Investigating the Effect of Digital Technologies, Energy Consumption and Climate Change on Customer's Experience: A Study from Indonesia

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ABSTRACT

The objective of this study is to investigate the effect of digital transformation, energy consumption and Climate change on customer experience in the region of Indonesia. Research design is based on primary data collection through structural questionnaire. For customer experience, two factors under the title of hedonic and recognition are finalized. Digital transformation is observed through smart technologies. A sample of 282 respondents from Indonesian economy is selected and confirmatory factor analysis CFA is applied. All items of selected variables reflect reasonable factor loading, providing a good way for the regression analysis. Findings through regression indicates that awareness of smart technologies is increasing customer's experience in the form of entertaining, sense of comfort and educational. Learning of smart technologies has a significant influence on customer experience through entertaining and educational. Renewable energy consumption factor (usage of gas is friendly) has a significant and direct influence on all items of hedonic except sense of comfort. For recognition, all items are directly and significantly affected by the GFRIENDLY except sense of beauty. This study has significant covered the literature gap from the context of digital technologies, consumption of energy from new sources and climate change for better customer experience. Managerial implication of the study provides an evidence for the relevant experts in their field.

Keywords: Digital Transformation, Energy Consumption, Climate Change, Factor Analysis
JEL Classifications: N70, Q54

1. INTRODUCTION

The usage of smart technologies like cell phones, tablets and similar other devices are very much popular among all the member of the society and are widely accepted in the community (Grewal et al., 2017; Palmatier et al., 2006). The concept of technology is known as smart when it is connected to the internet. When such devices are connected to the internet, people have more opportunities to analyze the services being provides by various companies. Such experience has led to the customer expectation for the better services from various retailers and other business units in the local market (Immonen and Sintonen, 2015). Although various studies have provided their contribution for the smart technologies, its usage and customer experience, yet academic work investigating this topic has some regional limitations. Those studies covering the title for the customer experience are mainly associated to the management books or journals (Mascarenhas et al., 2006; Meyer and Schwager, 2007; Verhoef et al., 2009). In various developed economies, concept of total customer experience for the lasting customer loyalty has got significant attention under the situation of globalization, market saturation and commoditization. There are some studies providing their significant work for the utilitarian (perceived usefulness and perceived ease of use) and hedonic title for the fundamental

resources, covering the brand equity in the domain of mobile and similar other products. The concept of hedonic indicates the entertainment and aesthetics dimensions (Bridges and Florsheim, 2008; Gentile et al., 2007; Senecal et al., 2002).

Defining and improving the experience of the customer is an ongoing priority for the business management. The reason is that it is replacing the concept of quality through increasing competitive advantage among the markets and among the business firms as well. Since the time of 1980s, customer experience is increasing day by day due to the factor of total quality management, covering the dimensions of quality and customer expectations (Klaus and Maklan, 2013).

Renewable energy consumption (REC) has got significant attention in existing literature from the context of trade (Amri, 2019), development stages (Nguyen and Kakinaka, 2019), economic growth (Ozcan and Ozturk, 2019), total factor productivity through fossil fuel (Rath et al., 2019) and some other fields as well. However, from the context of customer experience, very little literature work is presented. During the time of 1990s, REC is observed while taking the idea of customer demand for the green power marketing (Wiser, 1998). But the gap for the customer experience through hedonic and recognition approach and REC is still presented. Meanwhile, factor of climate change for the better customer experience is also missing from literature part. This study is conducted to analyze the customer experience through two major indicators like hedonic and recognition with usage of smart technologies, REC and climate change from the context of Indonesia. The rest of the paper is as follows. Next section covers the literature discussion for the variables. Section three indicates the key variable and their items. Section four expresses the methods and sample. Section four explains the analysis and discussion. Last section provides a conclusion of the study.

2. LITERATURE REVIEW

The idea of customer experience is very well addressed through empirical and theoretical studies. For instance, (Sjödin and Kristensson, 2012) have examined the concept of customer experience through co creation during the innovation of the services. Items of co-creations are discussed through new concern for the knowledge of the customers, expressed and imputed needs through a regular guest survey. Overall, 29 in-depth interviews are conducted for the innovation in service. Findings of the study indicate that participants of the projects have their mixed opinion regarding the services through innovation. Izogo et al. (2018) have analyzed the customer experience for the behavior towards the various policies, defined by the Government. a total sample of 283 participants are approached through mall-intercept. Out of total sample, 246 are found to be significant for the analysis. Based on the collected data, it is observed that loyalty of the customers arises from the implementation of the various policies of the Government. Core categories of the customer experience cover hedonic, rational and followed by the utilitarian approach. However, study considers various limitations like observation of customer experience in future through longitudinal design. Meanwhile, practical implications indicates that research findings

play out effective role to study the customer experience in the field of service sector. Tseng et al. (1999) explains the idea of mapping the customer experience through operational improvements. It is observed that services operations of the business are mainly linked to the customer experience. Foroudi et al. (2018) expressed that for the customer experience, commitment to learn has its significant effect on the participation and other customer dynamics. While customer dynamics have their direct influence on their experience in retailing business environment. Meanwhile, smart technologies affect those customers who are traditional in decision making process.

Parise et al. (2016) covers the situation of crisis of immediacy while taking the digital technologies and customer experience as key variables. It is expressed that marketers in the recent time are facing the issue of immediacy challenge in the shape of meeting consumer needs, expertise, and personalized solution. In digital technologies, video conferencing and other smart technologies are known as high information exchanger between the brand and their consumers. For this purpose, an in-depth interview is conducted with 35 retailers (Ale, 2018; Haseeb et al., 2019). Findings of their study indicates that there are two major technology models, helping the business organizations to support the immediate needs of the customers for better experience. Both models are exampled through company example within the framework of appropriate and success factors for the managers. Some other studies have also provided their contribution in the field of smart technology and customer experience (Berman, 2012; Blázquez, 2014; Cook, 2014; Fitzgerald et al., 2014; Jayaram et al., 2015; Marinova et al., 2017; Moreno-Munoz et al., 2016; Roy et al., 2017; Verhoef et al., 2017; Altıntaş and Yacouba, 2017). In addition, REC is empirically examined under the situation of reconstruction of US market and customer's expectations (Heiman, 2006). On the other hand, (Wiser, 1998) expressed his opinion for the green power marketing for consumer demand and renewable energy.

3. DESCRIPTION OF VARIABLES

This study considers the customer experience as main dependent variable. Customer experience is measured through two major factors; hedonic and recognition. Both considers the definition of overall experienced of the customer with the business, taking the concept of interaction and thoughts for the business as main dimensions. For hedonic experience, items like memorable, experience, entertaining, and exciting are added in the structural model. These items are finalized from the study of (Foroudi et al., 2018; Otto and Ritchie, 1996), who have observed these items for the service experience of customers in tourism industry and retail store. Some other studies have also selected the concept of hedonic and recognition as indicators of customer experience (Bruwer and Rueger-Muck, 2018; Lemon and Verhoef, 2016; Zheng et al., 2016; Żyminkowska, 2018) For the factor of recognition, six items under the title of felt important, felt respected, felt welcomed, safety, sense of beauty and relational are selected. All these items are reflecting the significant idea of customer experience. These items are measured through five-point Likert scale, ranging from strongly disagree to strongly agree.

Digital technologies consider the two process. The first one is entitled as digitized information which records the relevant information into binary codes of zero and one. This coding considers the bits which represents the world and images. Usage of various devices like cellular phones through internet are observed for the digital technologies (Aldulaimi and Abdeldayem 2018; Haseeb et al., 2019). Usage of smart technologies indicates the way customers are aware for the usage of that specific technologies. This study has observed smart technologies are first explanatory variable, measured through the factors of awareness (Wilson et al., 2017), learning, understanding and adaption. These items reflect the customer attitude towards the usage of smart technologies, especially in early stage of digital development, like in Indonesia (Ahmed et al., 2017; Das et al., 2016, Mihardjo et al., 2018; Aldulaimi, 2018).

RECs consider upgraded sources of energy. These are under the title of solar, wind power, hydroelectric and biomass as well. To reflect the effect of REC is observed through various items on the Likert scale of five point. These are under the title of renewable energy sources are unlimited, fossil fuel consumption, (F.Fuel), grass is friendlier (G.Friendly) provision of incentive for fossil fuel (Incentive), Lease/rent option for renewable energy sources (L.Rent_Option), and urgent change towards renewable energy (C2RE). For the factor of climate change, three items are added in the models. First one reflects the limited work towards the reduction of climate change (Obg_2_CL_CHng), responsibility of everyone to work for the reduction of climate change (Responsible), and overall concern of individuals towards climate change (Concern_4_ClChange). All these items are measured on the similar scale of five points.

4. METHODS AND SAMPLE

This study follows the approach of primary data collection through questionnaire approach. At first, various items for the customer experience, smart technologies, REC and climate change are selected. For customer experience, two variables under the title of hedonic and recognition are finally selected with total 12 items. For usage of smart technologies, four items are finally added in the questionnaire. For REC, six dimensions are selected and for climate change three factors are finally added. After the development of structural questionnaire, respondents from the economy of Indonesia observe for the data collection of the study. targeted respondents from both male and female genders with higher school, undergraduate and post graduate level of education. The age distribution is finally considered the range of 19-60 years and more. A sample of 350 questionnaires were distributed to the targeted respondents within a time frame of 3 weeks of filling. after the specified time, hard copies of questionnaire are collected. After the detailed review, it is found that almost 58 copies of the questionnaire are found to be missing with the respondents are rejected from the final sample. A corrected sample of 282 respondents is lastly to be finalized. Both factor analysis and regression analysis are applied on the data.

5. ANALYSIS AND DISCUSSION

Under analysis portion, factor analysis has been performed at the very first step. For customer experience, 12 dimensions are selected from existing literature, covering the title of memorable, exciting, entertaining, sense of comfortability, educational, novelty, felt important, felt respected, felt welcomed, safety, sense of beauty and relational. Confirmatory factors analysis through AMOS-21 version. A structural model is developed and presented below, covering the error terms along with 12 items of customer experience in Figure 1. Figure 2 presents the standardized estimates for the factor loading of each item. Highest loadings observe for felt important and felt respected (0.91 and 0.96 respectively). For sense of comfort, factor loading is 0.89 while sense of beauty indicates a loading score of 0.86. For the items like exciting, entertaining, educational safety and relational, factor loading ranges from 0.72 to 0.78. Minimum loading is observed for both exciting and educational.

Structural model and factor loadings for each items of explanatory variables like usage of smart technology, REC, and climate change are presented under Figures 3 and 4. Usage of smart technology is measured through four items under the title of awareness, learning, understanding, and adaption. REC considers six items; REC is limited, fossil fuel consumption, incentives for the consumption of renewable energy, lease/rent option for REC, change to renewable energy (C2RE), and gas is environmentally friendly (G.Friendly). For climate change, three items like obligation towards climate change (Obg_2_CL_CHng), responsible, and concern for climate change (Concern_4_ClChange). Factor loading for U. Smart technology and climate change is above 0.70 while for REC, loadings for incentive and L. Rent_Option is below 0.70, reflecting lowest value for CFA score. However, these items are finally considered for the significant contribution in existing literature regarding REC and reasonable score as per extracted loadings.

Table 1 reflects the descriptive findings. Overall observations are 282, expressing total valid respondents and sample size of the study. All items are measured on five-point Likert scale, ranging from strongly disagree to strongly agree. Except adaption, all items indicate above 3 mean score, and majority have above 4, reflecting that respondents are agreed with the stated queries in the questionnaire. Maximum deviation from the mean belongs to customer experience with the score of 1.28, followed by felt welcomed and awareness. The range of responses are measured through 1-5 measurement.

Tolerance level in all the items of explanatory variables is measured through VIF test as presented under Table 2. Maximum VIF belongs to G. Friendly (Climate Change) is 2.05. Mean VIF is 1.57, reflecting a tolerance range, hence all items are considered for the regression analysis.

Regression findings are presented under Tables 3 and 4 respectively. Model 1 to model 6 considers the dimensions for hedonic (memorable, entertaining, exciting, sense of comfort, educational and novelty). Usage of digital technologies (UODT) considers four items. The item of awareness reflects a significant

Figure 1: Structural model for factor analysis of customer experience
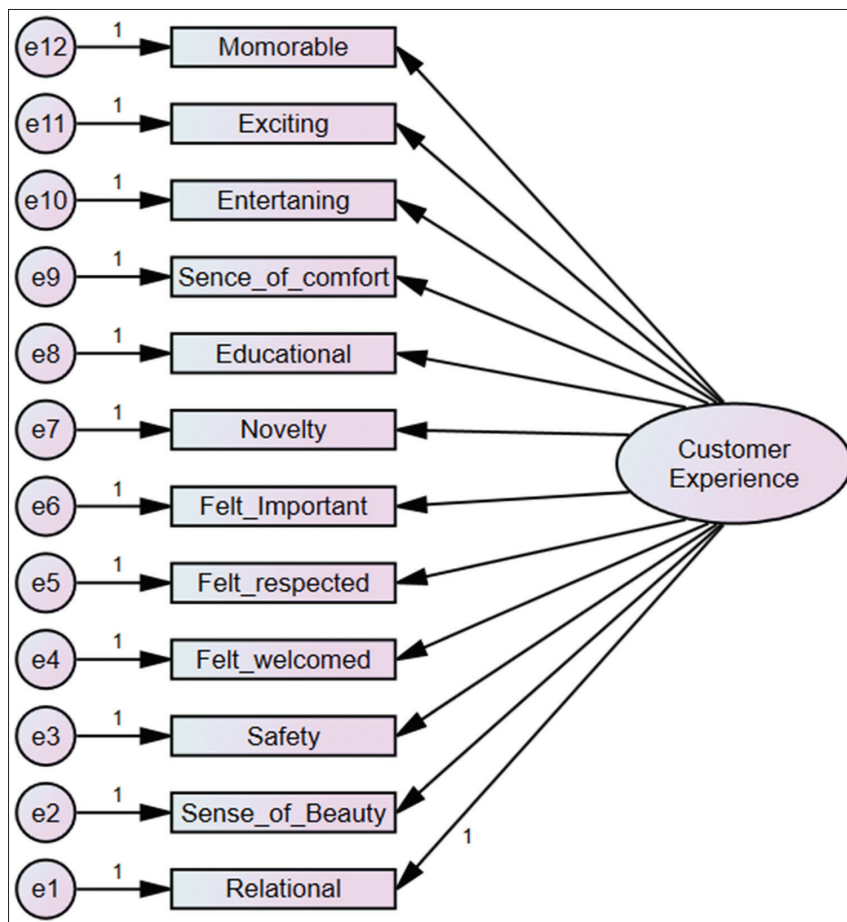
Variable source: (Foroudi et al., 2018)

Table 1: Descriptive findings

Variable	Obs	Mean	Standard deviation	Min.	Max.
MOMORABLE	282	4.79078	1.110699	1	5
ENTERTANING	282	4.542553	1.08038	1	5
EXCITING	282	4.85461	1.108105	1	5
SENCE_OF_C~T	282	4.989362	1.280803	1	5
EDUCATIONAL	282	4.003546	1.17051	1	5
NOVELTY	282	4.705674	1.154553	1	5
FELT_IMPOR~T	282	4.833333	1.10831	1	5
FELT_RESPE~D	282	4.765957	1.135881	1	5
FELT_WELCO~D	282	4.858156	1.205454	1	5
SAFETY	282	3.024113	1.036961	1	5
SENSE_OF_B~Y	282	3.503546	1.057925	1	5
RELATIONAL	282	4.37234	1.022704	1	5
AWARENESS	282	4.606383	1.183078	1	5
LEARNING	282	4.198582	1.120624	1	5
UNDERSTAND~G	282	4.56383	1.105391	1	5
ADAPTION	282	2.631206	1.029192	1	5
RECONSUMPT~N	282	4.503546	0.981132	1	5
REC_UNLIMI~D	282	4.489362	1.030613	1	5
FFUEL	282	4.585106	1.057859	1	5
GFRIENDLY	282	4.099291	1.082405	1	5
INCENTIVE	282	4.847518	1.064542	1	5
LRENT_OPTION	282	4.925532	1.05614	1	5
C2RE	282	4.553191	1.093009	1	5
CLIMATE_CH~E	282	4.390071	1.139851	1	5
OBG_2_CL_C~G	282	4.567376	1.045614	1	5
RESPONSIBLE	282	4.492908	0.984734	1	5
CONCERN_4_~E	282	4.730496	1.022031	1	5

Table 2: Tolerance diagnostic: VIF

Variable	VIF	1/VIF
GFRIENDLY	2.05	0.486622
REC_UNLIMI~D	1.68	0.596322
LRENT_OPTION	1.66	0.604198
FFUEL	1.63	0.614314
ADAPTION	1.58	0.633115
INCENTIVE	1.56	0.639112
AWARENESS	1.55	0.64685
UNDERSTAND~G	1.54	0.648818
C2RE	1.51	0.662503
OBG_2_CL_C~G	1.51	0.664371
CONCERN_4_~E	1.46	0.684985
RESPONSIBLE	1.45	0.689996
LEARNING	1.21	0.828307
MEAN VIF	1.57	

VIF: Variance inflation factor

and positive impact of 0.268 with standard error of −0.0646 on level of entertaining (customer experience). It means that more awareness for the customers of digital technologies significantly increases their entertainment level. For the sense of comfort (Model 4), effect of awareness is 0.181, significant at 5%. It means that more awareness is also putting positive influence on customer experience as measured through sense of comfort. Factor of digital awareness is leading more educational experience for the individuals. Learning attitude through UODT has a significant and positive impact on entertaining with the coefficient of 0.159. This

Figure 2: Factor loadings for customer experience through CFA
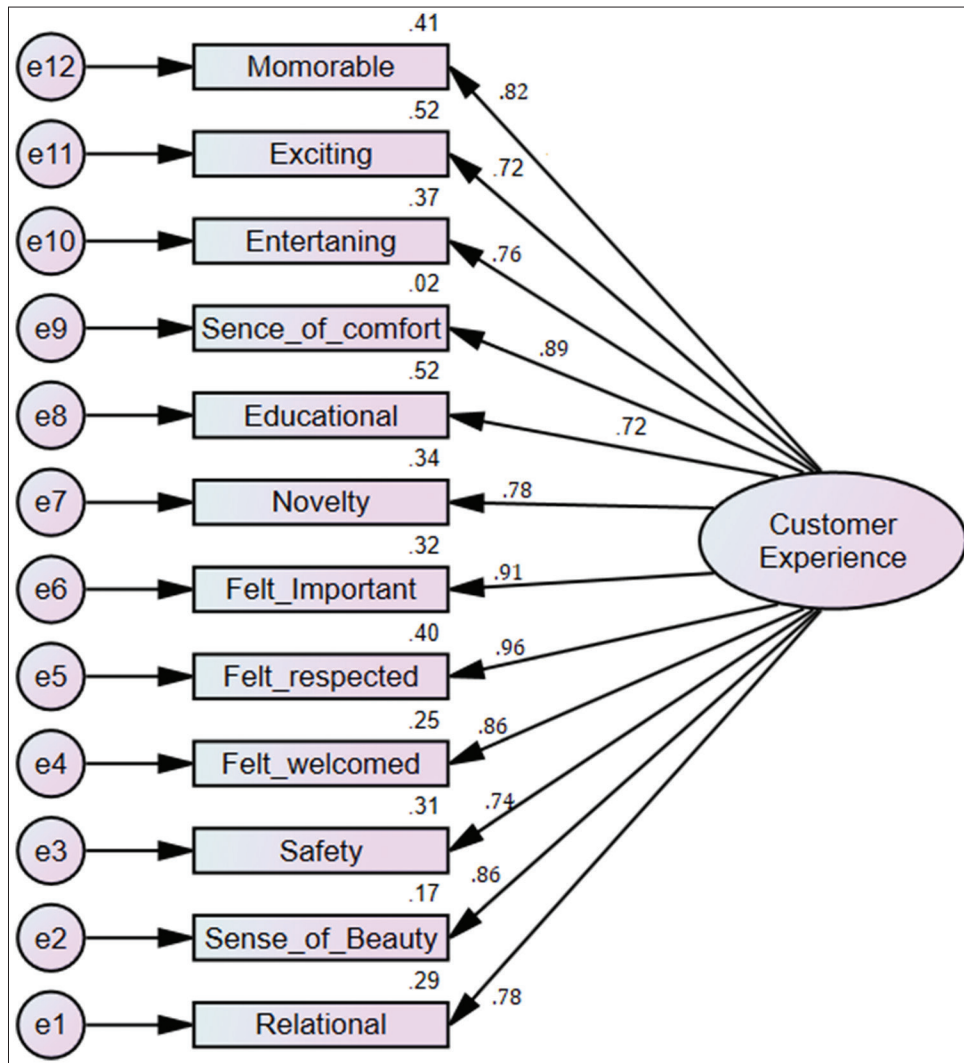
Source: Author's calculation

effect is in favor for the hypothesis that there exists a significant impact of learning on customer experience as entertaining. Effect of understanding on memorable experience for the customers is 0.147, significant at 5%. It explains that more understanding of digital technologies leading to more memorable experience for the customers. Through the factor of adaption, coefficient of 0.118 explains significant and positive influence on entertaining experience. Similar positive and significant impact of adaption on educational experience is observed. The effect of REC factor (UNLIMITED) on exciting experience is 0.162 significant at 5%. But through UNLIMITED, effect is found to be insignificant on all the six dimensions of customer experience hedonic. GFRINEDLY indicates the argument about the friendly usage of gas, comparatively to coal. Its coefficient for memorable, entertaining, exciting, educational and novelty reflects significant and positive impact under full sample findings. Lease/rented option of REC reflects positively significant impact on memorable, exciting, educational and novelty experience of the respondents. While urgent need of REC change has a significant and positive relationship with exciting and educational experience of the customer. Through climate change, it is found that more concern for the climate change leads to more exciting experience for the

customers. Under hedonic experience, overall explained variation is maximum through educational factor, followed by model 3 and model 1 respectively.

For 2nd variable of customer experience; recognition, factors like felt important, felt respected, felt welcomed, safety, sense of beauty and relational are added in model 7 to model 12. Items for the usage of small technologies, effect of AWARENESS on FELT_WELCOMED is 0.168, indicating its significant influence. For SENSE_OF_BEAUTY, its effect is 0.113 and standard error of −0.0602, significant at 10% significant level. These findings imply the fact that more awareness for the usage of small technologies creating more sense of customer experience in the form of feeling welcomed and sense of beauty (Dawabsheh et al., 2019). Similarly, significantly positive influence is observed for the factor of relational. Meanwhile, factor of adaption indicates a significant and direct impact on sense of beauty as customer experience. For the factor of REC: UNLIMITED, it is observed that respondents are feeling more respected with the usage of REC. Similar positive and significant influence is observed for the sense of beauty, relational. Fossil fuel consumption (FFUEL) indicates its direct influence on FELT_WELCOMED and RELATIONAL. GFRIENDLY

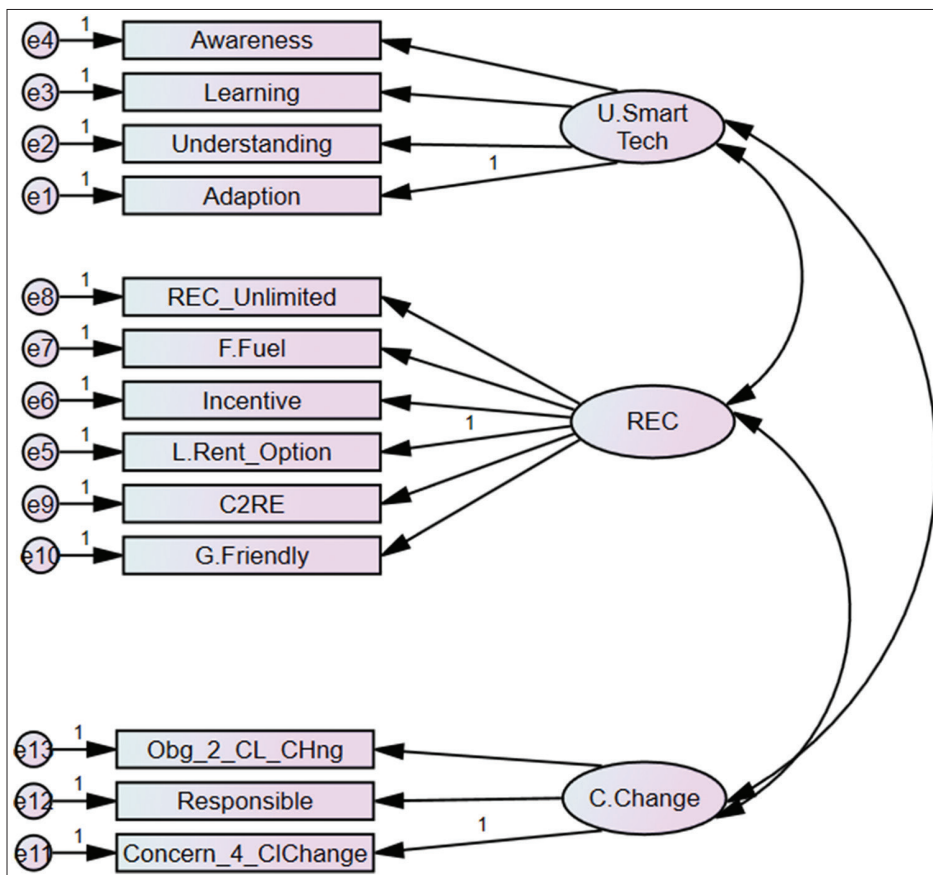**Figure 3:** Measurement model for confirmatory factor analysis (CFA)
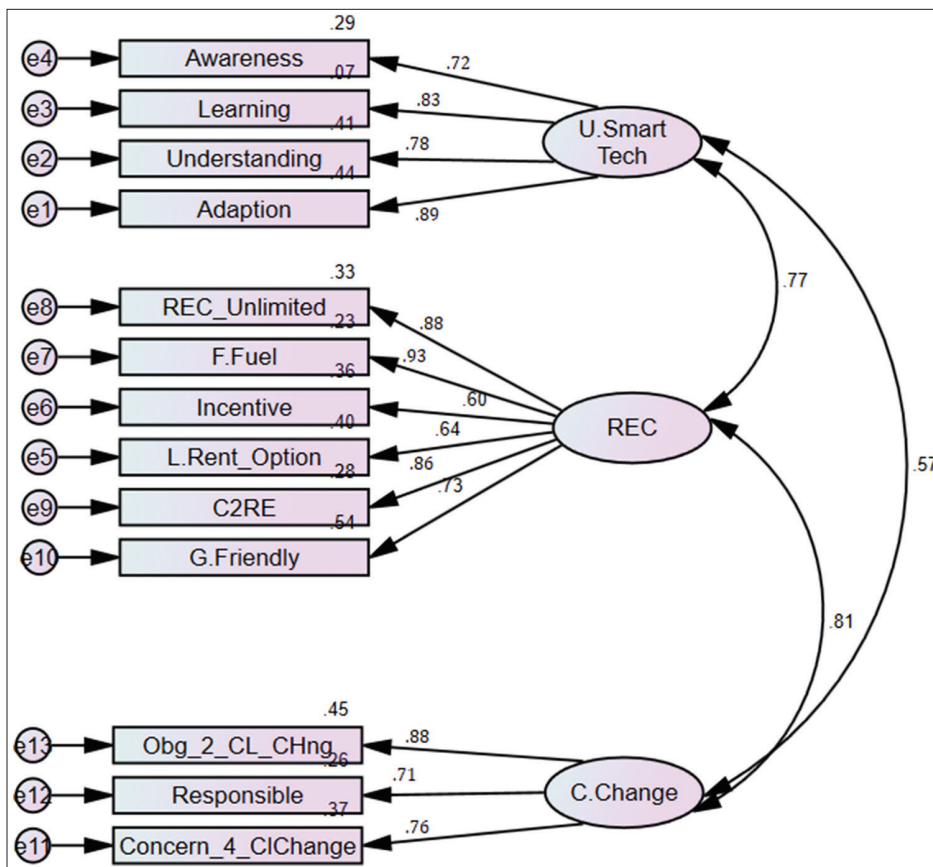

Figure 4: Factor loadings of measurement model (CFA)

Table 3: Customer experience through hedonic (Otto and Ritchie, 1996)

Variables	Model 1 MOMORABLE	Model 2 ENTERTANING	Model 3 EXCITING	Model 4 SENCE_OF_COMFORT	Model 5 EDUCATIONAL	Model 6 NOVELTY
UODT:AWARENESS	0.0229	0.268***	0.0242	0.181**	0.119*	−0.0676
	−0.0668	−0.0664	−0.0646	−0.0808	−0.0624	−0.0617
UODT:LEARNING	−0.0576	0.159***	−0.048	0.127	−0.0791	−0.0487
	−0.0575	−0.057	−0.051	−0.0864	−0.0616	−0.0629
UODT:UNDERSTANDING	0.147**	−0.0713	0.0992	−0.137	0.0601	0.0274
	−0.0705	−0.0651	−0.0613	−0.085	−0.0669	−0.0744
UODT:ADAPTION	0.0668	0.118*	0.0257	−0.0022	0.156**	0.0385
	−0.0673	−0.0676	−0.0619	−0.0872	−0.0755	−0.0704
REC:UNLIMITED	0.0765	0.0908	0.162**	−0.0109	0.0245	0.114
	−0.0715	−0.0762	−0.0731	−0.102	−0.0813	−0.0844
REC:FFUEL	0.123	0.0363	0.0144	−0.0816	0.116	0.190**
	−0.078	−0.0672	−0.0719	−0.0908	−0.0837	−0.0923
REC:GFRIENDLY	0.158*	0.160**	0.193**	0.157	0.135*	0.184**
	−0.0807	−0.0635	−0.0756	−0.0986	−0.0813	−0.0824
REC:INCENTIVE	0.0045	0.0119	−0.0334	−0.0667	−0.0126	−0.0168
	−0.069	−0.0679	−0.0677	−0.0987	−0.0647	−0.079
REC:LRENT_OPTION	0.131*	0.0166	0.280***	−0.0633	0.325***	0.145*
	−0.0678	−0.0676	−0.0617	−0.0921	−0.0623	−0.0832
REC:C2RE	0.0763	0.0329	0.129*	0.0702	0.189**	0.122
	−0.0759	−0.0725	−0.0655	−0.0907	−0.0838	−0.0857
CL:OBG_2_CL_CHNG	0.0948	0.0117	−0.0426	0.0284	−0.0117	0.0481
	−0.0725	−0.0708	−0.0656	−0.101	−0.0724	−0.0726
CL:RESPONSIBLE	−0.0465	0.0609	−0.0045	0.0983	−0.105	−0.0489
	−0.0732	−0.0738	−0.0616	−0.096	−0.0762	−0.0742
CL:CONCERN_4_CLCHANGE	0.0852	0.00594	0.190***	−0.0818	−0.0514	0.0683
	−0.0699	−0.072	−0.0592	−0.0861	−0.0746	−0.0815
CONSTANT	0.476*	0.283	0.0997	2.229***	0.688**	0.840**
	−0.281	−0.258	−0.264	−0.498	−0.338	−0.352
OBSERVATIONS	282	282	282	282	282	282
R-SQUARED	0.349	0.342	0.462	0.053	0.403	0.274

***P<0.01, **P<0.05, *P<0.1. Standard errors in parentheses

Table 4: Customer experience through recognition (Oh et al., 2012)

Variables	Model 7 FELT_IMPORTANT	Model 8 FELT_RESPECTED	Model 9 FELT_WELCOMED	Model 10 SAFETY	Model 11 SENSE_OF_BEAUTY	Model 12 RELATIONAL
UODT:AWARENESS	0.096	0.0629	0.168**	0.0283	0.113*	0.205***
	(0.0674)	(0.0598)	(0.0683)	(0.0511)	(0.0602)	(0.0613)
UODT:LEARNING	0.0173	0.0561	0.0499	0.0675	0.0589	0.0492
	(0.0563)	(0.063)	(0.0546)	(0.0546)	(0.0576)	(0.0445)
UODT:UNDERSTANDING	0.0723	0.00291	0.0499	0.0328	−0.00173	0.0367
	(0.0613)	(0.068)	(0.0633)	(0.0642)	(0.0662)	(0.0574)
UODT:ADAPTION	−0.0467	0.00762	0.0907	0.015	0.204***	0.0623
	(0.0691)	(0.0696)	(0.0884)	(0.0685)	(0.0725)	(0.0588)
REC:UNLIMITED	−0.0822	0.137*	−0.0289	0.0725	0.175**	0.111*
	(0.0766)	(0.0771)	(0.0724)	(0.0707)	(0.082)	(0.0655)
REC:FFUEL	0.103	0.0751	0.147**	0.0953	0.00465	0.143**
	(0.0759)	(0.0829)	(0.0745)	(0.0722)	(0.0694)	(0.0648)
REC:GFRIENDLY	0.144*	0.173*	0.161**	0.361***	0.11	0.124**
	(0.0807)	(0.0895)	(0.0792)	(0.078)	(0.0737)	(0.0625)
REC:INCENTIVE	−0.00466	0.0238	−0.0676	−0.0303	0.0127	−0.0891
	(0.0617)	(0.0754)	(0.0745)	(0.0674)	(0.0726)	(0.0619)
REC:LRENT_OPTION	0.365***	0.049	0.336***	0.0566	−0.0308	0.0362
	(0.0741)	(0.0735)	(0.0814)	(0.0631)	(0.0656)	(0.0603)
REC:C2RE	0.187***	0.266***	0.0303	0.0996	0.0675	0.0139
	(0.0718)	(0.0742)	(0.0645)	(0.0743)	(0.0627)	(0.0613)
CL:OBG_2_CL_CHNG	0.0827	0.0369	0.0289	−0.0146	0.0144	0.108*
	(0.0626)	(0.0669)	(0.0637)	(0.0669)	(0.0658)	(0.0583)
CL:RESPONSIBLE	−0.153**	−0.0306	−0.223***	0.111	0.130*	0.112
	(0.0697)	(0.0722)	(0.0758)	(0.0678)	(0.0706)	(0.0699)
CL:CONCERN_4_CLCHANGE	−0.115*	0.0664	0.0659	−0.0249	0.0583	−0.0497
	(0.0646)	(0.0736)	(0.0763)	(0.0726)	(0.0784)	(0.0604)
CONSTANT	1.260***	0.362	0.759**	0.357	0.205	0.274
	(0.434)	(0.307)	(0.365)	(0.279)	(0.287)	(0.252)
OBSERVATIONS	282	282	282	282	282	282
R-SQUARED	0.315	0.338	0.35	0.384	0.348	0.377

***P<0.01, **P<0.05, *P<0.1. Standard errors in parentheses

reflects its significant and direct impact on all dimensions of recognition except sense of beauty. While LRENT_OPTION has a positive impact on felt important and felt welcomed. Urgent need for the change of renewable energy has a direct impact on first two dimensions of recognition, while other factors have their insignificant association to it. For 2nd proxy of climate change (RESPONSIBLE), significant and negative impact on FELT_WELCOMED and FELT_IMPORTANT. However, positive customer experience is observed through feeling responsible. Rest of the items reflects their no impact on the factor of recognition under full sample. From model 7 to model 12, maximum explained variation is recorded for model 10, followed by model 12 and model 9 respectively.

6. CONCLUSION AND RECOMMENDATION

This study combines the literature context of UODT, and RECs to evaluate their empirical impact on the factors of customer experience through hedonic and recognition. After detailed investigation of the literature, little contribution by the researchers in this regard is identified. A sample questionnaire is developed through various items of smart technologies, renewable energy and customer experience. A final sample of 282 respondents is finally observed for the empirical analysis. Two major analysis are conducted; factor analysis through CFA and regression analysis. Factor analysis indicates the consideration of all the items for each of the variable for the empirical findings, based on the reasonable value of factor loading. Findings of regression analysis reflects that factors like entertaining, sense of comfort and educational are positively affected by the level of awareness. While UODT for learning has a significant and positive relationship with entertaining. For understanding, memorable is positively associated. For the factors of REC (GFRIENDLY) indicates significant and positive influence on all items of hedonic except sense of comfort. For the model 1, highest influenced is observed for the factor of MODEL5. As per the findings for 2nd proxy of customer experience; recognition, sense of awareness significant influence is observed through awareness on feeling welcomed, sense of beauty and relational as well. GFRIENDLY indicates significant influence on all the dimensions of recognition except sense of beauty. While being responsible for the climate change indicates a significant but negative influence on feeling important and feeling welcome under full sample (Jermsittiparsert et al., 2019).

As per author's best knowledge, this is a very first attempt to evaluate the impact of smart technologies, REC and climate change on customer experience. This study argues the fact that customer experience is positively influenced by the factors like UODT, energy consumptions from renewable sources and climate change. Policy makers and administrative to the relevant fields can considers the customer experience through selected factors. Meanwhile, this research is providing an insight into the empirical relationship between the variables for the development of theoretical model in coming time. However, study is limited towards the various points. At first sample is restricted to below 300 which seems to be reasonable but bigger and better representatives from the targeted population can provide more interesting facts. At second, study has not segregated which specific respondents are targeted in the region of Indonesia. In depth analysis through respondents' characteristics can provide better outcome and more reliable facts. Besides, cross sectional analysis for the various respondents across industries can also be implemented in coming researches.

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