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Covid-19 Effect on Consumers Perception toward E-Payment: A Case Study on Kuwaiti Consumers

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Abstract

As an act of risk management, most governments around the world started imposing curfews and lockdowns to contain the spread of covid-19. These restrictions led e-payment to become the main method of conducting financial transactions. It is well documented that the volume of e-payments transactions had risen dramatically during and after covid-19 lockdowns and Kuwait was no exception. This study aims to identify the sources of that increase in e-payment transactions. Using the data of a questionnaire that was distributed to 170 participants, results showed that covid-19 resulted in an increase of 136% in e-payment in Kuwait. Using ordinary least square regression (OLS) method, results revealed that the age of the consumer had a statistically significant direct effect on the increase in volume while the consumer income had a statistically significant inverse relation with the increase in e-payment transactions volume. On the other hand, factors such as consumer gender, education, and information technology (IT) literacy showed no statistically significant effect on the increase in e-payments volume.
Keywords: E-Payment; Kuwait; Covid-19; Risk tolerance; Information technology (IT) literacy.

1. Introduction

E-payment in its simplest forms is a mode of payment that is done electronically which does not involve physical cash. In comparison to the traditional payment methods, e-payment has many advantages that includes security, reliability, scalability, anonymity, acceptability, privacy, efficiency, and convenience (Chou *et al.*, 2004). Nakhumwa (2013), showed that security, usefulness, ease of use, benefit, cost and convenience were the most influencing factors that affected the adaptation among individuals and organizations. These advantages made e-payments crucial for electronic commerce (e-commerce) (Kousaridas *et al.*, 2008). But despite the advantages of e-payment technology, many users are still reluctant toward that method. Boateng *et al.* (2015), stated that the lack of trust and confidence, inadequate computing skills were the main factors behind the non-adoption of e-payment systems. Covid-19 lockdowns forced those consumers to overcome their fears toward financial technology and start exploring it. Ahmad *et al.* (2023), showed that covid-19 significantly influenced the emergence of e-payment in Malaysia and that internet banking usage and e-commerce showed great potential during the pandemic with a substantial increment since 2020. Khan *et al.* (2021), stated that as a result of covid-19 pandemic limited mobility the usage of e-payment methods increased dramatically.

Elderly people tend to be more reluctant in adapting new technology. Riskinanto *et al.* (2017) showed that older generation perceive technology or new inventions as hard to use, while the younger one might accept it with ease and are more likely to use it. Vinitha and Vasantha (2017), found significant inverse relation between age and perceived benefits of technology. On the other hand, Jiyeon and Hyeyoung (2020) showed that elderly are the fastest growing users of e-commerce and they are becoming less hesitant in using new technologies. Chidiac *et al.* (2022) found that, in Canada during and after covid-19, users above 50 years of age had the highest increase in e-payment and e-commerce usage. When it comes to gender, Chawla and Joshi (2020) showed that males were more likely to use the technology as they find them easy to use compared to women. Abdullah and Ward (2016), also showed that men's technology self-efficacy scores are higher than women's. Furthermore, Ong and Lai (2006) found that men

rated perceived ease of use higher in terms of new technology use than women who are usually hesitant to adopt new technologies because they believe they are complicated which can be manifested as a lack of confidence and the anxiety that comes with it as concluded by Chawla and Joshi (2020). As a result of covid-19, Chidiac *et al.* (2022) found that women in Canada reported using technology more than men indicating the shift in women attitude toward technology.

Poor societies tend to be cash-based for example in 2011 only 44% of Indians had a bank accounts but that percentage increased to 78% in 2022 and that was mainly due to covid-19 (Vikhe and Vikhe, 2023). Middle and high income individuals are more used to conducting their financial transactions through financial technology methods (Ishiobo, 2023), but after covid-19 huge increase in e-payments usage started to show in low income individuals (Al-Dmour *et al.*, 2021). Higher educated persons tend, in most cases, be more knowledgeable and make higher income than their less educated counterparties. Jati *et al.* (2021), showed in their study strong positive relation between education, IT literacy, and income level. In their study on south Asian countries, Munir and Kanwal (2020) found strong direct relation between income and education. Zango (2019), studied consumer attitude toward e-payment in Nigeria and found strong positive relation between IT literacy and e-payment usage. Also, using data from Ethiopia, Gofe and Tulu (2019) found customer's education and income level had positively influenced their e-payment activities.

With financial technology methods becoming more user friendly, the amount of adaptation increased but in a low scale due to many reasons such as trust and not understanding the way these methods work. With covid-19 lockdown those who resisted the new financial technology were forced to use it resulting in a drastic increase in usage. According to Trivedi *et al.* (2023) covid-19 had strong effect on consumer behavioral toward technology as a whole and financial technology in particular.

The aim of this study is to examine the following hypotheses;

H_1: There is a relation between users' age and change in usage before and after covid-19

H_2: There is a relation between users' Gender and change in usage before and after covid-19

H_3: There is a relation between users' Average income and change in usage before and after covid-19

H_4: There is a relation between users' education level and change in usage before and after covid-19

H_5: There is a relation between users' IT literacy and change in usage before and after covid-19

2. Research Methodology and Empirical Results

This study is based on a questionnaire that was distributed to 170 participants. The data obtained from the survey are used to examine the relation between the dependent variable which is the change in weekly e-payment usage and the independent variables which are age, gender, average income, education level, and IT literacy using ordinary least square regression (OLS). The formula used to examine the relation is as follows;

$$\Delta Trans = \alpha + \beta_1 Age + \beta_2 Gender + \beta_3 Income + \beta_4 Education + \beta_5 IT\ literacy \qquad (1)$$

Descriptive analysis is presented in table 1 where it can be seen that before covid-19 the average weekly use of e-payments was 7.17 times and that usage increased by 82.67% to reach 13.1 times per week and that is in line with the literature as stated by Ahmad *et al.* (2023), Khan *et al.* (2021), Al-Dmour *et al.* (2021), and many others. Using kurtosis and skewness results to identify distribution normality of the data, it can be seen that both of them fall within the acceptable range of normal distribution since the data fall between ±3 and ±10 for skewness and kurtosis respectively (Klein, 1998).

Table-1. Descriptive Analysis

	# Before	*# After*	*Age*	*Gender*	*Ave Income*	*Education*	*IT literacy*
Mean	7.17	13.10	42.87	0.46	1938.20	2.54	1.59
Standard Deviation	3.95	4.73	14.14	0.50	958.03	1.25	1.17
Kurtosis	-0.33	0.07	-1.44	-2.03	4.15	-0.02	-0.60
Skewness	0.46	0.13	0.01	0.18	1.89	-0.40	0.31
Minimum	1	3	22	0	850	0	0
Maximum	18	25	68	1	5600	5	4
Count	170	170	170	170	170	170	170

In the correlation matrix shown in table 2, it can be seen that there is a strong positive relation between education and IT literacy and also positive relation between education level and average income which supports Jati *et al.* (2021), Fauzi *et al.* (2020), and Zango (2019) conclusions. Using 0 for male and 1 for female as dummy variables in the study, it can be seen that even though females had a higher education level, they consider themselves less IT literate than male participants. When it comes to payment equality, the matrix shows that despite having higher education level, female participants had lower wages than men which supports Munir and Kanwal (2020) findings in regards to gender inequality.

The matrix is also used to detect any multicollinearly in the data that would result in unrealistically high standard error estimates of regression coefficients and in the end can cause false conclusion about the significance of independent variables in the model being evaluated. The threshold used to examine multicollinearity between variables is 0.70. From table, it can be seen that there is no multicollinearity between the variables which means that this problem does not exists. Cronbach's alpha is used to measure internal consistency, a value between 0.60-0.80, is

acceptable and higher value indicates high composite reliability (Hair *et al.*, 2016). By calculating Cronbach's alpha from the correlation matrix, it came at 0.72 indicating that the questionnaire is reliable.

Table-2. Correlation Matrix

	Age	*Gender*	*Average Income*	*Education*	*IT literacy*
Age	1				
Gender	-0.061	1			
Average Income	0.423	-0.145	1		
Education	0.197	0.038	0.567	1	
IT literacy	0.130	-0.141	0.430	0.690	1

In this study the age range was between 22 to 68 years where the sample average showed an increase in e-payment usage of 82.67%. Young users are more open to new technology and are willing to explore it while older people are more reluctant to use new technology. This statement can be observed from table 3 where it shows that users below 25 years showed the most increase in e-payment usage by 108.51% while consumers aged between 40-50 years showed the lowest increase of only 48.08%. This observation contradicts Jiyeon and Hyeyoung (2020) and Chidiac *et al.* (2022) findings and supports Vinitha and Vasantha (2017) conclusion.

Table-3. Age

	# Before	# After	% Change
below 25	5.88	12.25	108.51%
25-below 30	7.89	15.63	98.00%
30-below 40	7.50	14.00	86.67%
40- below 50	9.45	14.00	48.08%
50 and above	6.03	11.31	87.43%
All	7.17	13.1	82.67%

There were 92 male participants and 78 females in the survey and from table 4 it can be seen that e-payment usage among male users had increase by 83.53% compared to 81.78% for females. But when looking at the numerical numbers it can be seen that women tend to conduct more transactions using e-payments both before and after covid-19 than men. This observation tend to be conflicted since it supports Chawla and Joshi (2020), Abdullah and Ward (2016), and Ong and Lai (2006) if looking at it from a percentage point of view and contradict them if seen as numerical numbers.

Table-4. Gender

Gender	# Before	# After	% Change
Male	6.71	12.32	83.53%
Female	7.72	14.03	81.78%

While middle and high income individuals are custom to using financial technology methods for payment purposes as stated by Ishiobo (2023), low income individuals usually conduct their financial transactions using cash. The immobility and lockdowns caused by covid-19 forced low-income individuals to explore new methods for conducting their transactions opening the way for e-payments to expand. From table 5, it can be seen that low-income individuals had the highest percentage increase in e-payment usage of 166.67% but at the numerical level they still conduct less transactions than high income individuals. After covid-19 low income individuals conduct, on an average, 9.6 transactions using e-payment compared to 11.4 transactions for high income individuals.

Table-5. Average Income

Income	# Before	# After	% Change
Below 1000	3.6	9.6	166.67%
1000-2000	7.30	10	37.07%
2000-3000	7.44	12.2	64.49%
Above 3000	9	11.4	26.67%

According to Bayrakdaroğlu and Bayrakdaroğlu (2017) low educated individuals tend to be risk-avert when it comes to financial technology and are reluctant to explore new technology. Morgan *et al.* (2019), stated that the making financial technology more user friendly would result in huge increase in its adaptation especially among less educated users. Covid-19 lockdowns and the more user friendly financial technology became resulted in an increase in e-payment transactions conducted by low educated individuals. In table 6, it can be seen that individuals with low education showed the highest increase in e-payment transactions compared to higher education levels in both as percentage and numerically.

Table-6. Education Level

Education level	# Before	# After	% Change
Below high school	4.67	11.50	146.43%
High school	5.89	10.67	81.13%
Diploma	6.10	11.33	85.79%
Bachelor	8.06	10.67	32.39%
Master	8.50	10.17	19.61%
Doctorate	8.50	9.83	15.69%

There is a strong relation between education, IT literacy and income as concluded by Fauzi *et al.* (2020) and Jati *et al.* (2021). In table 7 it can be seen that the survey participants that consider themselves as IT illiterate showed the highest increase in e-payment transactions while those who consider themselves experts showed negative growth.

Table-7. IT Literacy

IT literacy Level	# Before	# After	% Change
Illiterate	4.27	10.73	151.29%
Below average	6.72	10.73	59.67%
Average	10.11	10.60	4.84%
Expert	11.20	10.53	-5.95%

Looking at the OLS regression output in table 8, it can be seen that the model had a very low explanatory power since the adjusted R square was below 0.50 which means that the variable used do not explain the change in e-payments usage. But never the less the significance *F* is below 0.05 which means that the model is good enough to explain the 9.60% change in users' usage and testing the hypotheses but cannot be used for forecasting purposes. Results from the regression shows that only two variables under study showed statistically significant relation with the change in e-payment usage before and after covid-19. The first variable is age where the results shows statistically significant direct relation between user age and change in usage. The other variable is average income where it showed statistically significant inverse relation with change in e-payment usage before and after covid-19. The other factors under study did not show any statistically significant relation with users' usage.

Table-8. OLS Regression Output

Regression Statistics		F	Significance F	
Multiple R	2.461	2.461	0.0421	
R Square	0.161			
Adjusted R Square	0.096			
Standard Error	1.557			
Observations	170			
	Coefficients	Standard Error	t Stat	P-value
Intercept	1.130	0.688	1.643	0.105
Age	0.037**	0.015	2.510	0.015
Gender	-0.426	0.393	-1.083	0.283
Average income	-0.001**	0.000	-2.356	0.022
Education	0.209	0.247	0.847	0.400
IT literacy	-0.306	0.238	-1.290	0.202

***,**,* represent the confidence level at 99%, 95%, and 90% respectively

3. Conclusion

With covid-19 lockdowns restricting people from going out and buying their needs using cash, this opened a path for e-payment to become one of the main paying methods for consumers. The lockdowns forces consumers to conquer their fears toward financial technology in general and e-payment in particular. As a result of consumer overcoming their fears toward technology and accepting e-payment methods, the number of transactions using e-payment increased dramatically during and after covid-19 lockdowns. This research was set to examine the factors that mostly affected the increase in e-payment transactions in Kuwait. Using the data from 170 participants, results showed that there was a statistically significant direct relation between the increase in e-payment transactions number and an inverse relation with income level. With an increase in e-payment transactions even after the lockdowns, this would imply that e-payment is here to stay.

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