm to attitude better fit to TRA model
Sheppard et al.	1988	Strongly stated that TRA predicts consumer intentions and behavior and the change in consumer behavior.