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#### Research Article

# An Integrative Approach to Study the Variables of Digital Financial Behavior

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#### **Abstract:**

**Purpose:** The study is conducted with the rationale to develop a normative framework for studying the combined impact of digital competence & financial competence of a person reflected in his digital financial behavior through the application of SEM model.

**Design:** Exploratory research design is used for the study with a sampling size of 450 respondents. Data was collected through online survey designed on Google form. A SEM model was developed by the study indicating the joint effect of digital competency and financial competency of a person on a person's digital financial behavior.

**Findings:** Digital competency of a person is formed from the basic digital awareness & operational efficiency of a person and financial competency of a person is judged from the level of financial awareness, their futuristic attitude & accumulative nature for safeguarding their future. Thus, both these competencies frame the digital financial behavior of a person.

**Originality:** Separate studies on digital literacy & financial literacy have been conducted but very few studies considering all the variables mentioned above are there. This study studies the combined effect of digital awareness, operational efficiency of digital platforms, financial awareness & financial attitude on digital financial behavior of a person.

**Keywords**: Digital awareness, operational efficiency, financial awareness, financial literacy, digital financial behavior.

#### 1. Introduction:

A person is said to be literate if he has the ability to read & write using traditional method of reading & writing (Belshaw, 2011). But this 21<sup>st</sup> century has expanded the scope of being a literate. To survive with

the current world, a person needs to be well aware about the events going around & adapt himself accordingly. Two such aspects of being a literate i.e. possessing financial acumen & possessing digital acumen are the core theme of this study.

Financial acumen is synonymously used for financial literacy which comprises of financial knowledge & skills that helps a person to take financial decision at their own (Shen, Hu, & Hueng, 2018). Basically, it is the ability to make informed financial judgments about oneself & effectively manage own's money. A financially literate person is able to judge the options that are better for investments, options that are risky, options that are safe for long term purpose etc. In the emerging economies, financial literacy has expanded its horizon towards digitalization & now financing is not only limited physical dealing. Rather, it has included digital finance in it which in itself is a new branch. For using digital finance options, a person needs to be digitally literate & equipped with the necessary electronic gadgets.

Digital literacy is defined as a new form of literacy which combines knowledge with multimedia, audiovisual skills, oral & written language, special effects which develop an appropriate level of critical thinking & wider understanding of media (Rantala & Suoranta, 2008; Leu, et al., 2007; Alkali & Amichai, 2004). The current COVID-19 pandemic has taught its importance that how much a person needs to be digitally competent & be aware about its operation as many facilities are available at doorstep only if one knows how to operate it. If still not learnt, this pandemic has opened the door for digital innovation as it proves to be a powerful channel to enhance the flow of knowledge in him (Autor, 2015). All the working fields (education, corporate, industrial, start-ups, banking etc.) have a great contribution of digital literacy in it in this pandemic situation. In the field of education, classes are conducted by online modes, corporate world is shifted to remote working category & work from home is the part of new normal, banking is being regulated by e-payments, RTGS, NEFT, online banking etc., work of start-ups is being limited to a laptop only.

Financial literacy skills & digital skills are complementary with each other as combination of both can improve the potential of a person's financial outcomes (Oggiro et. al, 2019; Autio, et al., 2018). Thus, a person's digital financial behavior is highly dependent on these two skills as these skills decide the level of digital & financial acumen of a person & effect his activities regarding this. In order to have positive digital financial behavior an individual needs to connect with transactional platform, retail agents (if help is needed), smart phone /computer /laptop /tablet etc. (CGAP, 2015).

This paper discusses the combined impact of digital competence & financial competence of an individual's digital financial behavior.

#### 2. Review of Literature

Finance is a means to an end (Karlan et al., 2016) & managing it is not everyone's cup of tea. For better & efficient management of finance, a person needs to be financially literate & be aware of all relevant financial aspects. Financial literacy comprises of financial knowledge & skills which helps a person to take financial decision at their own (Shen et al., 2018). Financial literacy was shown as of utmost importance & a person is stated as finnacially literate if he/she is able to apply this knowledge (Idris et al., 2013). Education is the key factor which influences the financial decisions of any family, for eg. level of savings with or without investments, arrangement for future security, retirement planning, emergency funds etc. (Cole at al., 2012).

Financial education inculated from a very young age mostly from school education can be very influential later in their life & provide them a stable base for taking their financial decisions (Mandell & Klein, 2009; Jhonson & Lewis 2009). Financially educated consumers make better & sound decisions about their family & thus surely gets a hike in their economic position & financial security (Hilgert & Hogarth 2003). In today's era, finance is not only limited to physical appearence but it has opened its vistas towards digital world also. For this, finTech (Financial Technology) has come into existence. Financial technology refers to providing financial services to the consumers with the help of softwares, applications & digital platforms through digital devices such as smartphones, tablets etc. (Huang et al., 2019). Being financially literate benefits the fin-Tech users as they are able to understand things better & avoid bad personal finance outcomes (Yakoboski et al., 2018).

For being a Fin-Tech user, an individual needs to be digitally literate & familiar with the type of electronic gadgets used in it. Being digitally competent is the need of the hour as being aware about the diverse technologies (computer, user applications, smart boards, etc.) as it plays an important role in learning & revealing wider opportunities for collaboration & problem- solving. (Khateeb, 2017). Digital competence is defined as combination of knowledge, kills & attitudes with ICT with digital platform to perform tasks & create knowledge base (Falc et al., 2016). Usage of technologies by a person affects the level of existing technology that how it is absorbed & how new knowledge is accessed (Oggiro et al., 2019). For being digital competent a person must possess: technology proficiency, pedagogical compatibility & social awareness (Zhao et al., 2002).

Financial literacy skills when combined with digital literacy skills can result in better outcomes, (Autio et al., 2018). A person's financial behavior towards digital adaptability & its usage pattern in their daily life frame their actual digital financial behavior which either encourages or discourages to go for digital transactions, e-wallets, online banking etc. (Lusardi & Mitchell, 2014).

Thus, separate studies have been conducted on financial management & its competence and digital behavior with its competence but very few studies are there which combines all these factors & studies its impact on digital financial behavior. Thus, the researcher takes this as a research gap & carries on with the purpose to study their combined effect on digital financial behavior.

#### 3. Research Model & Hypothesis:

With the expansion in use of internet banking & growing demand for online platforms for digital transactions, financial management has taken a new turn in its way & thus there are very limited studies which maps the digital & financial proficiency & then studies its impact on shaping the financial behavior of a person digitally .Although, separate studies on digital banking (Government of Assam, 2020; Huang et al., 2019) & personal financial management (Lusardi, 2008; Muske & Winter, 2004) have taken place but there are very few studies which combines all these studies into a single one. Hence, the researcher decides to combine digital acumen & its usage with financial acumen & behavior towards digital financial behavior (DFB).

After detailed analysis of existing literature & taking into account of research context, two constructs of digital financial behavior i.e. digital competency & financial competency & its consequences were empirically studied.

# 1. Digital Competency:

Digital competence is defined as combination of knowledge, kills & attitudes with ICT with digital platform to perform tasks & create knowledge base (Falc et al., 2016).

H<sub>01</sub>: There is no significant impact of digital competency on digital financial behavior.

### 2. Financial Competency:

Financial literacy comprises of financial knowledge & skills which helps a person to take financial decision at their own (Shen et al., 2018) & how person uses this for his own states his financial competency.

 $H_{02}$ : There is no significant impact of financial competency on digital financial behavior.

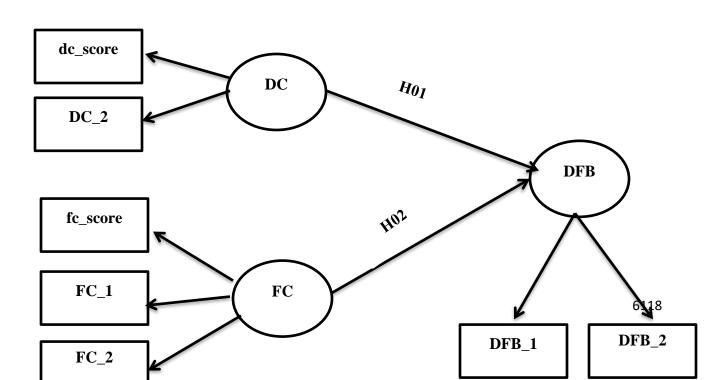
### 3. Digital Financial Behavior:

There is no perfect definition of digital financial behavior in previous researches but digital financial literacy was defined as digital mode of financial literacy (Prasad & Meghwal, 2017) & the usage of digital platforms for taking financial decisions frame the financial behavior of an individual.

# 3.1. Objectives of the Research:

The study was conducted with the objective to develop a normative framework for studying the combined impact of digital competence & financial competence of a person reflected in his digital financial behavior.

### 3.2. Research Model:



# Figure No.: 1

Source: Author's Analysis

Note: DC-Digital Competency, FC-Financial Competency, DFB-Digital Financial Behavior

# 4. Methodology:

#### 4.1 Procedure:

Data for the study was collected between November 2020 to January 2021 from the respondents who were internet banking users. Data collected from the respondents who does not use internet banking was discarded. The questionnaire was prepared by taking input from various existing literatures. However, some questions/statements were modified to suit the requirement & new questions/statements were added wherever it was felt necessary. Respondents were approached by sharing a questionnaire online, created on Google form. Pilot testing of the questionnaire was also carried out to know the possible errors & to check whether the respondents were able to understand the questions. A pilot survey was administered to 30 respondents who were using internet banking through various platforms. As a result some questions were removed & some statements were revised. Thus, revised questionnaire was shared with more than 500 users, out of which 450 responses were finally considered to be suitable for further analysis. Here, exploratory research design is used for the study.

# 4.2 Measures

The questionnaire has 25 questions , 4 related to respondent's profile, 7 about respondent's technical awareness & usage & rest are explained further in the next section. The total sample size of 450 individuals is composed of 48% females & 52% males. Majority of the sample belongs to the age segment between 30-45 years(46%), then 18-30Years (26%), 45-60 Years (21%) & least belongs to 60 Years & above(7%). In terms of educational background, 51% were post –graduate, 22% graduate, 18% were school pass out & only few 9% have acquired professional course. In terms of monthly income, 19% respondents earn below Rs.15,000 , 19% earns between 15,000-Rs. 30,000, 29% earns between Rs.30,000-45,000, 10% earns above Rs.45,000 & 23% respondents were unemployed. Regarding the use of electronic gadgets in daily life, android mobile phones were used by maximum respondents followed by multiple use of computers laptops , keypad cellular phones & tablets.

After this, the respondents who were not aware with internet banking & were not using, their responses were discarded. Majority of the respondents (42%) started using internet banking between 1 year- 3years, followed by 32% respondents who started using before 6 months, 15% respondents who were already using it more than 3 years & least by respondents who were using it between 6 months- 1year. Further, it was also found out that amongst many online payment applications & internet banking options Paytm was used by maximum followed by Google Pay, Particular Bank's Internet Banking Options, Phonepe & Amazon pay.

#### 4.3. Factor Analysis and validity & reliability of perceived value:

Firstly, the reliability of the measurement scale of the perceived scale for the instrument was tested & resulted in Chronbach alpha coefficient of 0.784. This result indicates that the measurement scale used in this study was quite acceptable & reliable (Netemeyer, Beardon, & Sharma, 2003).

As discussed earlier in the previous section, further the questionnaire consists of Questions & statements divided into 3 sections: i) Digital Competence (DC); ii) Financial Competence (FC) iii)Digital Financial Behavior (DFB). The questionnaire consists of five questions each related to digital awareness & financial awareness out of which respondents has to select any one option, score was given only on correct answer. In DC the variable which was named as "dc\_score" & in FC it was named "fc\_score." Score of all the correct answers were clubbed under the heads of dc\_score & fc\_score respectively which framed a separate variable in both the constructs. For the remaining statements, the respondent had to rate them on a 5 point rating scale (5- Very often to 1-Very rare).

The appropriateness of factor analysis was determined by the Kaiser-Meyer-Olkin (KMO= 0.886) measure of sampling adequacy & Bartlett's test of speherecity (p>.005). Afterwards, exploratory factor analysis (EFA) with Varimax rotation was conducted to identify underlying dimensions of the perceived value scale. The derived factors from EFA were treated as exogenous constructs in the structural equation modeling of this study. The variables belong to the factors that were considered indicators for measuring the constructs. The criteria of eigen value till 1.0 was kept for factor inclusion and cut off point of 0.40 was kept to include variables in each factor.

Table No. 1 shows the calculation of communality, factor loadings, descriptive (mean & standard deviation) of the 33 observed variables & their categorization under different constructs. Thus, the perceived value of the two dimensions (Digital Competency and Financial Competency) were treated as exogenous & the third one (Digital Financial Behavior) was treated as endogenous.

Table No. 1				
Variables under different Constructs				
Observed Variable	Factor	Communa	Mean	Standard
	Loadings	lity		Deviation
Variables under Digital Competency (DC) i.e. DC_2 :Operational Efficiency				
dc_a: I need somebody's help while operating these gadgets	843	.711	3.19	1.421
dc_b: I feel at ease in operation of android mobile phones & such electronic gadgets	.871	.759	3.21	1.525
dc_c: I make use of these gadgets more than for just calling & texting or their basic features	.763	.581	4.08	1.045
dc_D: I am aware about various options available on internet to make life easy such as shopping applications, gaming, payment applications etc.	.817	.668	3.36	1.462
dc_e: I use online services & its various features in routine life	.838	.702	3.44	1.354

dc_f: I update my digital skills to learn something new	.892	.795	3.13	1.450
dc_g: I am aware about security programs while accessing the	.915	.838	3.11	1.541
internet				
dc_h: I safeguard the credentials while using internet facility	.886	.785	3.08	1.664
dc_i: Fast technological upgradations restraints from coping it	631	.598	3.63	1.408
up				
dc_j: I find difficulty in operations due to language barrier	699	.689	3.42	1.459
dc_k: I pay attention towards all notifications received in my	.883	.780	3.23	1.325
device				
dc_l: I read instructions carefully before allowing it	.827	.685	3.67	1.279
Variables under Financial Co	ompetency (F0	C)		
FC_1 : Accumulative				
	<b>.</b>		1	
fc_a: I make monthly budget for expenses &strictly follow it	.826	.699	3.70	.994
fc_c: I maintain emergency fund in form of cash or liquid	.852	.727	4.23	.981
assets				
fc_h: I maintain accounts to keep a record of expenses &	.836	.700	3.80	1.173
incomes				
fc_k: I specifically save some amount monthly to safeguard	.857	.756	4.15	.943
my future				
FC_2 : Futuristic	<b>-</b>	1	1	
fc_d: I have created a will	.693	.720	2.60	1.821
fc_i: I have spread money over different types of investments	.848	.721	3.25	1.701
fc_j: I am prepared to risk some of my investment to earn	.814	.711	3.10	1.607
more profit out of it				
Variables under Digital Financia	al Behaviour (	DFB)		
DFB_1 :Readiness for being digital				
dfb_a: Online banking replaces banking in person for me	.594	.836	2.52	1.296
dfb_b: I save time by transacting online	.812	.840	3.31	1.676
dfb_i: Brokerage cost, agent's commission etc. have been	.747	.637	2.77	1.594
removed for me while making any investments	./4/	.037	2.11	1.374
7 7	022	751	2 55	1 674
dfb_j: Rewards points, cashbacks, coupons etc. attracts me for transacting online	.833	.751	3.55	1.674
dfb_l: Burden of maintaining liquidity is removed while	.737	.575	3.72	1.444
transacting online	.,,,,	.575	5.72	2.111
William Committee				

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dfb_o: e-payments can be easily understood & readily	.748	.803	3.01	1.551
adopted				
dfb_q: I regularly update my knowledge to be in flow with	.720	.677	3.03	1.522
digital learning				
DFB_2:Hurdles in being digital				
dfb_c: I find difficulty in using internet banking	.718	.803	3.41	1.746
dfb_d: I am totally dependent on other person for transacting	.708	.731	3.32	1.630
online through my account				
dfb_e: I have trust issues while dealing online	.757	.589	3.82	1.280
dfb_g: Bitter past experience have restrained me from going	.773	.660	3.40	1.424
on digital platform				
dfb_k: I do not want to make efforts in learning e-payment	.574	.634	2.83	1.486
system				
dfb_m: I do not transact online because there is hidden cost	.541	.621	2.48	1.574
involved with it.				
dfb_p: I feel nervous while transacting online	.821	.855	3.40	1.640

# 4.4. Measurement model for perceived value:

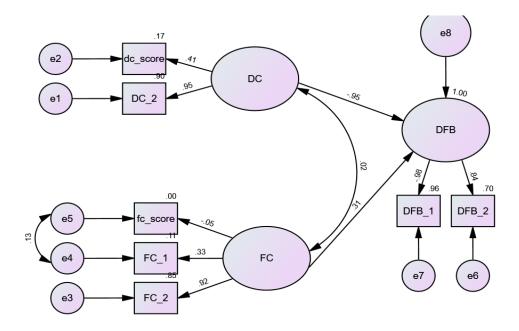
Prior to application of SEM model, a confirmatory analysis was conducted to establish confidence in the measurement model, which verifies the relations of observed variables with the underlying constructs. Thus, each construct was analyzed separately & then overall measurement model was examined. Table no. 2 presents the normality & simple reliability of the observed variables through Chronbach's alpha, KMO & Bartlett's Test, total variance extracted & composite reliability respectively which are higher than recommended. Pearson's correlation analysis results indicated that there was no multi colinearlity between the observed variables.

Table No. 2				
Normality & Reliability Tests				
Particulars	<b>Digital Competency</b>	Financial Competency	Digital Financial	
	(DC)	(FC)	Behavior	
Sub-Factor	dc_score (5 items),	Fc_score (5 items),	DFB_1 (7 items),	
	DC_2 (12 items)	FC_1 (4 items), FC_2	DFB_2(7 items)	
		(3 items)		
Chronbach's Alpha	0.734	0.866	0.705	
KMO	0.909	0.774	.0853	
Bartlett's Spherecity Tests	5392.331	1362.766	2662.215	
Total Variance Explained	68.252%	71.913%	71.132%	

Further for data analysis, Structural Equation Modeling (SEM) was used, a multivariate technique to test the validity of the theoretical models that define casual & hypothetical relationships between variables. The different parameters to test the model are: Chi-square/degrees of freedom (x2/df) ,CFI, GFI, AGFI,TLI, RMSEA & PGFI(Table No. 3).

Table No.3				
Model Fit Indices				
Fit Indices	Results	Suggested Values		
Chi-Square	91.531	-		
Degree of Freedom	27	-		
Chi-square/degree of freedom (x2/d.f.)	3.39	<=5.00		
Significance Level	.081	p>0.05		
Comparative Fit Indices	.986	>0.90 (Hair et al., 2002)		
Goodness of Fit Index (GFI)	0.908	>0.90 (Hu & Bentler, 1999)		
Adjusted Goodness of Fit Index(AGFI)	.0898	>0.90 (Hair et al., 2006)		
Normated Fit Index (NFI)	0.919	>0.90 (Daire et al., 2008)		
Incremental Fit Index (IFI)	0.912	>0.90 (Hu & Bentler, 1999)		
Tucker Lewis Index (TLI)	0.900	>0.90 (Hu & Bentler, 1999)		
Root Mean Square Error of Approximation (RMSEA)	0.854	<0.08 (Hu & Bentler, 1999)		
Parsimony Goodness of Fit Index(PGFI)	0.476	Within 0.5 (Daire et al., 2008)		

The results of confirmatory Factor Analysis indicate that the measurement model has a good fit of data. The model is presented as follows:



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# Figure No. 2 Source: Author's Analysis

Thus, the hypothesis  $H_{01}$  gets rejected & let the researcher conclude that "There is significant impact of digital competency on digital financial behavior" as when a person is digitally aware about the basics of digital world & able to operate them efficiently, his overall competence gets positively affected by it. Similarly, the hypothesis  $H_{02}$  also gets rejected & thus "There is significant impact of financial competency on digital financial behavior" which signify that financial awareness, optimistic financial attitude such as being futuristic & accumulative positively affects a person's digital financial behavior.

#### 5. Conclusion:

The first section comprised of five questions relating to basics of digital payments, score was given only on correct answer. The aggregate score was given the head of "dc\_score" and treated as separate factor for judging the digital competency of a person. Afterwards, twelve statements were asked to know the opinion of the respondents related to digital payments. On applying the statistical tools, all statements got clubbed under a single head "DC\_2:Operational efficiency" which reflected the usage & acceptability pattern of respondents. All those statements which were negative or reflected the negative side of digital payments had negative factor loadings which clarified that person's operational efficiency is adversely affected by them. Thus, these two factors "dc score" & "DC 2" reflected the construct "DC: Digital Competency."

Similarly, the second section was framed. It also comprised of five questions relating to basics of financial concepts; score was given only on correct answers. The aggregate score was given the head of "fc\_score" and treated as separate factor for judging the financial competency of a person. Afterwards, eleven statements were asked to know the pattern of financial practices followed by the respondents. On application of statistical tools & techniques, two statement got removed due to lower communality, rest nine statements got bifurcated into 2 factors: "FC\_1:Accumulative" & "FC\_2:Futurstic." Thus, all three factors "fc score", "FC

\_1" and "FC\_2" reflected the construct "FC: Financial Competency."

In the third section, directly 17 statements were asked to know the perspective of respondents towards online banking considering all its concepts, benefits, problems etc. After application of statistical tools, three statements were removed due to lower communality, rest statements got divide into two factors: "DFB\_1: Readiness for being digital" and "DFB\_2: Hurdles in being digital." Thus, the third construct "DFB" reflected these two factors.

Further, as per the objective of the study, the inter-relationship & combined effect was seen through application of SEM model. As already discussed, all the basic criteria to test the validity & reliability of the model was met and as a result interpretation could be drawn on it. The statistical techniques on the data collected verify the inter-relationship between all constructs.

Thus, through the current study it could be inferred that digital literacy of a person affects his/her usage pattern & encourage for using the platform in daily life to save time, cost & cope with technological up gradations. More a person in inclined or optimistic towards digital payments, his behavior will be positively affected by it. Also, level of financial literacy of a person affects his usage pattern regarding digital & non-digital transactions. Awareness of online banking is not enough. The acumen to use it judiciously

considering all its benefits & loopholes frame the digital financial behavior of a person. So, presence of digital acumen with financial literacy influences the activities of an individual towards digital platforms specially financial transactions such as online banking, digital payments, online investments, m-wallets, credit and debit cards, etc. More and more inclination towards digital world reduces the burden of liquidity, deferred payments, physical banking and presence in person and simultaneously induces for alertness, technological up gradations and saving of time. Absence of any one component disrupts the overall digital financial behavior as balanced knowledge of both the aspects further helps a person to get benefitted from the advantages & be alert from the loopholes & frauds while using it.

However, the study was conducted in Udaipur region only which can be further carried on at state level, national level or international level. Also, variables of the model can be tested against the gender bifurcation, belonging area, employment sector or educational background.

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