



The effect of Digitalization on Customer Engagement Applied on Microfinance Non-Banking Companies in Egypt

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The effect of Digitalization on Customer Engagement Applied on Microfinance Non-Banking Companies in Egypt

Dr. Abdalla Ali Elnaggar and Dr. Abd El-Aziz Ali Hassan

Abstract

The aim of this research is to analyze the effect of Digitalization on Customer Engagement applied on the Microfinance Non-Banking Companies' Customers in Egypt. According to the literature review, researchers developed the conceptual framework of the relationships between research variables (Digitalization, and Customer Engagement). Researchers depended on a questionnaire which was uploaded to google drive in google form format to collect the research data. Self-moderated Questionnaire was shared via social media channels of the Microfinance Non-Banking Companies in Egypt. The collected responds were 421, and the valid responds were 404. The findings reveals that there is a significant, positive, and direct effect of Digitalization on Customer Engagement. For Digitalization Dimensions, results showed that only three dimensions of the four significantly affect Customer Engagement, they are: Digitalization of Service Support, Digital Analysis Support, and Digitalization of Data Integration and Access Support. Based on the research results, researchers provided several recommendations for the practitioners in field of application.

Keywords: Digitalization, Customer Engagement, Microfinance.

Introduction

Businesses as well as society are currently in the process of digital transformation, which affects all kinds of activities, whether commercial or otherwise. This process imposes conditions on companies globally - not just in terms of their internal operations. Adapting to increasingly digital environments is a complex challenge for all companies and involves a change in the way work is done that has significant implications for organizational behavior and company culture (Guerra et al., 2023).As an enabler of disruptive innovation,

digitalization is progressively and repeatedly disrupting existing market structures and leading to an alternative business model in which unserved clients gain from quick access to formal markets (Gupta & Kanungo, 2022).

Customer engagement has emerged as critical brand-building tactics in research due to their capacity to positively influence customer behavior. Customer happiness, consumer-brand linkages, customer retention, brand equity, and competitive advantage may all benefit from this influence (Cheung et al., 2021).

Because of rapid technological advancement, financial service firms are increasingly shifting towards online and digitalized value creation. (Niemand et al., 2021). Therefore, current research studies the relationship between Digitalization and Customer Engagement in Microfinance Non-Banking Companies in Egypt.

Research Purpose

The purpose of this research is to investigate the effect of Digitalization on Customer Engagement applied on Microfinance Non-Banking Companies' Customers in Egypt.

Literature Review

Digitalization

Contemporary digitalization is a whole new means of retrieving, storing, and processing information. The value of information in making successful management decisions cannot be emphasized (Ashmarina et al., 2019).

Scholars have extensively explored digital developments. Management researchers frequently use the phrases digitization, digitalization, and digital transformation interchangeably (Caputo et al., 2021).

Digitalization can be defined as the process of reshaping business models due to and through the adoption and use of digital technologies with the aim of creating an environment within the organization and its environment in which digital capabilities and the value of creativity are used (Tijan et al., 2021).

Yet, for businesses to effectively transition to the fourth industrial revolution, organizational conditions such as mutual trust, compatibility, close cooperation, and common standards must be strengthened (Royo-Vela & Serrano, 2021). The transition to a new stage of the industrial revolution encourages governments to develop and execute new policies with the purpose of reforming a wide range of social institutions and processes.

Additionally, according to a UN Industrial Development Organization (UNIDO) study, COVID-19 is a digital transformation catalyst. COVID-19 is a surprising digital transformation accelerator. The disruptions caused by the crisis are having a huge influence on the global mentality, which is now more open to accepting change to alleviate the repercussions of the pandemic and restore normalcy. Certainly, because of these shocks, the world has experienced the most amazing digital transformation in a few months than in the preceding decade (Li, 2021).

Organizations can develop a digital promotional plan to reach a large audience. The benefits of the internet for both companies and potential customers are making it popular for marketing techniques all around the world. In this dynamic business scenario, each company has two platforms to perform on: one physical world where customers' reactions can be seen; companies can react and work on right from the start based on customer feedback; and another virtual world where a variety of opportunities for connecting with audiences are available. The internet and the World Wide Web are the most rapidly increasing and inventive components in the world of communication, as well as a paradigm change in marketing. The transition from "one way" to "two ways" information flow has resulted in the emergence of co-creation activity; personalization for global clients (Kushwaha, 2017).

Based on these discussions, researchers were able to develop hypotheses one as follows:

H1. There is a significant correlation between Digitalization and Customer Engagement among clients of non-banking microfinance companies in Egypt.

Digitalization Dimensions

As per (Kohtamäki et al., 2020), Digitalization has four main dimensions: Digitalization of sales support, Digitalization of service support, Digital analysis support, and Data integration and access support.

Digitalization of sales support: Which includes to what extent digital transformation does the following or not:

- Provides sales force in the field with customer information.
- Provides sales force in the field with competitor information.
- Assigns leads and prospects to appropriate sales personnel.
- Provides customized offers to salespeople in the field.

Digitalization of service support: Which includes to what extent digital transformation does the following or not:

- Allows customer support personnel to access data on customer interactions with all functional areas.
- Provides customers access to a knowledge base of solutions to commonly occurring problems (e.g., frequently asked questions).
- Schedules and tracks service delivery.
- Can customize service scripts to customers' needs.

Digital analysis support: Which includes to what extent digital transformation does the following or not:

- Enables assessment of channel performance.
- Enables forecast of customer preferences.
- Measures customer loyalty.
- Calculates customer lifetime value.
- Enables the assessment of service profitability.

Data integration and access support: Which includes to what extent digital transformation does the following or not:

- Combines customer transaction data with external source data.
- Integrates customer information from different contact points (e.g., mail, telephone, Web, fax ...).
- Allows relevant employees access to unified consumer data.

Customer Engagement

Customers who are engaged willingly offer resources like as their personal and social networks, brand expertise, and persuasion ability to improve brand equity (Kumar & Nayak, 2019). Brand attachment serves as a bridge between brand engagement and brand loyalty.

Taheri et al. (2019) defined Customer Engagement as a customer's involvement with and commitment to a specific product or service in a study of tourist behavior. Although Customer Engagement has previously been defined as voluntary or extra-role conduct outside transactions (Doorn, 2011; Jaakkola & Alexander, 2014), it has a wider scope.

While service marketing researchers have been increasingly interested in cocreation of value theory, particularly the use of technology in the cocreation process, the function of genuine experiences and their effect on consumer engagement and perceived ethics has received less attention. However, because value cocreation is triggered through experiences, and therefore authenticity, customer engagement, and perceived ethics, it is critical to evaluate the effect of these notions on consumer intents to cocreate. Understanding these links can help brand managers and developers who are contemplating using technology in their cocreation strategy better comprehend the experiential nature of cocreation (Alimamy & Nadeem, 2021).

Based on these discussions, researchers were able to develop hypotheses one as follows:

H2. Digitalization significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.

Customer Engagement Dimensions

Scholars used three dimensions of Customer Engagement, which are Cognitive, Affective, and Behavioral. (Harrigan et al., 2018).

Cognitive Dimension: Cognitive processing is defined as a consumer's level of brand-related thought processing and elaboration.

Affective Dimension: Affection refers to a consumer 's degree of positive brand-related affect.

Behavioral Dimension: Activation refers to a consumer 's level of energy, effort and time spent on a brand.

Research Problem

Advanced technology and experience-seeking consumers have generated complex obstacles while also providing numerous possibilities for managers in the service delivery process (Junaid & Goudarzi, 2018). Digitalization enables managers to make better accurate decision (Vishnyakova et al., 2020). Digitalization in the e world provides entrepreneurs with amazing opportunity to develop their own e commerce model (Younis & Al Bakri, 2020). According to the literature, improved digitization promotes consumer engagement (Kohtamäki et al., 2020).

Based on literature review, the researchers noticed that there are few previous studies explored the relationship between Digitalization, and Customer Engagement. The current research seeks to explore this relationship in the field of study. So that researchers stated the research problem in the following main question:

How could Digitalization affect Customer Engagement in Non-Banking Microfinance Companies in Egypt?

Research Questions

- Q1. Is there a significant correlation among the research variables (Digitalization, and Customer Engagement)?
- Q2. What is the impact of Digitalization on Customer Engagement among clients of non-banking microfinance companies in Egypt?

Research Objectives

- O1. Measuring the correlation between Digitalization and Customer Engagement among clients of non-banking microfinance companies in Egypt.
- O2. Determining the effect of Digitalization on Customer Engagement among clients of non-banking microfinance companies in Egypt.

Research Hypothesis

- H1. There is a significant correlation between Digitalization and Customer Engagement among clients of non-banking microfinance companies in Egypt.
- H2. Digitalization significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.
 - H2a. Digitalization of sales support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.
 - H2b. Digitalization of service support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.
 - H2c. Digital analysis support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.
 - H2d. Digitalization of Data integration and access support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.

Conceptual Framework for the relationships between research Variables

Based on the Literature, and the research hypothesizes, Figure 1 shows the Conceptual Framework for the Relationships Between Research Variables.

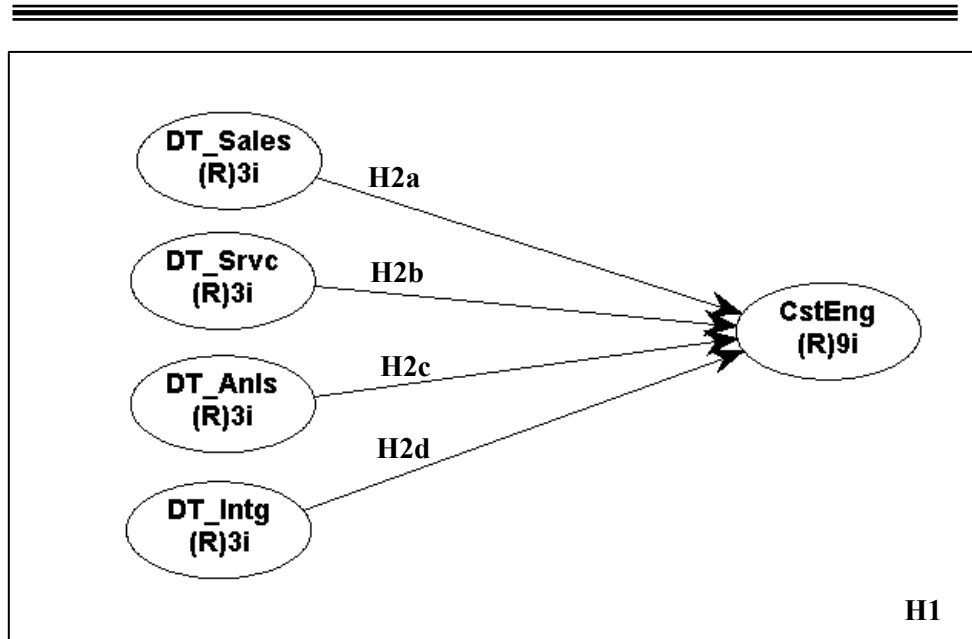


Figure 1 Conceptual Framework for the Relationships Between Research Variables

Source: By researchers depending on Literature and Research Hypothesizes using WarpPLS 8.0.

Research Methods

Current study relies on quantitative research methodologies to acquire data from the intended sample. The quantitative techniques comprise establishing hypotheses to guide statistical testing, using equipment to accurately measure the study variables, collecting data, and then statistically evaluating the data to test the hypotheses. (Nardi, 2018).

Research Design

Based on its goal, research is classified into three types: descriptive, exploratory, and explanatory (Saunders et al., 2009). The current study is explanatory in nature, attempting to explain the causal relationship between the research variables.

Data Collection

The research data was gathered between November 2021 and February 2022. Researchers created an electronic version of the questionnaire using Google Form, which was sent to microfinance clients in Egypt using social media platforms such as Facebook Pages, Facebook Groups, and WhatsApp Groups. There were 421 total responses, with 421 acceptable responses (404). Researchers exported obtained data from Google Form to Google Sheet, then to Excel Sheet, where items were coded and structured for WarpPLS. WarpPLS 8.0, a version of the PLS analysis, was utilized to examine research data.

Types of Data

Researchers used two categories of data: primary and secondary. The core data was gathered via a questionnaire created on Google Forms and distributed over social media. Secondary data included reports, literature, and data on the topic that could be found on the internet.

Data Collection Techniques

The questionnaire is a form or instrument that comprises a series of questions and secure replies that respondents (from a certain demographic) fill out to supply the researchers with the necessary information for the research (Taherdoost, 2021). Considering the main data, a questionnaire survey was chosen as the data collection approach in the current study.

Time Horizon of Collected Data

Following the selection of the study approach and data collection procedures, the temporal horizons of the gathered data are reviewed. Based on the data collection horizons, research can be classed as cross-sectional or longitudinal. Cross-sectional research collects data for a specific phenomenon at a single point in time, referred to as a "snapshot," whereas longitudinal studies collect data for a same phenomenon over time, referred as a "dairy." (2009) (Saunders et al.). The current study employed a cross-sectional design.

Questionnaire Design

The current study employed a closed-ended questions structured questionnaire, in which respondents were encouraged to choose just one answer from a list of options.

The questionnaire had a cover letter, study concepts, and two sections. Section One began with a closed ended yes or no question to determine whether the respondent had dealt with any Non-Banking Microfinance Businesses in Egypt. If the response was "no," he or she was thanked and the questionnaire was terminated. If he or she said "yes," we'll go on to the following section.

Section two release the items assessing the research variables, which were Likert Five Scale phrases, were measured in the second and fifth sections of Part One. These were closed-ended questions with responses such as "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." (1) point was awarded to the answer "Strongly Disagree," (2) points to "Disagree", (3) points to "Undecided", (4) points to "Agree", and (5) points to "Strongly Agree".

Variables Measurement

As shown in table 1, based on the literature, the researchers used dimensions and items to measure the research variables.

Table 1 Variable dimensions as measured in Literature

Reference	Dimensions
Digitalization	
1. Kohtamäki et al., (2020). The relationship between digitalization and servitization: The role of servitization in capturing the financial potential of digitalization.	- Sales support - Service support - Analysis support - Data integration & access support
2. Abou-Foul et al., (2021). The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis.	- Digital components embedded in physical products. - Digital capabilities embedded in the operational processes, which improve the manufacturer's supply chain and operational performance.
3. Schroeder & Kotlarsky (2015). Digital resources and their role in advanced service provision: A VRIN analysis.	(9) questions.
4. Hennelly et al. (2020). Rethinking Supply Chains in the Age of Digitalization.	
Customer Engagement	
Fernandes & Moreira (2019). Consumer brand engagement, satisfaction, and brand loyalty: a comparative study between functional and emotional brand relationships.	- Cognitive - Affective - Behavioral
Qaiser, S. (2021). The Mediating Role of Customer Engagement on Brand Involvement and Emotional Brand Attachment.	- Cognitive - Affective - Activation

Source: By researchers based on Literature.

Population and Sampling

The present study's population consists of Egyptian consumers of non-banking microfinance organizations.

According to the Financial Regulatory Authority in Egypt, there are eleven non-banking microfinance companies in Egypt: Reefy, Tasaheel, Tanmeyah, Aman, Sandah, Tamweely, Fawry, Aloula, Basata, Pharos, Cash, Alahly Tamkeen, Our, Bedayti, Fibni, Easy credit, Thiqa, and Alkheir.

Sampling Unit

The sampling unit in the current research is the customers of Microfinance Non-Banking Companies in Egypt.

Sampling Frame

The sampling frame for a probability sample, according to Saunders et al. (2009), is a comprehensive list that covers all units in the population from which a sample may be chosen. According to the current study, the licensed Microfinance Non-Banking Companies in Egypt as of the present research are (18) firms with more than 1,000,000 consumers (Financial Regulatory Authority, 2022).

Sample Size

The sample size required to be large enough to generalize the findings to a population. According to Saunders et al. (2009), a sample size of 384 is required if the margin of error is 5%, which is the proportion utilized in social research, the confidence level is 95%, and the size of the society of 1,000,000.

Sampling Technique

The research depended on Stratified Random Sampling technique. Using Google Form, the researchers created an electronic version of the questionnaire, which was sent to microfinance clients in Egypt using social media channels such as Facebook Pages, Facebook Groups, and WhatsApp Groups. There were (421) total responses, while acceptable responses were (404).

Questionnaire Pilot Testing

Validity

The validity of a good research instrument is one of its most important characteristics. Bell et al. (2017) define validity as how well an instrument measures what it is designed to measure. More specifically, validity reflects the extent to which a certain variable is appropriately appraised. The four main types of validity are face

validity, content validity, construct validity, and criterion-related validity (Saunders et al., 2009). Face validity, content validity, and construct validity were stated by the researchers.

Face Validity

The questionnaire used in this study was translated into Arabic by the researchers and sent to professionals for grammar, appropriateness, equivalence, and consistency checks.

Content Validity

The original questionnaire was given to five professors from major Egyptian universities that specialize in business administration and marketing to check content validity. Most of the comments noted that the items directly suited their structures, with minor rephrasing of unclear items to make the questionnaire more accessible to the intended respondents, all of which had a substantial influence on the final questionnaire design.

Translation of Questionnaire

The original questionnaire form was only available in English. It was then translated into Arabic to ensure that the questions were understood and answered correctly. In line with the validity processes of back translation techniques approved by Saunders et al., the Arabic copy has been translated back into English to be contrasted with the primary form (2009). The researchers compared the two original surveys to create a third, more relevant one.

Construct Validity

Construct validity may be divided into two types: convergent validity and discriminant validity.

Table 2 Correlations among l.vs. with sq. rts. of AVEs

	DT Sale	DT Srvc	DT Anls	DT Intg	CstEng
DT_Sale	0.879	0.612	0.310	0.585	0.329
DT_Srvc	0.612	0.897	0.337	0.850	0.543
DT_Anls	0.310	0.337	0.840	0.359	0.230
DT_Intg	0.585	0.850	0.359	0.956	0.552
CstEng	0.329	0.543	0.230	0.552	0.732

Note: Square roots of average variances extracted (AVEs) shown on diagonal.

Source: Prepared by the researchers according to statistical analysis

Convergent validity reveals how closely the construct's components are connected. Average variance extracted (AVE) is used

to determine convergent validity, according to Hair et al. (2010). The AVE indicates the total amount of variance in the pieces that make up a construct. On the other hand, discriminant validity translates how different one construct is from other related constructs (Tarling, 2008). Fornell and Larcker (1981) define discriminant validity as the square root of the AVE that must surpass the association between constructs.

As shown in table 3, all these construct's AVEs are greater than 0.5. Therefore, the results indicate that there is convergent validity for all the latent used in this research.

Table 3 Combined loadings and cross-loadings.

	DT Sale	DT Srvc	DT Anls	DT Intg	CstEng	SE	P value
DGT01	0.871	0.175	-0.008	-0.152	0.075	0.044	<0.001
DGT02	0.878	-0.299	-0.013	0.222	-0.039	0.044	<0.001
DGT03	0.888	0.124	0.021	-0.070	-0.035	0.044	<0.001
DGT04	-0.390	0.793	-0.153	0.255	0.180	0.045	<0.001
DGT05	0.277	0.947	0.079	0.072	-0.091	0.044	<0.001
DGT06	0.050	0.942	0.049	-0.287	-0.060	0.044	<0.001
DGT07	-0.027	0.057	0.951	-0.309	0.181	0.044	<0.001
DGT08	-0.031	0.067	0.946	-0.274	0.155	0.044	<0.001
DGT09	0.099	-0.208	0.565	0.977	-0.564	0.046	<0.001
DGT10	0.056	-0.424	0.246	0.906	-0.017	0.044	<0.001
DGT11	-0.025	0.193	-0.114	0.980	0.012	0.044	<0.001
DGT12	-0.027	0.198	-0.113	0.980	0.004	0.044	<0.001
CNG01	-0.520	1.682	-0.185	-0.832	0.501	0.047	<0.001
CNG02	0.010	-0.105	-0.099	0.037	0.867	0.044	<0.001
CNG03	-0.347	1.498	0.006	-0.799	0.582	0.046	<0.001
CNG04	0.003	-0.060	0.367	-0.157	0.348	0.048	<0.001
CNG05	0.146	-0.391	0.053	0.173	0.840	0.044	<0.001
CNG06	0.135	-0.476	-0.007	0.242	0.820	0.045	<0.001
CNG07	0.062	-0.247	-0.061	0.173	0.821	0.045	<0.001
CNG08	0.191	-0.575	0.002	0.345	0.796	0.045	<0.001
CNG09	0.021	-0.274	0.069	0.177	0.823	0.045	<0.001

Notes: Loadings are unrotated and cross-loadings are oblique-rotated. P values < 0.05 are desirable for reflective indicators. Scores for each item <0.30 are desirable for sample 350 (Hair, 2009).

Source: Prepared by the researchers according to statistical analysis

Reliability

Cronbach's alpha coefficient (α) and Composite Reliability are used by the researchers to perform internal consistency reliability (CR). Cronbach's alpha and Cronbach's CR should be greater than or equal to 0.7. Hair and colleagues (2010)

Table 4 Composite reliability & Cronbach's alpha (α) coefficients

Composite reliability coefficients				
DT Sale	DT Srvc	DT Anls	DT Intg	CstEng
0.911	0.924	0.873	0.969	0.908
Cronbach's alpha coefficients				
0.853	0.875	0.771	0.952	0.881

Source: Prepared by the researchers according to statistical analysis

Sample Description

Accepted responses to the questionnaire were (404), described as follows:

Table 5 Sample Description

Sample Description		No.	%
Customers	Tasaheel	59	14.6%
	Fawry	57	14.1%
	Aman	56	13.9%
	Tanmeya	53	13.1%
	Reefy	53	13.1%
	Tamweely	45	11.1%
	Sanda	31	7.7%
	AlAhly Tamkeen	20	5.0%
	Veetas	16	4.0%
	Cash	13	3.2%
	AlOula	1	0.2%
	Total	404	100.0%
Gender	Male	237	58.7%
	Female	167	41.3%
	Total	404	100.0%
Age	21 to <40	360	89.1%
	40 to <60	34	8.4%
	60 to >60	10	2.5%
	Total	404	100.0%

Sample Description		No.	%
Marital Status	Married with Children	352	87.1%
	Single with Children	20	5.0%
	Married with No Children	19	4.7%
	Single with No Children	13	3.2%
	Total	404	100.0%
Income Level	2400 to <4800	195	48.3%
	<2400	128	31.7%
	4800 to >4800	81	20.0%
	Total	404	100.0%
Education Level	High School or Lower	278	68.8%
	University Degree	121	30.0%
	Postgraduates	5	1.2%
	Total	404	100.0%
Residency	Urban	322	79.7%
	Rural	82	20.3%
	Total	404	100.0%
Job	Free Work	206	51.0%
	Private Sector	80	19.8%
	No Work	92	22.8%
	Public Sector	26	6.4%
	Total	404	100.0%

Source: Prepared by the researchers according to statistical analysis

Descriptive Statistics

According to Byrne (2010), data analysis is a necessary step before assessing the measurement model, particularly when utilizing structural equation modelling.

Table 6 Descriptive Statistics for Each Item

Variable	Dimension	Code	Mean	SD	Skewness	Exc. kurtosis
Digitalization	Sales Support	DGT01	3.382	0.539	1.002	-0.052
		DGT02	3.355	0.537	1.174	0.373
		DGT03	3.320	0.540	1.460	1.189
	Service Support	DGT04	3.141	0.873	-0.233	-1.451
		DGT05	2.583	0.781	0.973	-0.203
		DGT06	2.514	0.776	1.151	-0.145
	Analysis Support	DGT07	3.047	0.212	4.278	16.308
		DGT08	3.045	0.218	3.678	15.659
		DGT09	2.685	0.548	0.181	0.424
		DGT10	2.551	0.572	0.438	-0.195
		DGT11	3.040	0.847	-0.051	-1.547
		DGT12	3.042	0.846	-0.055	-1.541
Customer Engagement	Cognitive	CNG01	3.531	0.587	0.583	-0.61
		CNG02	2.94	0.436	0.053	3.928
		CNG03	2.588	0.614	0.726	0.529
	Affective	CNG04	3.074	0.281	3.895	15.605
		CNG05	2.958	0.436	0.141	3.993
		CNG06	2.965	0.428	-0.01	3.37
	Behavioral	CNG07	2.95	0.454	0.436	4.839
		CNG08	2.978	0.501	0.67	3.969
		CNG09	2.973	0.47	0.487	4.111

Source: Prepared by the researchers according to statistical analysis

As shown in table 5, before commencing the statistical investigation, the researchers took certain measures to confirm that the necessary circumstances for the statistical procedures were in place.

Structural Equation Modeling

According to Ong et al. (2017), structural equation modelling (SEM) is a statistical tool that uses a confirmatory approach incorporating hypothesis testing to investigate a structural theory based on specific facts. SEM also denotes causal techniques that provide explanations for a wide range of variables. Such variables can be observed as either latent or manifest. The observed variable is measured directly, but the latent variable is assessed indirectly using two or more observed variables.

Furthermore, SEM investigates the links between one or more independent and dependent variables by measuring the fitness level of hypothetical constructions using data acquired. SEM is becoming more popular in the realms of psychology and social sciences, where it is recognized as a fundamental tool. The current research utilized partial least squares (PLS) analysis, precisely Warp PLS version 8.0

Assessing the Structural Model and Hypotheses Testing

Model Fit Indices

A structural model is frequently employed to address the causal links between the research's components. The structural model is also utilized to analyses the research's theoretical model (Ong et al., 2017).

Table 7 Model Fit Indices

Fit Measures	Actual Values	P Values	Accepted Fit
Average path coefficient (APC)	0.235	<0.001	P < 0.05
Average R-squared (ARS)	0.510	<0.001	P < 0.05
Average block VIF (AVIF)	2.981		Acceptable if <= 5, ideally <= 3.3

Source: Prepared by the researchers according to statistical analysis

As shown in table 6, three additional metrics were used to quantify the overall fit of the model fit indices: Average Path Coefficient (APC), Average R-squared (ARS), and Average Variance Inflation Factor (AVIF) (AVIF). According to Kock (2013), APC and ARS are significant if the P-value is less than 0.05, but AVIF must be less than 5.

Testing Hypothesizes

Based on the statistical analysis, Digitalization significantly affects Value Co-Creation with Microfinance Non-Banking Companies in Egypt at P Value <0.01. Also, Customer Education significantly moderates this relationship at P Value <0.01. Table 7 shows the statistical analysis of the relationships between research variables.

Table 8 Total Effects & P Values

Variable/Dimension	Total Effect	P Value	Interpretation
H2. Digitalization on Customer Engagement	0.454	<0.001	Partially Accepted
H1a. Digitalization of Sales Support on Value Co-Creation.	-0.001	0.489	Rejected
H1b. Digitalization of Service Support on Value Co-Creation.	0.384	<0.001	Accepted
H1c. Digitalization of Analysis Support on Value Co-Creation.	0.33	<0.001	Accepted
H1d. Digitalization of Data Integration on Value Co-Creation.	0.225	<0.001	Accepted

Source: By Researchers based on WarpPLS V 8.0 Statistical analysis.

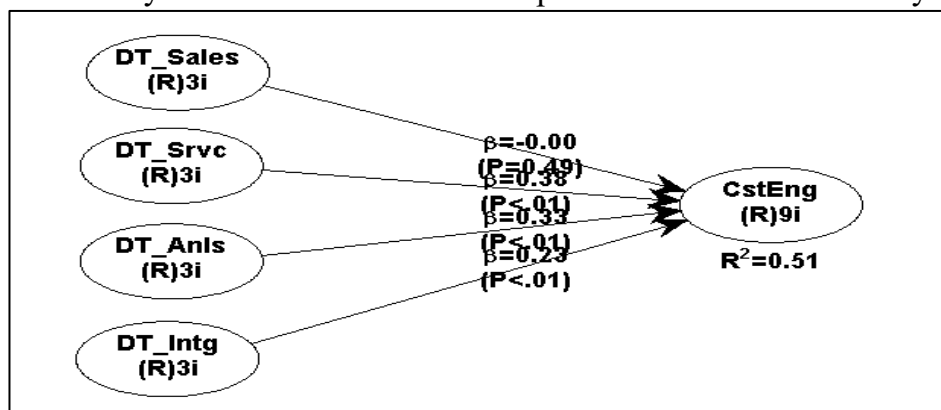


Figure 2 The relationships between Digitalization dimensions and Value Co-Creation, and the moderation of Customer Education

Source: By Researchers based on WarpPLS V 8.0 Statistical analysis.

Findings

Researchers summarize the Research Questions, Objectives, Hypothesizes, and Results in table 9 as follows:

Table 9 Research Questions, Objectives, Hypothesizes, and Results

Research Questions	Research Objectives	Research Hypothesizes	Results
Research Question 1. What is the nature of the correlation relationship between the research variables (Digitization, Customer Engagement)?	Research Objective 1. Determining the nature of the correlation between the research variables (Digitization, Customer Engagement).	Research Hypothesis 1. There is a significant correlation relationship between the research variables dimensions (Digitization, Customer Engagement).	Accepted
Research Question 2. Is there an effect of Digitization on Customer Engagement among clients of non-banking microfinance companies in Egypt?	Research Objective 2. Measuring the effect of Digitization on Customer Engagement among clients of non-banking microfinance companies in Egypt.	Research Hypothesis 2. Digitization significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.	Accepted
		H2a. Digitalization of sales support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.	Rejected
		H2b. Digitalization of service support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.	Accepted

Research Questions	Research Objectives	Research Hypothesizes	Results
		H2c. Digital analysis support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.	Accepted
		H2d. Digitalization of Data integration and access support significantly affects Customer Engagement among clients of non-banking microfinance companies in Egypt.	Accepted

Source: By Researchers based on Literature, Conceptual Framework, and Statistical analysis.

Table 8 Research Findings compared to Literature

Research Findings	Compared to literature
Digitalization significantly Customer Engagement.	<i>Agree with Royo-Vela & Serrano (2021); Gellweiler & Krishnamurthi (2020); Younis & Al Bakri (2020); Diebner et al. (2020); Alimamy & Nadeem (2021).</i>

Source: By Researchers based on Literature.

Theoretical Implications

The current research contributes to the body of knowledge of the existing literature of Digitalization, and Customer Engagement. In addition, the research aimed to fill the knowledge gap focusing on the effect of Digitalization Dimensions on Customer Engagement. Therefore, researchers summarize the theoretical implications as follows:

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1. The current Research contributes to a broader understanding of the research variables (Digitalization, and Customer Engagement).
 2. The current Research contributes to a broader and more comprehensive understanding of the most important Digitalization Dimensions and knowing the extent of its effect on Customer Engagement.

Practical Implications

The current research was prepared based on reviewing previous studies and noticing a lack of studies that focused on the link between Digitalization, and Customer Engagement.

Based on the literature review, these relationships were not analyzed in the same depth before, in addition to that the application field still needs more investigation. The results of the current study provide some practical contributions as follows:

1. Providing a deeper understanding of Digitalization, and Customer Engagement in the field of application.
2. The research proved that Digitalization significantly affects Customer Engagement.

Recommendations

In the light of the practical implications, the researchers provide several recommendations for Non-Banking Microfinance Companies in Egypt:

1. Digitalizing the whole processes of those companies is necessary, and they should be aware of the digitalization movements around the world.
2. Engaging Customers is the recent trend to develop superior services that satisfy the needs of those customers. That is why companies are required to discuss every aspect of its services with its customers before, during, and after sales.
3. Invest in more Customer Engagement Activities because it will develop a superior competitive advantage for the company.

Conclusion

The research model of this study estimates the direct and total effects of Digitalization dimensions on Customer Engagement. Results showed that Digitalization significantly affects Customer Engagement. For Digitalization Dimensions, results showed that only three dimensions of the four significantly affect Customer Engagement, they are: Digitalization of Service Support, Digital Analysis Support, and Digitalization of Data integration and access support.

Research Limitations

This research has some limitations which researchers summarize it as follows:

- People: This research results are limited to Customers of Non-Banking Microfinance Companies in Egypt.
- Place: This research results are limited to Non-Banking Microfinance Companies in Egypt.
- Time: This research results are limited to the cross-sectional period in when the questionnaire was shared to customers of the Non-Banking Microfinance Companies in Egypt during the period from November 2021 to February 2022.

Future Research Directions

Researchers give Future Research Directions based on what they studied in the current research as follows:

1. The relationship between Digitalization and Customer Engagement through Customer Loyalty.
2. The relationship between Digitalization and Customer Engagement through Customer Satisfaction.

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تأثير التحول الرقمي على ارتباط العملاء: بالتطبيق على شركات التمويل

الأصغر غير المصرفية في مصر

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ملخص الدراسة

الهدف من هذا البحث هو تحليل تأثير الرقمنة على تفاعل العملاء المطبق على عملاء شركات التمويل الأصغر غير المصرفية في مصر. وفقاً لمراجعة الأدبيات، طور الباحثون الإطار المفاهيمي للعلاقات بين متغيرات البحث (الرقمنة، ومشاركة العملاء). اعتمد الباحثون على استقصاء تم تحميله على google drive بتنسيق google form لجمع بيانات البحث. تمت مشاركة الاستقصاء المُدار ذاتياً عبر قنوات التواصل الاجتماعي لشركات التمويل الأصغر غير المصرفية في مصر. كانت الردود التي تم جمعها ٤٢١، والردود الصحيحة كانت ٤٠٤. وتكشف النتائج أن هناك تأثيراً مهماً وإيجابياً ومباشراً للرقمنة على تفاعل العملاء. بالنسبة لأبعاد الرقمنة، أظهرت النتائج أن ثلاثة أبعاد فقط من الأربعة تؤثر بشكل كبير على تفاعل العملاء، وهي: رقمنة دعم الخدمة، ودعم التحليل الرقمي، ورقمنة تكامل البيانات ودعم الوصول. بناءً على نتائج البحث، قدم الباحثون عدة توصيات للممارسين في مجال التطبيق.