

How the Effect of Financial Technology to Financial Inclusions: Study Case At Sumbawa

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Abstract:- This study try to analyze the effect of using Financial Technology (FinTech) "T-Cash" services to financial inclusions with the Technology Acceptance Model (TAM) approach. This study uses quantitative deskriptif approach with Structural Equation Model (SEM) as an analytical tool . The results of the study showed that the construct of ease perceived has significant effect to the perception of usefulness and intention to use behavior, benefit perceptions have no significant effect to intention to use behavior but has a significant effect to actual use. Construct intention to use behavior has no significant effect to actual use, but the actual usage construct has a significant effect to financial inclusion. In addition, only indirect constructs of perceptions of benefits has effect to financial inclusion through actual use, the others none.

Keywords:- Financial Technology, TAM, and Financial Inclusion.

I. INTRODUCTION

The International Commission on Securities (IOSCO) 2017 defines Fintech namely technological innovation information as one business model that will bring changes to the quality of service in the financial industry. Fintech is not now something exclusive. In Indonesia, Fintech's business is dominated by start-ups. In recent years Fintech services have become one of the fastest growing industries in Indonesia. The number of Fintech companies in Indonesia is as follows:

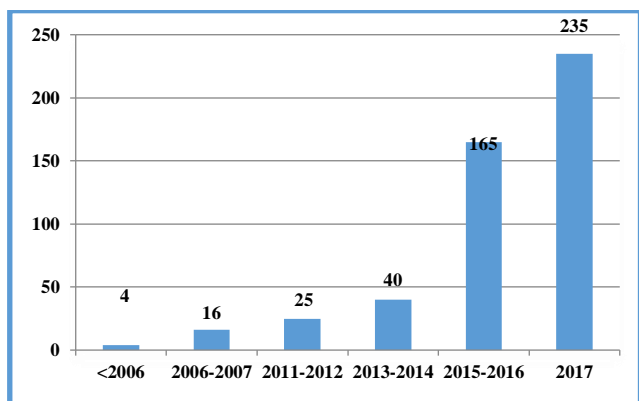


Fig 1:- Number of Fintech in Indonesia

The significant increase in the number of Fintech companies in Indonesia began in 2015. The development of the Fintech company creating opportunities for collaboration between companies. As is done by the largest telecommunications company in Southeast Asia, namely

PT Telkom Indonesia (Persero) Tbk with its subsidiary PT Finnet Indonesia in collaboration with Verifone Mobile Money.

Collaboration was carried out to take the company's strategic steps in creating e-money services, namely by the presence electronic payment platform via T-Cash (Telkom Indonesia, 2017). With T-Cash users can make payments without must carry cash and can do financial transactions wherever and whenever the user is located. In 2017 Telkomsel Indonesia recorded 196.3 million people as active customers of Telkomsel services throughout Indonesia, with T-Cash users up to 2017 are as many as 13 million people.

As a digital financial service, T-Cash has a central role in accelerating Financial Inclusion in Indonesia. Through the use of T-Cash services can help people to get access to broader financial services through convenience transact and save via cellphone. So that it is expected to provide significant benefits for increasing levels life of the Sumbawa Regency West Nusa Tenggara (NTB) Province. The following are the results of the Nusa Tenggara Financial Inclusion index survey West namely:

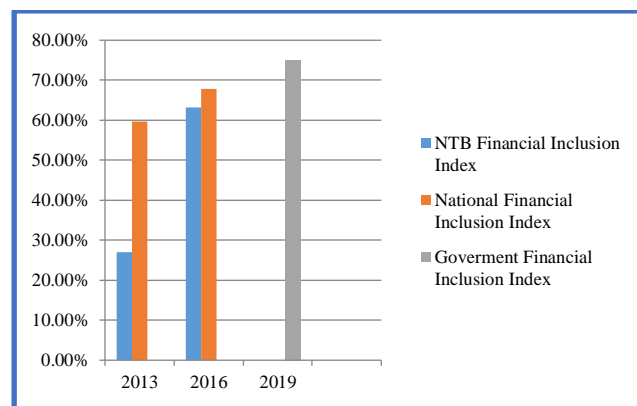


Fig 2:- West Nusa Tenggara Financial Inclusion Index

The National Survey on Financial Literacy and Inclusion (SNLIK) conducted by the OJK shows that the Financial Inclusion index The province of West Nusa Tenggara in 2016 was 62% or slightly lower than the national average of 67.8. While the target of government financial inclusion in 2019 is 75%. Therefore, the government always supports and encourage acceleration of the realization of Financial Inclusion in Indonesia, one of which is through the T-Cash application. The use of a new technology in the community such as T-Cash financial technology services can be analyzed using information technology acceptance model or commonly called the

Technology Acceptance Model (TAM). The first TAM model introduced by Davis in 1989 to discuss how one's internal psychological factors play a role in adopting technology new (Fatmawati, 2015). Muntianah et.al (2012) shows that the construct of Perception Ease influences Perception Benefit, Benefit Perception has an effect on interest in behavior, and interest in behavior influences Actual Use.

Yuliani et.al (2016) shows that Benefit Perception influences Actual Use. Whereas, Abdinoor & Mbaba (2017) shows that the construct of individual awareness, ease of perception and benefit perception affect behavior Intention to use financial services with an intermediate construct is a demographic factor. Meanwhile, the construct of intention to use the service finance has an influence on the financial inclusion of people in Tanzania, East Africa. Other research was conducted by Wansem (2013), namely access and use of financial services influencing Financial Inclusion in Rwanda, East Africa. Besides that, Blythin & Cooten (2017) shows that the Financial Technology company in Nairobi influences the provision of products and access financial services for the people of Kenya, thus driving the Kenyan economy into the middle of the pyramid.

A. Financial Technology (Fintech)

Bank Indonesia (2013) defines financial technology or financial technology as the use of technology in the system finance that produces new products, services, technology and / or business models and can have an impact on monetary stability, financial system stability, and or efficiency, smoothness, security and reliability of the payment system. The classification of the implementation of Fintech in Indonesia according to Bank Indonesia (2013) consists of five categories, namely: the system payment, market support, investment management and risk management, financing loans and capital provision, financial services others.

Blythin & Cooten (2017) shows that Fintech companies can drive the economy through the provision of products and financial services for the community. This availability of access to financial services is called Financial Inclusion. Financial inclusion is all efforts aimed at eliminating all forms of price barriers or non-price, towards people's access to financial services (Bank Indonesia, 2014). World Bank Survey (2010) in Syarifudin (2014) show that only 49% of Indonesian households have access to formal financial institutions. Low access is due to low income levels, complicated bank operational procedures, lack of financial education and banking, bank administration fees are high and the location of the bank is far from where they live. Therefore, Fintech is present provide convenience for the community in obtaining cheap, safe and fast financial services. Fintech can push someone who was previously difficult to even get financial access, became an active consumer of financial services. One example of a well-known payment system is T-Cash. Setiawan (2012) defines Telkomsel Cash (T-Cash) is

a service that allows customers to make financial transactions using cellphones, such as purchasing goods through a store, website, bill payment, money transfer and so on. All of these things can be done anytime and anywhere only by using the customer's cellphone. T-Cash is divided into two types, namely T-Cash TAP and T-Cash Wallet.

B. Technology Acceptance Model (TAM).

The Technology Acceptance Model or acceptance of information technology was first developed by Davis in 1998 which is often used in measuring one's acceptance behavior towards a new technology (Fatmawati, 2015). Reason using TAM is partly because TAM offers a strong and simple explanation for technology acceptance and user behavior (Vanketesh et.al 2003). In addition, according to Chuttur (2009: 17) TAM is a very popular model and often used by researchers to explain and estimate the use of a technology. In the classic TAM model, acceptance of new technology service users is determined by two main constructs, namely Benefit Perception and Ease Perception. Both constructs can reflect a person's behavior towards the use of a new technology, such as technology financial or better known as Fintech. The modification of the TAM model carried out by Chuttur (2009) is as follows:

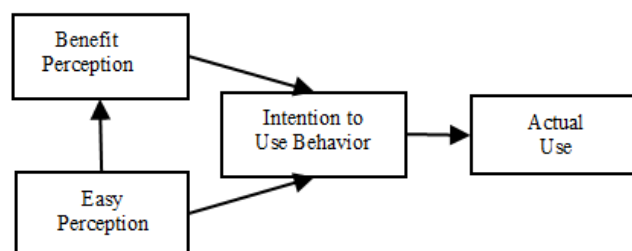


Fig 3

Acceptance of financial technology services by users starts from the Ease of Perception of Benefit Perception. The user financial technology services believe that T-Cash is easy to use so it does not require hard work get or use T-Cash services. Furthermore, the perception of the ease of the T-Cash will affect perception Benefits that will be obtained by users after using T-Cash. In Perception of this benefit, the user forms a the belief that you will use the T-Cash service or not. If the T-Cash service is felt to be beneficial to him then someone will use it, and vice versa if the T-Cash service is not beneficial to him or someone will not use it. From the two perceptions of ease and usefulness, they will influence the user's attitude will accept or reject T-Cash financial technology services. Users who choose to receive T-Cash services will then creating intention to use behavior that will be the tendency of users to continue to use T-Cash. Process the last in TAM is that users will use the T-Cash service continuously with a certain frequency or what is called with actual use. In this stage the user has felt the usefulness of the T-Cash service. This is the stage meant by the actual use of information technology

C. Financial Inclusion

Bank Indonesia (2014) defines financial inclusion as the right of every person to have full access and services from the institution timely, comfortable, informative and affordable costs, with full respect for their dignity and dignity. Financial services are available to all segments of society, with special attention to the poor, productive poor people, workers migrants, and residents in remote areas.

II. RESEARCH METHODS

❖ Population and Sampling Techniques.

The population used is all Telkomsel service users in Sumbawa Regency. The method of determining the sample is the method purposive sampling combined with convenience sampling method. The selected sample criteria are the T-Cash users live and be around the city of Sumbawa. The sample size used was 60 samples.

❖ Data Analysis Techniques

The data analysis technique used is Structural Equation Modeling (SEM). The steps of the analyst are (Jaya & Sumertajaya, 2008):

1. Designing the Inner Model.
2. Designing the Outer Model.
3. Model Evaluation.
 - a. Evaluate the outer model with convergent validity, discriminant validity and composite reliability (Ghozali, 2014).
 - b. Evaluate the inner model using the R-square value, Q-square for predictive relevance, and f-square for effect size (Ghozali, 2014).
4. Resampling Bootstrapping

III. RESULTS

A. Data Analysis

1. Designing the Inner Model produced as follows:

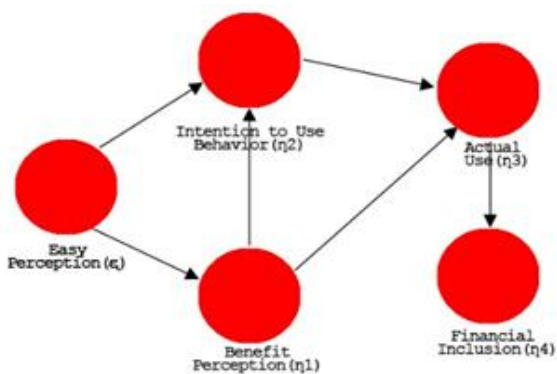


Fig 4:- Designing the Inner Model.

2. Designing the Outer Model.

The indicator properties of each construct on the outer model are reflective as follows:

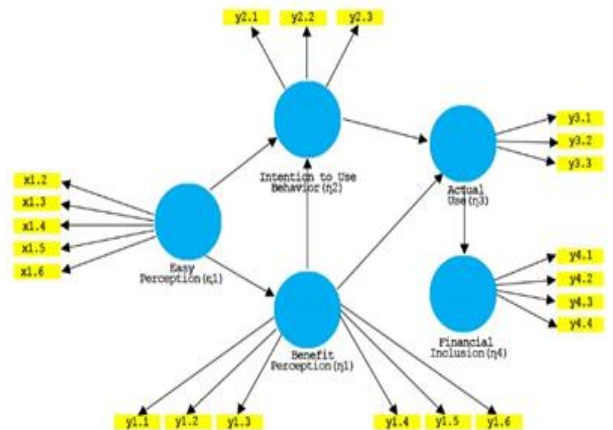


Fig 5:- Designing the Outer Model

3. Model Evaluation.

a. Evaluation of Outer Models

It is required that the reflective indicator size criteria have a good convergent validity value if it correlates more than 0.70. However, Outer loading values of 0.50 to 0.60 can still be maintained for the development stage model (Chin, 1998). The estimation results the model as follows:

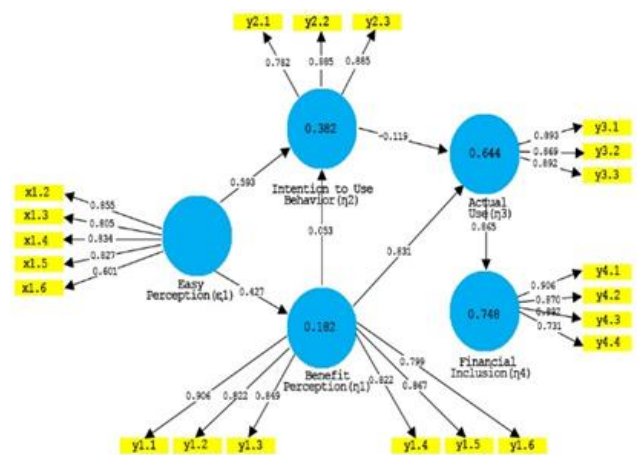


Fig 6:- Output Outer Loading

The next step is evaluating the model by looking at the discriminant value validity as follows:

Indicator	Financial Inclusion	Actual Use	Intention to Use Behavior	Benefit Perception	Easy Perception
y4.1	0.906	0.763	0.167	0.792	0.318
y4.2	0.870	0.780	0.246	0.747	0.290
y4.3	0.892	0.796	0.225	0.728	0.254
y4.4	0.731	0.588	0.309	0.546	0.360
y3.1	0.667	0.839	0.029	0.690	0.127
y3.2	0.745	0.869	0.190	0.673	0.259
y3.3	0.830	0.892	0.131	0.703	0.174
y2.1	0.240	0.090	0.782	0.309	0.470
y2.2	0.230	0.136	0.885	0.243	0.620
y2.3	0.225	0.116	0.885	0.238	0.458
y1.1	0.762	0.712	0.249	0.906	0.344
y1.2	0.715	0.688	0.127	0.822	0.184
y1.3	0.805	0.763	0.275	0.849	0.302
y1.4	0.582	0.515	0.380	0.822	0.568
y1.5	0.800	0.801	0.136	0.867	0.344
y1.6	0.533	0.526	0.390	0.799	0.409
x1.2	0.255	0.191	0.525	0.391	0.855
x1.3	0.286	0.135	0.564	0.309	0.805
x1.4	0.142	0.051	0.447	0.300	0.834
x1.5	0.361	0.215	0.580	0.396	0.827
x1.6	0.403	0.333	0.192	0.274	0.601

Table 1:- Output Discriminant Validity

Another method for assessing discriminant validity is to look at the value of average variance extracted

(AVE). Required the value of $AVE > 0.5$ is declared valid, the result is as follows:

Construct	(AVE)	Status $AVE > 0,50$
Financial Inclusion	0.727	Valid
Actual Use	0.752	Valid
Intention to Use Behavior	0.726	Valid
Benefit Perception	0.714	Valid
Easy Perception	0.624	Valid

Table 2:- Output Average Variance Extracted (AVE)

Besides the construct validity test, a construct reliability test was carried out by looking at the value of Composite Reliability and Cronbach's Alpha. Data has

good reliability if the value of Cronbach's Alpha and Composite Reliability is more than 0.70 (Ghazali, 2014), the results are as follows:

Construct	Cronbach Alpha	Composite Reliability	Status ($> 0,70$)
Financial Inclusion	0.873	0.914	Reliable
Actual Use	0.835	0.901	Reliable
Intention to Use Behavior	0.811	0.888	Reliable
Benefit Perception	0.919	0.937	Reliable
Easy Perception	0.848	0.891	Reliable

Table 3:- Composite Reliability and Cronbach Alpha Outputs

b. Evaluate the inner model.

1) Structural models that have $R\text{-square} > 0.67$ models are declared good, $R\text{-square} > 0.33$ models are declared

moderate, $R\text{-square} > 0.19$ the model is declared weak (Ghazali, 2014), the results are as follows:

Construct	R-Square	Status
Financial Inclusion	0.748	Good
Actual Use	0.644	Moderat
Intention to Use Behavior	0.382	Moderat
Benefit Perception	0.182	Weak

Table 4:- R-Square Output.

2) f^2 for effect size. The structural model which has a value of $f^2 > 0.02$ is weak, the value of $f^2 > 0.15$ is moderate and the value of $f^2 > 0.35$ is large at structural level, the results are as follows:

Construct	Financial Inclusion	Actual Use	Intention to Use Behavior	Benefit Perception
Actual Use	2.967			
Intention to Use Behavior		0.036		
Benefit Perception		1.754	0.004	
Easy Perception			0.466	0.223

Table 5:- F-square output

3) Predictive relevance (Q-square). The magnitude of Q² has a value with a range of $0 < Q^2 < 1$, where the closer to 1 indicates the model is getting better (Jaya & Sumertajaya, 2008). The Q-square value can be calculated as follows:

$$Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)(1 - R_3^2)(1 - R_4^2)$$

$$Q^2 = 1 - (1 - 0.182^2)(1 - 0.382^2)(1 - 0.644^2)(1 - 0.748^2)$$

$$Q^2 = 1 - (0.967)(0.854)(0.585)(0.440)$$

$$Q^2 = 1 - (0.212) = 0.788 = 78\%$$

4. Bootstrapping resampling

The test statistic used is t statistic with the value of t comparator is t-table with a significance level of 5% = 1.96. The research hypothesis proved significant if the T-statistic value was > 1.96. Output Path Coefficients as follows:

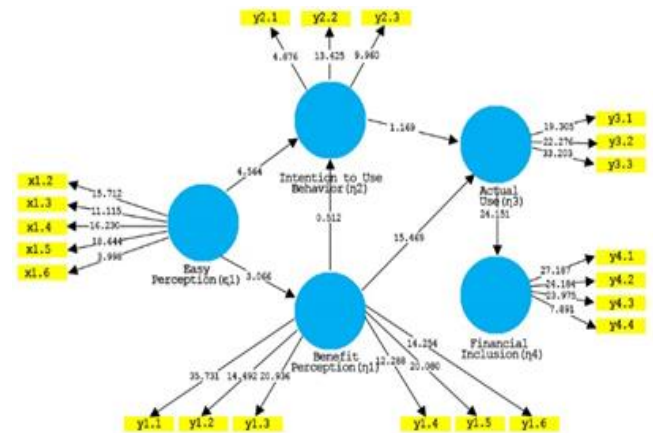


Fig 7:- Output Path Coefficients

The relationship between constructs can be seen in the original sample as follows:

Construct	Original Sample (O)	T Statistics (O/STDEV)	Status (T Statistik > 1,96)
(1)	(2)	(3)	(4)
Actual Use -> Financial Inclusion	0.865	24,151	Significance
Intention to Use Behavior -> Actual Use	-0.119	1.169	Insignificant
Benefit Perception -> Actual Use	0.831	15.469	Significance
Benefit Perception -> Intention to Use Behavior	0.053	0.512	Insignificant
Easy Perception -> Intention to Use Behavior	0.593	4.564	Significance
Easy Perception -> Benefit Perception	0.427	3,066	Significance

Table 6:- Original Sample Outputs

The equation models obtained are as follows:

$$\eta_1 = 0.427 \xi_1 + \zeta_1$$

$$\eta_2 = 0.593 \xi_1 + 0.053 \eta_1 + \zeta_1$$

$$\eta_3 = 0.831 \eta_1 - 0.119 \eta_2 + \zeta_1$$

$$\eta_4 = 0.865 \eta_3 + \zeta_1$$

Based on the results of column four on the output path coefficients there are four significant direct effects of constructs and two insignificant construct. In addition, there is also an indirect effect of the construct of Perception of Use on the inclusion construct Finance through the Financial Inclusion construct, others have no effect.

B. Development Model of TAM Theory

The theory development model in this study is a further development of the technology acceptance process community finance for financial inclusion using the Technology Acceptance Model (TAM) approach. This model based on the data of users of the most T-Cash services in the Sumbawa community, the age range is 25 years and under. Of the total sample of 60 respondents, as many as 41 users of T-Cash services are students. Total this represented 68.3% of the study sample. The results of testing the hypothesis are as follows:

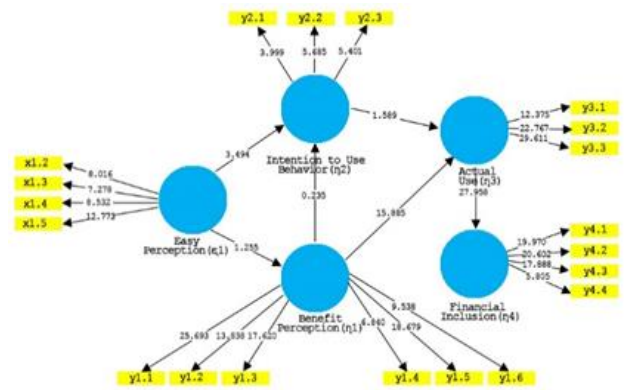


Fig 8:- Output Path Coefficients

The relationship between constructs can be seen in the original sample as follows:

Construct	Original Sample (O)	T Statistics (O/STDEV)	Status (T Statistic > 1,96)
(1)	(2)	(3)	(4)
Actual Use -> Financial Inclusion	0.892	27.958	Significance
Intention to Use Behavior -> Actual Use	-0.177	1.589	Insignificant
Benefit Perception -> Actual Use	0.847	15.885	Significance
Benefit Perception -> Intention to Use Behavior	0.029	0.235	Insignificant
Easy Perception -> Intention to Use Behavior	0.628	3.494	Significance
Easy Perception -> Benefit Perception	0.264	1.255	Insignificant

Tebel. 5.1 Original Sample Output

Based on the output path path coefficient above shows that there are similarities and differences in the results of hypothesis testing between a sample of 60 respondents who have an age range of 15-35 years with a sample of 41 respondents who have a age range of 15-25 year. The similarity is that Ease Perception is both positive and significant effect on Intention Behavior Using, Benefit Perception has a positive and not significant effect on the Behavior of Using Intentions however positive and significant effect on Actual Use, Use Intentional Behavior has a negative and insignificant effect towards Actual Use and Actual Use that have a positive and significant effect on the community's Financial Inclusion Sumbawa.

The difference is that there is a positive effect but not a significant perception of ease of perception of usefulness at age 15-25 years while at the age of 15-35 has a positive and significant influence on Benefit Perception. Output path results The coefficient shows that the t value of statistics for the construct of Perception of Ease against the construct of Perception of Benefit is smaller of 1.96 which is equal to 1,228 so that the influence given by the Ease of Perception on the construct of Perception of Use is proven not significant. Latent construct coefficient value Ease Perception on the output path coefficient of 0.264, which means there is a positive effect of 26.4% on the construct

of benefit perception and the remaining 73.6% is explained by other factors outside the model. The higher the Perception of Convenience value, the greater the effect on Benefit Perception. The statement is appropriate with research conducted by Mather et. al (2002) which shows that the construct of Ease Perception has a positive effect and not significant to the construct of Perception of Use. The ease of T-Cash service is not a priority for users access T-Cash services for ages 15-25 years, but they prioritize Perception of the Benefits of T-Cash services will provide benefits to its users. In this case, a complicated technology will still be used if it gives benefits for its users. Along with the development of rationality, humans have created technology that is quite complicated, however in the end the technology is used as a tool to achieve human life goals (Ngafifi, 2014). Based on the results of the analysis above, a research recommendation can be produced as follows:



Fig 9

Based on the picture above shows that the Perception of Benefit affects Actual Use and Use Actual effect on Financial Inclusion. Whereas the Ease of Perception is significant towards the Behavior of Using Intention the path must be disconnected and cannot be used because the Perception of Use that is not significant to the Intention of Using Behavior and the Behavior of Intention to Use is not significant to Actual Use.

IV. CONCLUSION

Based on the analysis of the results of the research and discussion in the previous section, it can be concluded that there are similarities and differences in the results of hypothesis testing between samples with 60 respondents who have an age range of 15-35 years with 41 respondents who have a age range of 15-25 years. The equation is that the Ease Perception is both positive and influential significant effect on Intention Use Behavior, Benefit Perception has a positive and not significant effect on Intention Behavior Using but it has a positive and significant effect on Actual Use, Influential Use Behavior negative and not significant for Actual Use and Actual Use that have a positive and significant effect on Inclusion Finance of the Sumbawa community. In addition, there are also indirect effects of constructs on the perception of benefits towards inclusion finance through actual use, others none. Whereas, the difference is that there is a positive influence but not Significant Perceptions of Ease of Perception Benefit at the age of 15-25 years while those at the age of 15-35 have that influence positive and significant to benefit perceptions.

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