

# Impact of Saudi Payments Network (SPAN) On Bank Efficiency

Mahmoud Al-Zyood



**Abstract-** this paper examined the inspect relationship between Saudi Payments Network and bank efficiency in Saudi Arabia. The regression analysis method was used to test the hypotheses of study, Alpha Coronachs was calculated for the instrument of study (0.953). It is therefore acceptable for the purposes of statistical analysis, and the five-dimensional Likert scale has been adopted to measure the availability of the variables of the study model. Demographics of the respondents have proven that 100% male, 35% executive, 65 % non-executive and the Age of respondents 33.1% (18-25 years old), 35.4% (26-35 years old), 30.4% (36-45 years old) and 1.1% (46-55 years old). The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.682$ ,  $P \leq 0.05$  in banks' effectiveness in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.280$ ) This means that Saudi Payments Network (SPAN may be interpreted (28%) of the variation in the level of banks' effectiveness, and notes that the statistical test value ( $F = 19.215$ ) which is statistically significant at the level of ( $P \leq 0.05$ ). Banks should pay attention to the development and modernization of the technological infrastructure of the bank this leads to increase bank productivity; also Attention should be given to current and future needs of the market and consumers in order to maximize the Bank's market share.

**Keywords:** Efficiency, Saudi Payments Network, ATMS, POS, Transactions, SPAN Cards

## I. INTRODUCTION

Banks are currently facing much challenge, including the speed and efficiency of services provided to their customers and strong competition with other banks, thus banks try to maintain a high level of efficiency in relation to the internal bank and the linkage with electronic systems established by the Monetary Authority. See [Figure \(1\)](#).

The importance of relying on electronic services is demonstrated every day as a result in the field of information systems One of the strategic factors that can improve productivity and performance is technology (Yang et al., 2007)

The Saudi Arabian Network for Payments (SPAN), which was established in 1990 by SAMA, links ATMS and POS. banks use this technology to develop financial transactions by banks (card users) to the card issuers. Also SPAN provides services to GCC Net Member Switches.

The Saudi Arabian Monetary Agency (SAMA) reports that deposits have increased the number of customers and

costs have been reduced in banks using the SPAN. Saudi banks issued ATM cards compatible with the network and were issued at no cost to encourage customers to use the system. The reliance on the SPAN has increased due to the expansion of points of sale and the increase in the number of prepaid cards. The reliance on electronic banking services reduces costs, increases profitability and reduces the risk of relying on traditional methods of service delivery.

The results of several studies show that the impact of e-services on efficiency has been dependent on the development of electronic infrastructure in the country, and therefore consumers prefer to rely on traditional services for not providing all services at a higher rate than traditional services.

As a result, the Saudi Arabian Monetary Agency has developed electronic payment systems so that banks can achieve the best efficiency, reduce costs and increase profitability, which will affect the national economy.

## II. LITERATURE REVIEW

Transformed into the online banking area, where banks these days are discovering new approaches of transporting their offered services to their customers (Ghaziri, 1998). The penetrating competition within the banking sector has motivated banks to innovate, compete, and generate value for customers with long-term benefits (Ahmad, Humayoun, Nawaz, & Bashir, 2011). banks Efficiency is noted in the performance measurements to support bank management to improve processes, market position, and competitive advantage (Berger & Humphrey, 1997; Berger & Mester, 1997; Lin, 2010; Galli zo, Moreno, & Pop, 2011; Abu-Alkheil et al., 2012). The defined of Performance measurement is a process of quantify the efficiency and effectiveness of a deed by Neely, Bourne, & Kenerly (2000). Farrell and Saloner (1985) and Economides and Salop (1992), clarify that regarding to the relationship between, Information and Communication Technology and banks" performance have two inspiring outcomes. Reduction the operational costs of the banks by using ICT, also improvement and encourage transactions between customers by using the network. When banks use accompanied technological development in their services, it will be added value in the services provided to customers. Investment in ICT has positive influence on the financial operations and performance of commercial banks (Kariuki, 2005). While the fast progress in information technology has made some banking everyday jobs more efficient and cost reduction, investments in various technical infrastructure are taking a larger share of banks (Abor, 2004).

Manuscript published on 28 February 2018.

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## Impact of Saudi Payments Network (Span) On Bank Efficiency

According to Shawkey, (1995), (Abdullah, 1985) that the investment in automated teller machines (ATMs) has influence on raises both the size and amount of deposit accounts, reduces banking operation costs, and reductions the staff size and the number of bank branches thus resulting in a growth in the profitability and performance of banks

Kozak (2005) clarify that the improvement of ICT on the cost effectiveness and profit of banks during 1992-2003 and notable that the relationship between ICT, cost savings and productivity is significant.

There are two major outcomes as Result of the relationship between ICT and performance of banks. First, ICT can help decrease banks operational costs, Secondly, ICT can support transactions between bank customers inside the same network. (Economides and Salop (1992) and Farrell and Saloner (1985).

Electronic banking in Ghana get many benefit form innovations because it improved efficiency and nurtured a higher progress in financial intermediation. (Acquah ,2006) also (Frimpong ,2010) note that, innovations in the banking sector forms a motivation which leads to enhancement in the banks capacity, efficiency and financial performance.

According to (Sathye, 1999) consumers motivate to use electronic banking if the Price factors perceived as relative economic advantages. Also, (Sathye, 1999) note that the costs of electronic banking pose a negative impact on its adoption.

According to (Damanpour et al, 2009) note there is massive evidence of a positive relationship between IT investment, Productivity and Profitability.

According to (Simpson, 2002) minimizing operating costs and maximization of operating revenues, is one of the most important reasons to adopted information technology product and service in banks.

Parson, Gottlieb and Danny, 1993 note that the use of computers in the banks increased productivity between 17-23% amid the tested banks, in a study conducted on five Canadian banks Sullivan, R. J. 2000; Furst et al. 2002a; Carlson ,2010; Morrison, C.J. and E. R. Berndt 1990; clarify in their studies the impact of investment in electronic banking on profitability in USA determined that the larger banks using more IT technologies had higher ROE.

According to (Hossein, A ,2011) Through a study conducted on Saderat bank shown that investment in information technology helped to Improved profitability and reduced operational cost by 41%.

According to (Josiah and Nancy, 2012) in their studies of commercial banks in Kenya about the impact of information technology investment on banks profit, using (ROA) and (ROE), note that investment in information technology has appositve impact on the profit.

### III. PROPOSED RESEARCH MODEL

Based on the previous literature the Saudi Payments Network will be an independent variable represented via (effectiveness, utilize the banking system, bank notes, banking facilities, deposits, ineffective competition, international association transactions, annual total number of transactions, credit and debit card transactions, While the bank Efficiency, as dependent variable.

### A. Hypotheses of the study

This study is based on the following main hypothesis and the following sub-hypotheses

**H1:** There is a positive effect of Saudi Payments Network (SPAN) on banks' Efficiency.

### B. Sub- hypothesis

**H1a:** There is a positive effect of Saudi Payments Network (SPAN) on banks' effectiveness.

**H2b:** There is a positive effect of Saudi Payments Network (SPAN) on Encourage to utilize the banking system.

**H3c:** There is a positive effect of Saudi Payments Network (SPAN) on Facility electronic access to their funds at remote locations.

**H4d:** There is a positive effect of Saudi Payments Network (SPAN) on reducing the bank notes in circulation.

**H5e:** There is a positive effect of Saudi Payments Network (SPAN) on reduced the overall demand for bank notes.

**H6f:** There is a positive effect of Saudi Payments Network (SPAN) on increased the uptake in banking facilities.

**H7j:** There is a positive effect of Saudi Payments Network (SPAN) on increased deposits.

**H8h:** There is a positive effect of Saudi Payments Network (SPAN) on avoiding ineffective competition at the transaction delivery points.

**H9i:** There is a positive effect of Saudi Payments Network (SPAN) on support of international association transactions, such as Visa and MasterCard, originating either within or outside the Saudi Arabia

**H10m:** There is a positive effect of Saudi Payments Network (SPAN) on increasing the annual total number of transactions, SPAN cards, Points of Sale terminals and ATMs.

**H11r:** There is a positive effect of Saudi Payments Network (SPAN) on support a full range of credit and debit card transactions at both ATM and Point of Sale terminals.

## IV. RESEARCH METHODOLOGY

### A. Sampling

The population of the study is all commercial banks operating in Saudi Arabia, and the secondary source of data is the annual reports of the Saudi Arabian Monetary Agency (SAMA). Descriptive and statistics have been used in the study to analyze the data.

### B. Data Collection

This study has been showed by means of surveys via questionnaire, in this study, we focus on bank employees in Saudi Arabia. The sampling area was carried out in Jeddah; specifically.

Therefore, the total sample includes 12 banks and the whole number of 120 questionnaires was dispensed, 115 questionnaires had been returned with accomplished survey.

**C. Tests for the Questionnaire:**

**- Validation instrument:**

**-Validity** Face is the process of ensuring that the paragraphs contained in the questionnaire lead to accurate data collection.

To achieve this, the questionnaire was presented to a group of specialized professors and then presented to some members of the study sample to ascertain the understanding of the words and words used and their degree of clarity and ease for the sample of the study.

**-Validity Content:** It means the extent of expression of the paragraphs of the questionnaire on the dimensions of the study, and each dimension accurately represented by a set of questions. Actually, reflect it. This has been confirmed by its presentation to academic and professional specialists.

**-Reliability instrument** Alpha Coronachs was calculated for the instrument of study (0. 953). It is therefore acceptable for

the purposes of statistical analysis, and the five-dimensional Likert scale has been adopted to measure the availability of the variables of the study model

**Statistical Methods** The regression analysis method will be used to test the hypotheses of study using Spss program as well as the percentages and frequencies of the study variables.

**V. DATA ANALYSIS**

**A. Personal and Functional Characteristics Analysis**

Demographics of the respondents have proven that 100% male, 35% executive, 65 % non-executive. Age of respondents 33.1% (18-25 years old), 35.4% (26-35 years old), 30.4% (36-45 years old) and 1.1% (46-55 years old).

**Table-I: Shows the Measurement of the Dimensions of the Study**

Saudi Payments Network (SPAN) (Transactions, SPAN cards, Points of Sale terminals, ATMs)		
No	Question	Average
1.	Using Saudi Payments Network (SPAN) Encourage to utilize the banking system such as Transactions, SPAN cards, Points of Sale terminals, ATMs	4.6932
2.	Using Saudi Payments Network (SPAN) Helps customers to Facility electronic access to their funds at remote locations	3.7522
3.	Using Saudi Payments Network (SPAN) reducing the bank notes in circulation as Transactions, SPAN cards, Points of Sale terminals, ATMs	4.7933
4.	Using Saudi Payments Network (SPAN) reduced the overall demand for bank notes.	3.8514
5.	Using Saudi Payments Network (SPAN) increased the uptake in banking facilities	4.5692
6.	Using Saudi Payments Network (SPAN) increased deposits	4.3755
7.	The Using Saudi Payments Network (SPAN) avoiding ineffective competition at the transaction delivery points.	4.6616
8.	Using Saudi Payments Network (SPAN) support of international association transactions, such as Visa and MasterCard, originating either within or outside the Kingdom	4.3642
9.	Saudi Payments Network (SPAN) increasing the annual total number of SPAN cards.	4.7762
10.	Saudi Payments Network (SPAN) increasing the annual total number of transactions	4.4173
11.	Saudi Payments Network (SPAN) increasing the annual total number of Points of Sale terminals.	4.7933
12.	Saudi Payments Network (SPAN) increasing the annual total number of ATMs.	4.7125
Saudi Payments Network (SPAN)		
13.	Using Saudi Payments Network (SPAN) Encourage to utilize the banking system Which allows banks the ability to use its assets to generate income.	4.5122
14.	Using Saudi Payments Network (SPAN) facilitate the electronic access to their funds at remote locations	3.1377
15.	Using Saudi Payments Network (SPAN) reducing the bank notes in circulation Which allows bank the ability to use its assets to generate income.	4.5656
16.	Using Saudi Payments Network (SPAN) reduced the overall demand for bank notes Which allows bank the ability to use its assets to generate income.	4.6547
17.	Using Saudi Payments Network (SPAN) increased the uptake in banking facilities Which allows bank the ability to use its assets to generate income.	3.8752
18.	Using Saudi Payments Network (SPAN) increased deposits Which allows bank the ability to use its assets to generate income.	4.7681
19.	Using Saudi Payments Network (SPAN) avoiding ineffective competition at the transaction delivery points.	4.2569
20.	Using Saudi Payments Network (SPAN) support of international association transactions, such as Visa and MasterCard, originating either within or outside the Kingdom	3.5378
21.	Saudi Payments Network (SPAN) increasing the annual total number of SPAN cards.	4.5256
22.	Saudi Payments Network (SPAN) increasing the annual total number of transactions	4.6727
23.	Saudi Payments Network (SPAN) increasing the annual total number of Points of Sale terminals.	4.4264
24.	Saudi Payments Network (SPAN) increasing the annual total number of ATMs.	3.8731
25.	Saudi Payments Network (SPAN) increasing the annual total number of SPAN cards.	3.3235
banks' Efficiency		
		4.4544

This study will measure two dimensions: Saudi Payments Network (SPAN) and banks' Efficiency, with an average approval score 4.7108 for Saudi Payments Network (SPAN) and with an average approval score for 4.4544 for banks' Efficiency, this demonstrates the awareness and interest of senior management in the banks in the evolution of their strategies commensurate with Saudi Payments Network (SPAN) In order to achieve Efficiency.as show in [table \(1\)](#).



## B. Discuss the hypotheses of the study

### Sub-hypotheses

#### First Hypothesis

**H1a:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on banks' effectiveness

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.562$ ,  $P \leq 0.05$  In improving the banks' effectiveness in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.260$ ) This means that Saudi Payments Network (SPAN) may be interpreted (26%) of the variation in the level of banks' effectiveness, and notes that the statistical test value ( $F = 17.655$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the first sub-hypothesis:

**H1a:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on banks effectiveness

#### C. The Second Hypothesis

**H2b:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on Encourage to utilize the banking system The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.664$ ,  $P \leq 0.05$  in utilize the banking system in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.240$ ) This means that Saudi Payments Network (SPAN) may be interpreted (24%) of the variation in the level of utilize the banking system, and notes that the statistical test value ( $F = 19.532$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the second sub-hypothesis:

**H2b:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on Encourage to utilize the banking system

#### D. The Third Hypothesis

**H3c:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on Facility electronic access to their funds at remote locations

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.531$ ,  $P \leq 0.05$  in utilize the banking system in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.271$ ) This means that Saudi Payments Network (SPAN) may be interpreted (27%) of the variation in the level of utilize the banking system, and notes that the statistical test value ( $F = 18.346$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the third sub-hypothesis:

**H3c:** There is a positive effect of Saudi Payments Network (SPAN) on Facility electronic access to their funds at remote locations.

#### E. The Fourth Hypothesis

**H4d:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on reducing the bank notes in circulation The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.551$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.230$ ) This means that Saudi Payments Network (SPAN) may be interpreted (23%)

of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 17.415$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the fourth sub-hypothesis:

**H4d:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on reducing the bank notes in circulation.

#### F. The Fifth Hypothesis

**H5e:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on reduced the overall demand for bank notes. The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.522$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.280$ ) This means that Saudi Payments Network (SPAN) may be interpreted (28%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 16.123$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the fifth sub-hypothesis:

**H5e:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on reduced the overall demand for bank notes.

#### G. The Sixth Hypothesis

**H6f:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on increased the uptake in banking facilities. The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.602$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination ( ADJUSTED  $R^2 = 0.280$ ) This means that Saudi Payments Network (SPAN) may be interpreted (28%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 19.567$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the sixth sub-hypothesis:

**H6f:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on increased the uptake in banking facilities.

#### H. The Seventh Hypothesis

**H7j:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on increased deposits.

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.531$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in.

Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.250$ ) This means that Saudi Payments Network (SPAN) may be interpreted (25%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 16.385$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the seventh sub-hypothesis:

**H7j:** There is a positive effect at the level of ( $P \leq 0.05$ )

of Saudi Payments Network (SPAN) on increased deposits.

### I. The Eighth Hypothesis

**H8h:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on avoiding ineffective competition at the transaction delivery points.

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.562$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.260$ ) This means that Saudi Payments Network (SPAN may be interpreted (26%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 17.655$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the eighth sub-hypothesis:

**H8h:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on avoiding ineffective competition at the transaction delivery points.

### J. The Ninth Hypothesis

**H9m:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on support of international association transactions, such as Visa and MasterCard, originating either within or outside the Saudi Arabia.

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.623$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.280$ ) This means that Saudi Payments Network (SPAN may be interpreted (28%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 18.946$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the ninth sub-hypothesis:

**H9m:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on support of international association transactions, such as Visa and MasterCard, originating either within or outside the Saudi Arabia.

### K. The Tenth Hypothesis

**H10r:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on increasing the annual total number of transactions, SPAN cards, Points of Sale terminals and ATMs.

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.555$ ,  $P \leq 0.05$  in reducing the bank notes in circulation in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.240$ ) This means that Saudi Payments Network (SPAN may be interpreted (24%) of the variation in the level of reducing the bank notes in circulation, and notes that the statistical test value ( $F = 19.132$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the tenth sub-hypotheses:

**H10r:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on increasing the annual total number of transactions, SPAN cards, Points of Sale terminals and ATMs.

### L. The Eleventh Hypothesis

**H11:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on support a full range of credit and debit card transactions at both ATM and Point of Sale terminals

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.522$ ,  $P \leq 0.05$  in support a full range of credit and debit card transactions at both ATM and Point of Sale terminals in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.290$ ) This means that Saudi Payments Network (SPAN may be interpreted (29%) of the variation in the level of support a full range of credit and debit card transactions at both ATM and Point of Sale terminals, and notes that the statistical test value ( $F = 16.854$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) the previous analysis requires acceptance of the eleventh sub-hypotheses:

**H11:** There is a positive effect at the level of ( $P \leq 0.05$ ) of Saudi Payments Network (SPAN) on support a full range of credit and debit card transactions at both ATM and Point of Sale terminals

### M. The Main Hypothesis

**H1:** There is a positive effect of Saudi Payments Network (SPAN) on banks' Efficiency

The results of the regression analysis show that the use of Saudi Payments Network (SPAN) has had a direct impact  $B=0.682$ ,  $P \leq 0.05$  in banks' effectiveness in Saudi Arabia, it turns out that the coefficient of determination (ADJUSTED  $R^2 = 0.280$ ) This means that Saudi Payments Network (SPAN may be interpreted (28%) of the variation in the level of banks' effectiveness, and notes that the statistical test value ( $F = 19.215$ ) which is statistically significant at the level of ( $P \leq 0.05$ ) The previous analysis requires acceptance of the main hypothesis:

**H1:** There is a positive effect of Saudi Payments Network (SPAN) on banks' Efficiency

As well as through the statistics issued by the Saudi Arabian Monetary Agency data analysis note that all analysis supports the main hypothesis and sub-hypotheses. According to 2016 data, the transactions through SPAN were SAR446,300m

The ATM service was introduced in 1991 with the POS service being added in 1993. By the end of 2016, the commercial banks had issued more than 26,537,349 million eligible and active cards. (see [Table 2](#)).

SPAN processed ATM transactions to the value of SAR 753,449 billion in 2016 (about 47.28% of all ATM transactions – the remainder being in-house transactions at the issuing banks' own ATMs) and POS transactions to the value of SAR 182,748,679 billion (all POS transactions are processed through the central switch). (see [Table 2](#)).

The POS transaction was SAR 524,569,736. SPAN cards function as both ATM and POS cards. There are almost 17,887 ATM terminals and more than 276,167 POS terminals in

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2016 in Saudi Arabia. (see [Table 3](#)).

The SPAN is also connected to the international payment card networks – Visa, Master Card, American Express and the GCC country switches (see [Figure \(1\)](#)).

The SPAN also operates a Claims Processing System (CPS) to handle inter-bank disputes related to

transactions processed by the SPAN, the rules related to this are set by the SAMA.

SPAN operates 24 hours and there are 16 direct participants with 20,000 SAR maximum value of individual payments.

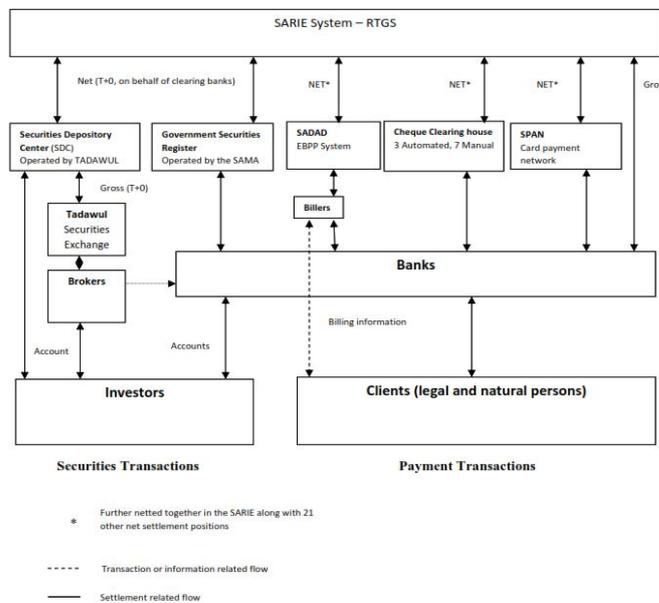
**Table-II: Automated Teller Machines Statistics**

Period	Number of ATMs*	Number of Cards Issued*	No. of Transactions			Cash Withdrawals (Million Riyals)		
			SPAN	Banks	Total	SPAN	Banks	Total
1991	462	553,079	--	--	--	--	--	--
1992	643	806,259	--	--	--	--	--	--
1993	766	1,133,183	16,875,141	--	16,875,141	12,915	--	12,915
1994	914	1,562,384	24,123,079	--	24,123,079	17,750	--	17,750
1995	1,124	1,972,759	31,475,540	21,064,854	52,540,394	22,269	--	22,269
1996	1,359	2,482,938	38,543,833	29,740,453	68,284,286	27,167	--	27,167
1997	1,591	3,052,058	46,977,455	35,803,685	82,781,140	32,526	14,034	46,560
1998	1,808	3,647,881	56,320,769	41,210,184	97,530,953	37,978	33,752	71,730
1999	1,997	4,696,342	76,976,187	59,987,447	136,963,634	49,317	54,625	103,942
2000	2,234	4,775,352	90,414,210	79,031,826	169,446,036	57,679	63,583	121,262
2001	2,577	5,561,353	114,683,311	104,689,321	219,372,632	70,421	66,542	136,963
2002	3,120	5,616,565	133,383,021	131,059,818	264,442,839	76,422	101,333	177,755
2003	3,676	6,032,407	149,601,808	171,898,813	321,500,621	82,472	89,091	171,563
2004	4,104	6,440,893	173,004,367	239,189,114	412,193,481	92,621	107,801	200,422
2005	4,588	8,041,886	205,444,945	327,758,357	533,203,302	108,225	137,677	245,902
2006	6,079	9,971,521	248,567,219	378,144,594	626,711,813	128,761	150,341	279,101
2007	7,543	11,104,901	278,913,211	377,577,939	656,491,150	148,050	160,684	308,734
2008	8,893	12,366,441	338,354,626	533,177,986	871,532,612	184,442	194,567	379,009
2009	9,950	13,712,905	372,974,148	568,727,018	941,701,166	197,769	213,516	411,285
2010	10,885	12,162,407	418,472,501	656,389,761	1,074,862,262	221,482	246,907	468,389
2011	11,766	14,261,993	485,984,904	768,776,365	1,254,761,269	270,593	307,676	578,269
2012	12,712	16,440,258	532,982,683	800,013,253	1,332,995,936	301,473	324,281	625,754
2013	13,883	17,810,653	558,304,609	777,335,949	1,335,640,558	334,331	333,810	668,141
2014	15,516	20,550,274	624,739,995	904,252,659	1,528,992,654	373,030	358,373	731,403
2015	17,223	22,459,275	726,793,585	1,068,741,848	1,795,535,433	435,177	342,023	777,200
2016	17,887	26,537,349	822,232,299	1,100,462,142	1,922,694,441	446,300	307,149	753,449

\* At the end of period.

(--): Not Available

Note: No. of ATMs includes the 13 ATMs located in the premises of SAMA.



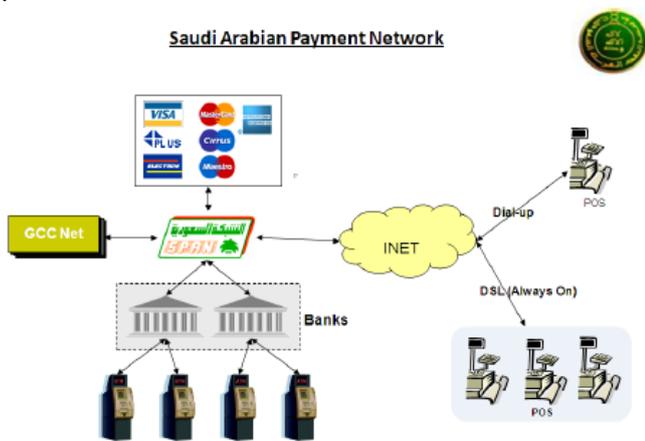
**[Fig.1: The National Payments System in the Kingdom of Saudi Arabia]**

Table-III: Number of POS

Period	Sales	No. of Transactions	No. of Points
	(In Thousand Riyals)		of Sale Terminals*
1993	16,500	91,688	1,274
1994	640,000	1,899,801	9,957
1995	2,005,532	4,470,498	14,020
1996	3,214,953	6,834,075	15,679
1997	4,102,410	8,667,022	15,881
1998	5,004,437	10,896,137	15,885
1999	6,278,034	14,283,316	16,419
2000	7,372,991	17,970,971	18,537
2001	10,238,545	23,962,839	21,631
2002	14,729,107	33,203,974	24,291
2003	19,706,775	43,018,097	29,060
2004	23,971,388	52,177,384	35,521
2005	28,075,759	66,126,594	44,253
2006	30,966,299	83,131,750	52,784
2007	39,430,624	99,434,671	61,557
2008	51,403,483	120,683,743	72,351
2009	56,256,358	124,830,388	82,620
2010	71,855,105	151,183,608	80,505
2011	98,904,916	190,301,481	88,793
2012	122,225,709	237,945,994	92,538
2013	134,194,183	265,315,873	107,763
2014	159,970,264	327,034,423	138,779
2015	172,835,453	394,915,865	225,372
2016	182,748,679	524,569,736	276,167

\* At the end of period

\* Source: SAMA



[Fig.2: The SPAN System – Payment Card Switch]

VI. CONCLUSION

Through the previous findings, the following recommendations are proposed

- A. Banks should pay attention to the development and modernization of the technological infrastructure
- B. Attention to customer needs, market and future bank strategies
- C. Linking technological development with current and future Bank strategies
- D. Developing technological products of banks
- E. Increase awareness of using ATM cards and sales of points

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