The Mediated Impact of Health Care Insurance Inclusion Between Hospital Management and Operation Efficiency in Saudi Arabia

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Abstract: The healthcare scene in Saudi Arabia has been experiencing notable changes, characterised by an increasing focus on enhancing the quality and availability of medical services. Given the significant role that hospitals play in the provision of healthcare services, it is essential to comprehend the interplay between management strategies and operational efficiency. In a country without fixed and implanted national health care insurance program, like KSA, it is a challenge to modify the weak existed program to a big project of national health care insurance program. This inclusion despite making high beneficial for health care of the human but making high challenge for health care management and could affect the Management Efficiency which was almost affected by different variables like Management Staff Satisfaction. Facilities Availability, Management Cost Reduction and Patient Safety Improvement Plan Healthcare providers had to have compensatory shift that healthcare administrator had to provide after healthcare insurance changes. This study will benefits hospital management practises on operational efficiency results, using well-established theories of organisational management and healthcare economics. Furthermore, the research investigates the degree to which the existence of health care insurance coverage acts as a mediator in this association. The presence of health care insurance plays a pivotal role in shaping patients' ability to get medical services and has the potential to influence the efficacy of hospital management approaches. In order to accomplish these aims, quantitative research have been used. Quantitative data is collected by means of surveys and archive hospital performance measures, derived from interviews and focus group discussions conducted with important players within the healthcare sector of Saudi Arabia.

Keywords: Health care Insurance, Hospital Management, Cost Reduction, Staff Satisfaction, Inclusion, Patient safety, Improvement plane

1. INTRODUCTION

Health care and its services considered the first priority for ministry of health in all Middle East. Accessibility of the health care services to every and all persons in the community is a prominent target for all government in Middle East in the Middle east, the health and health care quality and improvement, is a key priority for the government, and in that time plays an important role in the management process. The importance and effect of health care insurance is highly observed all over the world and in Saudi Arabia specially to get this target (Rosenthal et.al., 2023, Alkhaibari et. al., 2023). Health insurance accompanied with better employment of health care services and higher health outcomes. In the way to improve access to health care to be more affordable, a change in the health care system and insurance had occurred in KSA. These changes need a special hospital management replay, as the management of changes in health care is the corner stone in professional experiences. Change management considered the most prominent key in health care management (Hamidi, Regmi& van Teijlingen, 2023). In this case, we will try to assess the impact of the health care insurance . inclusion in hospital management through evaluating a questionnaire given to healthcare professional in governmental hospital in KSA and evaluating an interview with a key manger in the same hospitals. Also, in an attempt to define the effective hospital management response to health care insurance inclusion, an important patient safety indicator has been evaluated which is related to the financial improvement and availability of patient needs (Safiri et. al., 2023).

With increasing level of education, human was more likely to be healthcare insured, Education and wealth were linked with having healthcare insurance, Because of all of the people who were supposed to receive the medical care they need without experiencing the financial difficulties in connection with your payment, stock split, the public health insurance system, which can lead to the inequalities and economic problems, and the use of health care services, Long-Term Care Insurance had a significant positive effect on the healthcare and life quality of human (Al-Eitan, Sendyani & Alnimri, 2023). The unbalanced distribution of the accessibility and quality of medical services was a global challenge for improving the sustainability of healthcare systems, these leads to high requirement of

national health care insurance program. In a country without fixed and implanted national health care insurance program, like KSA, it is a challenge to modify the weak existed program to a big project of national health care insurance program. This inclusion despite making high beneficial for health care of the human but making high challenge for health care management and could affect the Management Efficiency which was almost affected by different variables like Management Staff Satisfaction (Greenslade et. al., 2023).Facilities Availability, Management Cost Reduction and Patient Safety Improvement Plan Healthcare providers had to have compensatory shift that healthcare administrator had to provide after healthcare insurance changes. The current study rationale was to identify the effect of this health care insurance inclusion on the efficiency of health care management and was it positively affected or negatively affected (Hoveidaei et. al., 20323, Pardo & Prato, 2023).

The healthcare sector has emerged as a significant focal point for the Saudi Arabia government, resulting in notable advancements in the provision of healthcare services in terms of both quantity and quality (Huraysi et. al., 2023, Al-Wathinani et. al., 2023). In a comprehensive analysis of healthcare systems worldwide, Gallagher posited that while numerous nations have experienced substantial expansion in their healthcare systems, it is arguable that no other nation, aside from SA, with a significant geographical expanse and population, has achieved comparable advancements within a similar timeframe (Almusawi et.al., 2023). Notably, this progress has resulted in the provision of a relatively elevated standard of care that is accessible to nearly all segments of the population (Gurajala, 2023, Yousef et. al., 2023). Moreover, as per a comprehensive analysis conducted by the World Health Organisation in 2000, the healthcare system in Saudi Arabia attained a commendable position of 26th out of 190 countries globally. Notably, this ranking places Saudi Arabia ahead of several developed nations, including Canada (30th), Australia (32nd), and New Zealand (41st). Additionally, it is worth mentioning that neighbouring countries in the region, such as the United Arab Emirates (27th), Qatar (44th), and Kuwait (45th), were also included in this evaluation. In the year 2021, the healthcare system of Saudi Arabia was positioned at the 55th rank out of a total of 163 countries. Notably, the top ten countries in terms of healthcare system performance, listed in ascending order, were South Korea (1), Taiwan (2), Denmark (3), Austria (4), Japan (5), Australia (6), France (7), Spain (8), Belgium (9), and the United Kingdom (10). According to the World Population Review (2021), the United States was positioned at the 30th rank, Canada at the 23rd rank, the United Arab Emirates at the 20th rank, Qatar at the 33rd rank, and Kuwait at the 71st rank (Almutairi et. al,., 2023). The diminished position observed in 2021 can be attributed to a decline in various metrics pertaining to healthcare establishments. The Ministry of Health (MOH) has highlighted several challenges that the healthcare system presently confronts. These obstacles encompass a scarcity of human resources, the fragmentation of the MOH's various responsibilities in financing, provision, control, and supervision of healthcare delivery, inadequate financial resources, the privatisation of public hospitals, the proficient management of chronic diseases, and the formulation of pragmatic policies to address national crises. In order to surmount the obstacles at hand, the Ministry of Health (MOH) implemented a series of frameworks aimed at achieving various objectives (Rasheed et.al., 2023, Moussa et.al., 2023, Alanazi et. al., 2023). These frameworks encompassed the diversification of funding sources, the development of information systems, the enhancement of the human workforce, the activation of the MOH's oversight and monitoring function in healthcare provision, the promotion of a greater involvement of the private sector in delivering health services, the enhancement of the quality of preventive, curative, and rehabilitative care, as well as the equitable distribution of healthcare services across all regions (Saeed, Saeed, & AlAhmri, 2023, Almusawi et. al, 2023).

The complex relationship between hospital management practises and operational efficiency has garnered significant interest in the dynamic field of healthcare administration and service delivery in Saudi Arabia. Nevertheless, an often overlooked and crucial aspect within this particular association is the incorporation of healthcare insurance coverage (Alhowaymel et. al. 2023, Alfaifi, 2023, Aldogiher, 2023). The focal issue pertains to comprehending the degree to which the incorporation of health care insurance functions as a mediator, impacting the relationship between hospital management techniques and results related to operational efficiency (Alshahrani, 2023). Notwithstanding the diligent efforts of the Saudi Arabian government to enhance the accessibility and quality of healthcare, there are persistent issues in the management of hospital operations. Hospital administrators are responsible for the implementation of efficient management strategies aimed at improving operational efficiency,

optimising the allocation of resources, and enhancing the quality of patient care. However, the relevance of healthcare insurance in this context remains uncertain (Almutairi et. al., 2023, Alshatti et.al., 2023). The role of insurance in influencing patients' ability to receive medical care is well recognised, however, its potential as a mediator between management strategies and operational efficiency has not been thoroughly investigated in a systematic manner (Abdalla, Pavlova, & Groot, 2023).

The issue is emphasised by the complex sociological and economic elements that are inherent within the healthcare system of Saudi Arabia. The dynamics of healthcare use and management are influenced by cultural attitudes, legislative frameworks, and economic inequities (Alzahrani et.al., 2023, Alzghaibi et.al., 2023, Abdulkarim & Subke, 2023). Therefore, it is crucial to conduct a comprehensive examination into the possible mediating impact of health care insurance inclusion on the correlation between hospital management practises and operational efficiency. The exploration of this issue shows potential for discovering valuable knowledge that may be used to guide policymaking, assist hospital managers in implementing focused approaches, and help to the continuous improvement of Saudi Arabia's healthcare system (Al-Wathinani et. al., 2023, Alotaibi et. al., 2023). The Aim of this study is to identify the extend of effect of healthcare insurance inclusion as a mediating factor in in hospital management efficiency.

2. LITERATURE REVIEW

Saudi Arabia has had a significant impact on the worldwide Islamic insurance business, which is expanding at an increasing pace. It is commendable that the Saudi insurance sector has grown so rapidly in such a short amount of time. The only registered insurance firm in Saudi Arabia up until 2004 was NCCI. The CIL, however, outlined the measures necessary for other insurance providers to enter the market. insurance firms have been registered in Saudi Arabia by the end of 2012. These businesses must be publicly listed on the stock exchange market. According to an Ernst & Young research from 2013, the total gross contributions to Islamic insurance worldwide reached USD 11 billion at the end of 2012. The Saudi insurance industry contributed 51% of the total contributions. Gross written premiums (GWP) in the Saudi insurance market increased to SR 21.2 billion in 2012, which is more than three times the SR 6.9 billion achieved in 2006. Over the four years prior to 2011, the overall GWP increased by an average of 21.5% annually (Alsuyayfi et. al., 2023, Jelili Amuda & Alabdulrahman, 2023, Osman, Aljeddani & Samontaray, 2023).

Islamic insurance policies provide equivalent risk coverage as conventional policies. Some Islamic insurance plans have slight variations, such as distinct names and policy characteristics. According to the Cooperative Insurance Law, insurance is divided into three categories: general insurance, which covers things like accident and liability insurance, as well as insurance for cars, boats, aeroplanes, energy, and engineering; health insurance; and protection and savings insurance. The latter includes life insurance, sometimes referred to as family takaful in Malaysia. There aren't many different forms of insurance available in Saudi Arabia. The two most popular forms of insurance acquired in Saudi Arabia are car and health insurance. There doesn't appear to be any other insurance, like life or house insurance. Many Saudis are ignorant of the significance of insurance, which will be discussed momentarily since they believe it to be against Islamic Law (Alsuyayfi et. al., 2023, Jelili Amuda & Alabdulrahman, 2023, Osman, Aljeddani & Samontaray, 2023). In its response to the 2030 Vision, the KSA Minister of Health said that the health care system is now oriented upon employees and resources rather than patients or people. It is likewise centered on institutions rather than on people. A health-care system must be both accessible and responsive to the total well-being of its patients. This empowers the healthcare insurance inclusion, which gave a challenging to hospital mangers (Saudi Arabia Healthcare Industry Overview, 2019).

In the year 2003, Venkatesh introduced the Unified Theory of Acceptance and Use of Technology (UTAUT), which may be seen as an expansion of the Technology Acceptance Model (TAM). The UTAUT framework is an integrative approach that combines eight theories, including human behavior theory, in order to elucidate the factors that contribute to the variation in technology adoption and intents to utilize technology. The use of this particular

model has been widely employed in assessing the adoption of information technology, with its implications extending to both healthcare practitioners and employee alike. The UTAUT posits that management staff satisfaction, facilities availability, management cost reduction and patient safety improvement can influence the inclusion of health care insurance. Numerous research endeavours have used the Unified Theory of acceptability and Use of Technology (UTAUT) framework within the realm of healthcare to effectively forecast the willingness of providers to embrace innovations. However, a limited body of literature exists that has employed this model to examine the factors that influence the inclusion of healthcare insurance. Nevertheless, it is worth noting that three comprehensive evaluations of existing research have reached the consensus that the UTAUT model demonstrates efficacy in accurately forecasting the attitudes and intentions of both employee and healthcare providers in relation to theinlusion of health care insurance. In their study, Khatun et al. (2017) argue that the occurrence of low-usage rate, resistance, and abandonment of new technology might be attributed to inadequate consideration of end-user responses. Hence, this research endeavors to investigate the perspectives of employee about the inclusion of healthcare insurance and how it can improve hospital management efficiency.

3. RESEARCH METHODOLOGY

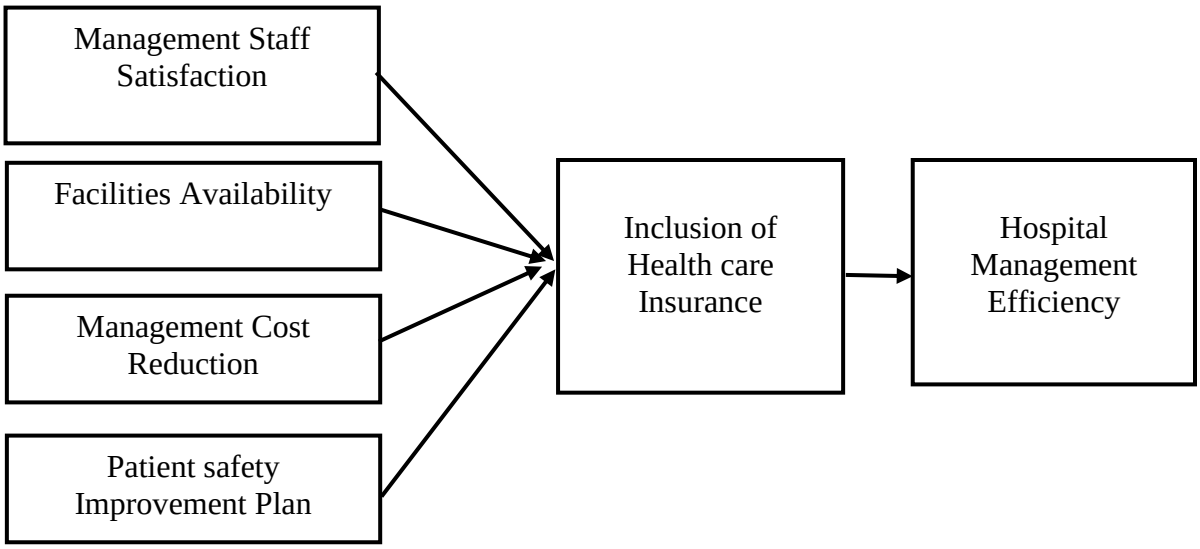

Figure 1 Conceptual Framework

This research involved a four independent variable, were: Management staff satisfaction, facilities availability, management cost reduction (by prevention focusing on technology, compensating quality, and increased demand for care) and last factor was Patient safety improvement plans. Also, the research included a mediating factor which was health care insurance. inclusion and dependent variables which was Hospital Management Efficiency. This study employed a survey-based research method to answer the research questions and to achieve the research objectives. According to Fowler, (2014) a survey is a technique employed for collect data on one's personal details, sociological backgrounds, sociological, belief and attitude over a particular time period. Fowler (2014) and Sauders et al. (2003) explained that a survey can be in form of self-administered questionnaire which could be distributed through emails and posts questionnaire, as well as delivery and collection questionnaires, survey can also be done through the telephone, computer, electronic media as well as face to face interviews. Another form of survey is people and event observation when the samples are recorded through video or audio recording. In this study, a self-administered questionnaire was employed to obtain the data. To answer the self-administered questionnaire, the participants will read the questionnaire and record their answers without assistance from the researcher, hence, there is no interference from the researcher which could affect the findings. Leeuw & Hox, 1988).

Because there are more representative governmental hospitals in KSA, the study population consisted of hospital staff. Based on random and purposive sampling, the types of hospitals predicted to change in health care insurance were examined to pick a representative hospital sector population. A total of 5 hospitals, which considered the main hospitals in eastern province in KSA the place where healthcare insurance inclusion started first according to 2030 view from government priority areas. We employed disproportionate methodologies and random sample sizes. The total number of employees in the five hospitals was 3800 staff (and were distributed as 1100, 1050, 700, 550 and 400). According to the sample size proposed by Sekaran and Bougie (2016), a community of sampling from more than 100,000, the sample size needed is 384. In this current study, the researcher will distribute 384 questionnaires.

This research utilized Google Forms to present an online questionnaire survey that will be shared via email to the participants. The questionnaire will be designed to address the issues under investigation deductively from the insights emerging in the literature review. Conducting an online survey is a convenient and effective approach to reach a large research sample. The questionnaire will be designed based on guidelines offered by Taherdoost (2019). A Likert scale and rating scale will be used in the form of multiple-choice questions. The participants will respond to strongly agree, agree, neutral, disagree, and strongly disagree. According to Taherdoost (2019), this approach is employed in attitude measurement and motivational research, and in investigating complex situations where it is difficult to quantify the interacting factors. The study will offer a descriptive survey, which is appropriate in investigating the existing circumstances. The data analysis procedure mainly involves data entry, data screening, and the execution of appropriate data analyses for the obtained data (Sekaran 2003; Churchill & Brown 2004). Through data screening, any errors and missing data can be identified. Apart from acquiring the descriptive results, the validity of the data and response bias are also determined. For this study, IBM SPSS (version 23) was used for data analysis.

3. DISCUSSION

This section presents the analysis and interpretation of data collected from researchers using the questionnaire (prepared for this purpose). The main objective of the study is to verify impact of health care insurance . inclusion in hospital management efficiency in Saudi Arabia. The chapter consists of several parts that together represent an analysis of the data, through which the main and sub-study hypotheses can be verified. The study was based on hypothesis testing and results analysis on the assumptions of modelling structural equations SEM using the Smart4 PLS method.

Reliability analysis

Table 1 Result of pilot study

ABB	Items of Variables	Cronbach alpha	Rho_A	Composite Reliability	AVE
A	Health care Insurance . Inclusion	0.773	0.825	0.831	0.434
B	Hospital Management Efficiency	0.852	0.888	0.888	0.542
C	Management Cost Reduction	0.902	0.913	0.923	0.632
D	Facilities Availability	0.947	0.967	0.956	0.759
E	Management Staff Satisfaction	0.896	0.924	0.914	0.611
F	Patient safety Improvement Plan	0.924	0.947	0.938	0.684

Table 1 of results of pilot study that conducted by same questioner showed that Cronbach alpha all are more than 0.7 which indicate internal consistency reliability leading to stable and consistent result came by the assessment tool. So, as we can see in our study could considered reliable assessment tool for this path model (because as we mentioned all results were above 0.7). In an attempt to measure the convergent validity of the indicators, the AVE (Average Variance Extracted) to validate that the indicators measure what needed to be

measured. AVE must be more than 0.5 (Marko, 2017). As all indicators except indicator A read more than 0.5, So they considered validated.

Reliability and Validity

In this part, the measurement model will be evaluated to ensure the quality of the standards before starting to apply the structural model of the study. Statistical theory suggests that there are a number of metrics that will be used to achieve that goal. Table 2 showed the results of this test.

Table 2 Results of Rho A, Composite Reliability, and Average Variance Extracted.

Items	CR	AVE	Rho_A
Health care Insurance . Inclusion	0.896	0.632	0.858
Hospital Management Efficiency	0.924	0.709	0.902
Management Cost Reduction	0.924	0.709	0.900
Facilities Availability	0.923	0.705	0.897
Management Staff Satisfaction	0.938	0.752	0.918
Patient safety Improvement Plan	0.943	0.768	0.925

Construct Reliability

Construct Reliability is seen as a measure of internal harmonization between Scale Items (Netemeyer,2005) and refers to the equal value of real variation for total variability in scale scores (Brunner & Süß,2005), an indicator of common variability in latent construction (Fornell & Larcker, 1981). Cronbach's alpha is the most common measure for evaluating internal consistency, and in this table Composite Reliability was used and is similar to Cronbach's alpha value but more accurate and comprehensive. The statistical rule indicates that the acceptable value of the test must be greater than 0.7 and not more than 0.95 (Hair et al., 2014). Depending on the results of the table 2 Composite Reliability values lie between the authorized boundaries of 0.7 - 0 .95, so there is an acceptable degree of internal consistency between the scale terms and can be trusted to test the study's hypotheses.

Average Variance Extracted (AVE)

It is a measure of the size of the variation in measurement construction when measurement error occurs (Fornell & Larcker, 1981). Therefore, the Average Variety Extracted to build a building means that the researcher is interested in knowing how much differences are explained in the underlying building or variable elements (Henseler, Ringle, & Sarstedt, 2014). The Average Variety Extracted represents the average variability in the interpreted variables (Kock, 2019). The statistical rule indicates that the minimum AVC test is 0.5, and values above 0.7 are very good. Each value below 0.5 means that Items explains more errors than variability in Construct. Therefore, the test value needs to be greater than 0.5 in any measurement model (Henseler, Ringle & Sinkovics, 2009). Depending on the results, AVE values were greater than 0.5 for all variables in Construct, and 5 out of six were more than 0.7 which are statistically acceptable and can be trusted to test the hypotheses of the study.

Cronbach's alpha

Cronbach's alpha is the most common measure for assessing internal consistency, and the statistical rule indicates that the acceptable value of the test must be above 0.7 and not more than 0.95 (Hair et al., 2014). Depending on the results of the table 3 Cronbach's Alpha values fall within the authorized limits of 0.7 - 0 .95, so there is an acceptable degree of internal consistency between the scale phrases and measurement of what to measure.

Table 3 Cronbach's alpha

Items	Cronbach's alpha
Health care Insurance . Inclusion	0.855
Hospital Management Efficiency	0.897
Management Cost Reduction	0.897
Facilities Availability	0.895
Management Staff Satisfaction	0.917
Patient safety Improvement Plan	0.924

Individual Item Validity (Cross Loading)

This validity means the extent to which individual item is measured separately (Sam, 2013). The statistical rule states that the test value must be greater than 0.7. In case, the value of Individual Item Value is greater than the authorized value, it means that all Items are reliable and accurate. Based on Path Analysis results in Table 4, the test values for all items are greater than 0.7, so all items in latent variables Latent Variables three (SMM, BI. OPD) is statistically important, reliable, and reliable in testing study hypotheses.

Table 4 Individual Item Validity (Cross Loading)

Variable	Items	Cross Loading
Health care Insurance . Inclusion	A1	0.806
	A2	0.834
	A3	0.813
	A4	0.743
	A5	0.776
Hospital Management Efficiency	B1	0.845
	B2	0.858
	B3	0.874
	B4	0.874
	B5	0.753
Management Cost Reduction	C1	0.819
	C2	0.906
	C3	0.840
	C4	0.864
	C5	0.775
Facilities Availability	D1	0.804
	D2	0.859
	D3	0.868
	D4	0.840
	D5	0.825
Management Staff Satisfaction	E1	0.860
	E2	0.842
	E3	0.889
	E4	0.875
	E5	0.870
Patient safety Improvement Plan	F1	0.884
	F2	0.881
	F3	0.880
	F4	0.848
	F5	0.889

Discriminate Validity

In psychology, Discrimination Value tests relate to notions and measurements that are not related to each other. In 1959, Campbell and Fiske (1959) introduced the concept of Discrimination Validity to evaluate test validity (Henseler, J., Ringle, C.M., Sarstedt, M., 2014). Originally, the use of Construct Value and Discrimination Value techniques when evaluating any of the new tests indicates that the concept test is not associated with a significant

degree of other tests designed to measure concepts that differ in their theoretical basis (Hodson, 2021). Discriminate Value represents the degree to which Items differ between Constructs or measure distinct concepts by examining the links between potentially overlapping Constructs measures. It is the degree to which standards are different when qualities are not interrelated (Campbell & Fiske, 1959). In other words, Discrimination Value represents the extent to which Construction Construct is distinct from other Constructs by experimental standards (Hair et al., 2010). Discriminate Value can be evaluated using two types of tests: Cross Loading and Fornell Larcker Criterion.

Fornell Larcker Criterion (Latent Variable Correlations).

Fornell & Larcker (1981) proposed a standard for evaluating Discrimination Value. This standard is based on a rule requiring a comparison between the link box of the Average Variety Extracted construction. The Fornell Larcker standard relates to the nature of the common factor model (Fornell & Larcker, 1981). The FL rule stipulates that the underlying variable should explain the best level of variability when compared to the variability in other underlying variables (Fornell & Larcker, 1981). Table 5 contains AVE test values whose value in the current latent variable should be higher than the total associations with all other variables (Esposito Vinzi, Chin, Henseler, and Wang, 2010; Fornell & Larcker , 1981). Table 5 indicates that the value (except the variable 1) of the FL test in the current underlying variable exceeds its value in other underlying variables, meaning that there is no relationship with other underlying variables.

Table 5 Fornell Larcker Criterion

	Health care Insurance. Inclusion	Hospital Management Efficiency	Management Cost Reduction	Facilities Availability	Manage-ment Staff Satisfaction	Patient safety Improvement Plan
(A) Health care Insurance. Inclusion	0.795					
(B) Hospital Management Efficiency	0.801	0.842				
(C) Management Cost Reduction	0.763	0.866	0.842			
(D) Facilities Availability	0.749	0.796	0.838	0.840		
(E) Management Staff Satisfaction	0.717	0.772	0.779	0.805	0.867	
(F) Patient safety Improvement Plan	0.727	0.796	0.820	0.823	0.855	0.876

Collinearity (VIF)

In contrast to the value of VIF which exceeds 10, Collinearity has reached the very dangerous level. In this case regression estimates are completely inaccurate (Frost, 2020). According to the results of the analysis in Table 6, all VIF test values are less than 5. This means that Collinearity's level of variables in the study is not serious, in another ward Collinearity problem was not found. so, it can be said that the terms of the statistical calendar of this test have been met.

Table 6 VIF

Variable	Items	VIF
Health care Insurance. Inclusion	A1	2.674
	A2	2.870
	A3	1.937
	A4	1.586
	A5	1.702
Hospital Management Efficiency	B1	2.342
	B2	2.455
	B3	2.798
	B4	2.839
	B5	1.706
Management Cost Reduction	C1	2.345
	C2	3.646
	C3	2.395
	C4	2.791
	C5	1.874
Facilities Availability	D1	2.039
	D2	2.686
	D3	2.607
	D4	2.971
	D5	2.768
Management Staff Satisfaction	E1	2.519
	E2	2.332
	E3	3.019
	E4	2.801
	E5	2.685
Patient safety Improvement Plan	F1	2.989
	F2	2.934
	F3	2.927
	F4	2.419
	F5	3.063

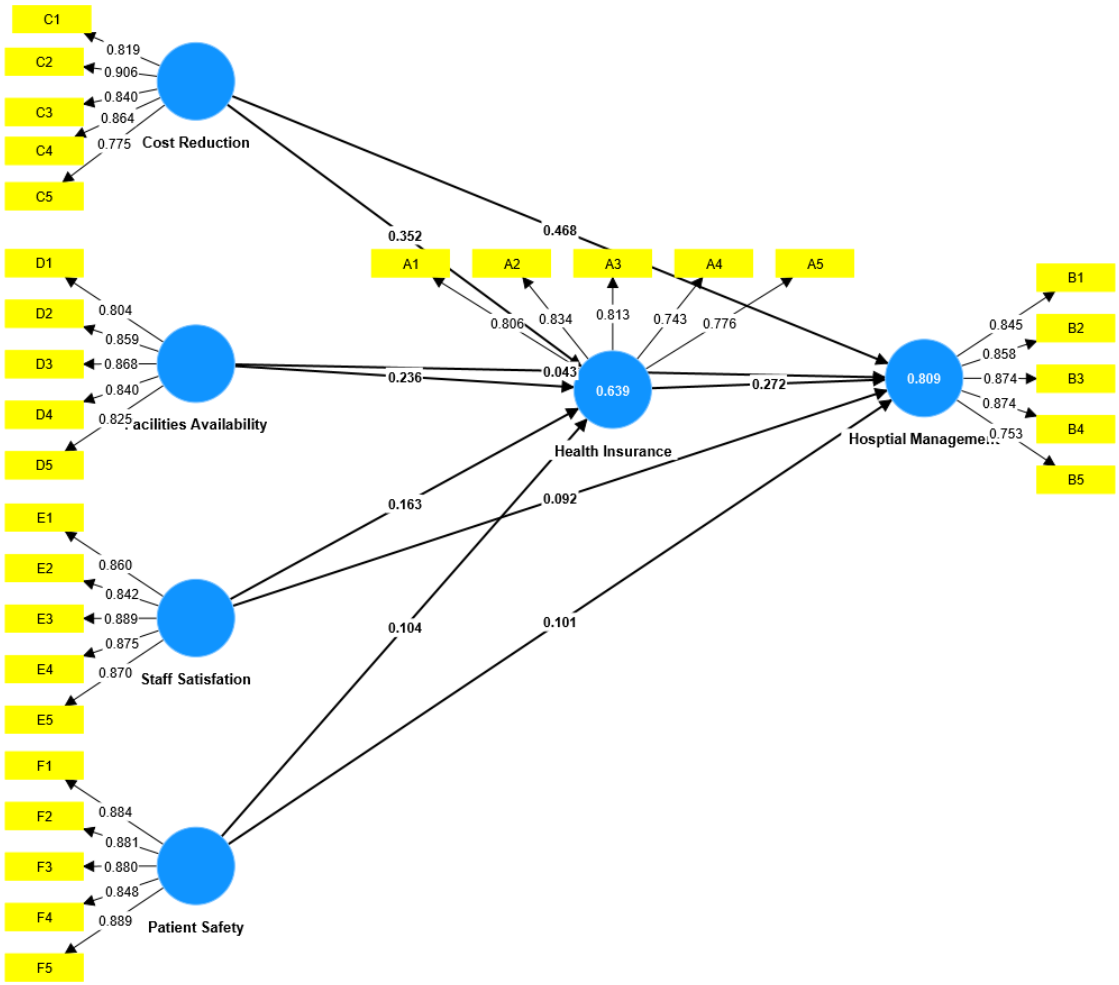

Figure 2 Structural Module

The literature suggests that pathway analysis is a method of dismantling the links between the underlying variables to different parts, with the aim of interpreting the effect in each part (Anonymous, 2004). Track analysis is closely linked to multiple regression. Track analysis allows for a number of theoretical suggestions on cause and effect without manipulating variables (Drikvand, Hossinpor, & Samiei, 2011). Although causal associations have been obtained among variables, they may be insufficient to establish the validity of causal assumptions. Initially they appear in the previous form of one-way arrows, and they reflect the supposed causal relationships between variables. Autonomous variables are called exogenous variables, and subordinate variables are called endogenous variables.

According to the literatures and previous studies in the chapter two, the first research suggested eight Path analysis of direct effect and one with indirect effect, which were There is a significant relationship Management staff satisfaction and health care insurance . inclusion, There is a significant relationship facilities availability and health care insurance . inclusion, There is a significant relationship management cost reduction and health care insurance . inclusion, There is a significant relationship Patient safety improvement plans and health care insurance . inclusion Insurance Inclusion Induced improves of the manger improvement plane of patient safety which improves the hospital management, There is a significant relationship Management staff satisfaction and Hospital Management Efficiency, There is a significant relationship facilities availability and Hospital Management Efficiency, There is a significant relationship management cost reduction and Hospital Management Efficiency, There is a significant relationship Patient safety improvement plans and Hospital Management Efficiency. And finally, as a mediating

factor and finally There is a significant relationship between health care insurance. inclusion and Hospital Management Efficiency. Those Path analysis had been studied in the next table from the point of significance.

Table 7 Path Direct Effects of First Hypotheses

H Relationship	p-value	Decision	Significance
(E) Management Staff Satisfaction → (A) Health care Insurance . Inclusion	0.163	Positive Relationship	Insignificant
(D) Facilities Availability → (A) Health care Insurance . Inclusion	0.236	Positive Relationship	Insignificant
(C) Management Cost Reduction → (A) Health care Insurance . Inclusion	0.352	Positive Relationship	Insignificant
(F) Patient safety Improvement Plan → (A) Health care Insurance . Inclusion	0.104	Positive Relationship	Insignificant
(E) Management Staff Satisfaction → (B) Hospital Management Efficiency	0.092	Positive Relationship	Insignificant
(D) Facilities Availability → (B) Hospital Management Efficiency	0.043	Positive Relationship	Significant
(C) Management Cost Reduction → (B) Hospital Management Efficiency	0.468	Positive Relationship	Insignificant
(F) Patient safety Improvement Plan → (B) Hospital Management Efficiency	0.101	Positive Relationship	Insignificant
(A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.272	Positive Relationship	Insignificant

In spite of insignificant direct and positive correlation that found between Health care Insurance . Inclusion to Hospital Management Efficiency when p-value was 0.272 but the nine hypotheses will be proved later with the study of the modulating effect of Health care Insurance . Inclusion to Hospital Management Efficiency. So, from the experimental tip, the nine hypotheses of this study have been revaluated and only two hypotheses were significantly correlated in spite that all hypotheses were of positive relation but insignificant.

Assessing the Effect Size f2

f2 is the complementary test of hypothesis p-value (Fidler et al., 2005), which provides a statistical measure of impact size (Kline, 2004). In 2008 Cohen introduced the f2 criterion for measuring impact volume in regression models with mixed effects and hierarchical linear models. The Cohen model is the most suitable for measuring the magnitude of the effect in the current regression model, through which the extent of the effect of the independent variable on the dependent variable can be determined (Cohen, 1988). In the current study, the test explains the size of the impact of SMM (or any of the sub - independent variables) on the online purchase decision. Those Path analysis had been studied in the next table from the point of effect size.

Table 8 f 2 Test Values of First Hypotheses

H Relationship	F2	Decision
(E) Management Staff Satisfaction → (A) Health care Insurance . Inclusion	0.017	No effect size
(D) Facilities Availability → (A) Health care Insurance . Inclusion	0.035	Medium effect size
(C) Management Cost Reduction → (A) Health care Insurance . Inclusion	0.083	small effect size
(F) Patient safety Improvement Plan → (A) Health care Insurance . Inclusion	0.006	No effect size
(E) Management Staff Satisfaction → (B) Hospital Management Efficiency	0.010	No effect size
(D) Facilities Availability → (B) Hospital Management Efficiency	0.002	No effect size
(C) Management Cost Reduction → (B) Hospital Management Efficiency	0.256	Medium effect size

(F) Patient safety Improvement Plan → (B) Hospital Management Efficiency	0.010	No effect size
(A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.440	Large effect size

As a complement to p-value 's previous test, Table 9 shows the results of the f 2 impact size test. The results indicate that there is a strong impact of Healthcare Insurance . Inclusion on Hospital Management Efficiency. The most powerful variable affecting Hospital Management Efficiency was Management Cost Reduction with only medium effect size and all the other variables had no effect size on Hospital Management Efficiency. On the other had the variables has no to small size effect on Health care Insurance . Inclusion except the Facilities Availability which had medium size effect.

Assessing the level of R^2

R^2 Coefficient of Determination is a statistical measure of variability interpretation in one variable when varying in another variable. In other words, the scale is known as R-Square, and it measures the strength of the linear relationship between two variables. Many researchers rely on R2 to analyses trends, to measure the ratio of variability in the dependent variable (DV) that can be explained by one or more independent variables (IV) (Elliott & Woodward, 2007; Hair et al., 2010).

Table 9 R^2 of the Endogenous Latent Variable

H Relationship	R2	Adjusted R2	Decision
Health care Insurance . Inclusion	0.639	0.635	Large Power of Explanation
(B) Hospital Management Efficiency	0.809	0.806	Large Power of Explanation

The results of the R2 determination coefficient test in the ninth hypothesis. Based on the value of the coefficient the contrast ratio will be interpreted in Hospital Management Efficiency when Healthcare Insurance. Inclusion.

Mediating Effect

Based on PLS methodology and data replication 5000 times, calculation of standard error for each track represented by indirect effect (Health care insurance . inclusion to hospital management efficacy), as well as total effect. This method serves to isolate the effect of part of the general model as statistically insignificant, and thus calculate the error in the effect of the modified variable alone. Table 10 indicates that mediator path is statistically significant. Healthcare Insurance . Inclusion as a mediator was studied in the next table as isolated effect on the relationship between Management Cost Reduction, Facilities Availability Management, Staff Satisfaction, and Patient safety Improvement Plan, Patient safety improvement plans and Hospital Management Efficiency.

Table 10 Mediating effect

H Relationship	p-value	Decision
(E) Management Staff Satisfaction → (A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.044	Full Mediation Effect
(D) Facilities Availability → (A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.044	Full Mediation Effect
(C) Management Cost Reduction → (A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.036	Full Mediation Effect
(F) Patient safety Improvement Plan → (A) Health care Insurance . Inclusion → (B) Hospital Management Efficiency	0.028	Full Mediation Effect

To test this hypothesis using the path analysis method in Smart PLS4 methodology. The researcher placed Healthcare Insurance . Inclusion as Moderators variables in the study model. The p-value indicator value was extracted using bootstrapping 500 times. To determine whether to accept or reject the connotation of Moderator, the

statistical rule used in previous hypotheses was used. The decision-making rule provides for acceptance of the Moderator effect if p-value is less than 0.05 (Probability of Error). Table 10 results indicate a dramatic effect of the Moderators on the Hospital Management Efficiency, where they have greater significance values than 0.05. On the study of the mediating effect of Health Care Insurance . Inclusion between Management Staff Satisfaction and Hospital Management Efficiency we found that p-value was 0.044 which mean a significant full mediation effect that changed this relationship from insignificant to significant. The same result and same p-value (0.044) was recorded during the study of the mediating effect of Health Care Insurance . Inclusion between Facilities Availability and Hospital Management Efficiency we found that p-value was 0.044 which mean a significant full mediation effect. Again, we study the mediating effect of Health Care Insurance . Inclusion between Management Cost Reduction and Hospital Management Efficiency we found that p-value was 0.036 which mean a significant full mediation effect that changed this relationship from insignificant to significant. And finally, we empower the idea of dramatic mediating effect of Health Care Insurance . Inclusion upon study of its mediating effect between Patient Safety Improvement Plan and Hospital Management Efficiency and we found that p-value was 0.028 which mean a significant full mediation effect that changed this relationship from insignificant to significant.

CONCLUSION

This study attempted to investigate the impact of health care insurance . inclusion in hospital management through evaluating a questionnaire given to healthcare professional in governmental hospital in KSA and evaluating an interview with a key manger in the same hospitals. Also, in an attempt to define the effective hospital management response to health care insurance inclusion. The study found that Healthcare Insurance . Inclusion that implemented in KSA in Governmental hospitals had a high positive effect on Hospital Management Efficiency because Healthcare Insurance . Inclusion plays a dramatic role as mediator to strength the insignificant relation of the other independent variable on Hospital Management Efficiency to significant positive effect. A direct relation effect of Management staff satisfaction and Hospital Management Efficiency, yet this relation was not significant. On the other hand, after implementation of Healthcare Insurance . Inclusion as a mediator we found a dramatic effect of significant positive relationship Management staff satisfaction and Hospital Management Efficiency. Having a significant positive direct relation effect of manger facilities availability and Hospital Management Efficiency, yet after implementation of Healthcare Insurance . Inclusion as a mediator we found a positive mediating effect of significant value in improving the relationship between manger facilities availability and Hospital Management Efficiency. In spite of having a direct relation effect of cost reduction and Hospital Management Efficiency, yet this relation was not significant. On the other hand, after implementation of Healthcare Insurance . Inclusion as a mediator we found a dramatic effect of significant positive relationship between cost reduction and Hospital Management Efficiency.

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