# The Impact of the Marketing Information System on the Marketing Performance: Analytical Study in the Saudi Communication Company STC

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The research paper assesses the effectiveness of latest technological based information system to enhance the marketing performance by rapid information sharing for decision making among Saudi communication company STC. The study was conducted on upper and middle leadership and data was collected through questionnaires, later it was analyzed on Smart-PLS. The study incorporated important factors of marketing information system namely The Internal Record, Marketing Research and Marketing Intelligence to determine the Marketing Performance. The study reported that internal record and marketing intelligence significantly influence the marketing performance, however insignificant relationship has been depicted between marketing research and marketing performance that shows lack of marketing research capabilities of firms in communication sector. The study recommended improving the marketing research capabilities to enhance the marketing performance in highly competitive business environment.

## Introduction

The current business era requires rapid information to meet environmental developments in telecommunicating industry. The market has shown the swift increase in telecom industry in sharing and adoption of telecom services. The telecom sector has observed the rapid growth which is not only due to inflated market size but as an outcome of adoption of diverse services and inclined competition of telecom industry. The industry of mobile phones has taken new dimension of competition that focus on requiring and retention of existing consumers. This phenomenon of marketing efforts has encouraged large scale investment in telecom sector while observing increased competition and decline in customer churn (Hashmi, Butt & Iqbal, 2013). The rapidly changing business environment requires the internal and external change in capabilities of firms to survival in competition by effective utilization of organizational resources. The firms focus on customer satisfaction by implementing effective marketing strategies to enhance marketing performance while attracting new customer base. The previous studies of marketing effectiveness stress upon strategic development by exploring, exploiting and flexibility of marketing opportunities that reflect organizational capabilities that influence the marketing performance, profitability, growth and customer satisfaction (Panda & Rath, 2016).

The business firms adopt and implement emerging strategies for maintaining their existing performance in increased competitive environment among diverse sectors and small and medium enterprises. The SMEs around the world implement various business strategies including innovativeness, differentiation and cooperativeness to gain competitive advantages and enhancing market performance. The previous empirical evidence established the positive significant link between business strategies and competitive advantage among performance of SMEs but still lack in desirable results so far. The literature shows that decline in sales figures, stagnate performance of SMEs and lack of increase in trends have been observed that need to be improved for competitive advantages of SMEs for increase in marketing performance. The promotional strategy of firms has been less reviewed for determining the competitiveness based on awareness of knowledgeable innovation and brand strengthening through effective utilization of social media (Chung, Jin, Jeong & Yang, 2019). The marketing strategies have been observed as effective tool to influence and reputational development of brand image. The marketing performance believed to be influenced by effective market information strategies and properly implemented marketing initiatives (Yasa & Giantari, 2020).

Today business world needs accurate and timely information for successful and effective outcomes to survive in highly competitive environment. Managers are required to process large data set for optimal utilization of resources and to take decisions on time that must be based on effective information processing. The effective information system has become need of time for organizations due to availability of low-cost IT equipment to be utilized at admin level in small, medium or large scale organizations for operational activities. The literature believes that

organizational performance depends upon contribution of employees while taking appropriate right decisions. The research scholars have stressed upon marketing efforts due to their significant influence on performance specifically customer satisfaction, whereas marketing information system assists in collection, analysis, extract, distribute and process information for managing marketing strategies for accomplishment of organizational goals. The previous literature explored the relational importance of marketing information system for effective marketing initiatives and how it is important in customer management for information sharing that influence the performance inclination. The study conducted on Jordanian banking sector and reported significant relationship between information system and marketing performance which further enable firms to gain competitive advantages (Hashem, 2019).

The Saudi telecom sector is believed to be largest in Middle East region as it started in 1998 after the establishment of Joint Stock Company. The Saudi Telecommunication Company (STC) provides range of telecom services and observed large number of subscribers with significant growth in business. STC recorded 15 million subscribers in early years and in 2013 it rose up to 160 million customers in year 2014 and onwards (Capital, 2014). STC is domestic telecom operator that covers 95 percent of total geographic area of country having monopolistic approach in their services with fixed line. The mobile services provider Al Jawal controlled over 80% of Saudi telecom industry while having three subsidiaries including Alhatif (landline), Saudi Data and SaudiNet (ISP) and currently has established the international market share by acquisition of large telecom companies around the world specifically in Turkey and Indonesia. Early 2000 Saudi government privatized STC by selling 30% of nationals, meanwhile fierce competition has been observed due to entry of new service providers. The establishment of United Arab Emirates' Etisalat mobile operation services company gave tough time to STC for defending their market share by launching their innovative products and superior customer services (Alkahtani, 2016). The STC has observed decline in revenue growth by 7% during 2005 but 2013 showed 1.92% growth and noted 45,602 million SAR and gained significant subscribers according to STC annual report. STC possess more than 160 million customers which is higher than all of their rivals as indicated in annual reports of STC and acknowledged the decrease in revenue growth in recent years. Another fluctuation has been recorded in year 2012-2013 in net profit by 36% in STC and it was based on three major factors including customer churn, regulations for migrants and low pilgrim turnout due to large scale development by government of Saudi Arabia (Alkahtani, 2016).

There are various industries and management that contribute to telecom industry in Saudi Arabia while having large amount of profit by effective utilization of technological developments. The telecom sector of Saudi Arabia largely observed as well performing in market as majority of multinational and local firms are operating (Busari, Khan, Abdullah & Mughal, 2019). The telecom industry has occurred as large amount of economic growth sector due to effective and efficient leadership that enhanced the performance level and reputational up-gradation for

stakeholders. The Saudi telecom industry has observed 16.6% of economic growth and possessed 4th position in developing nations after China and it occurred due to telecom sector (Ilyas, Muneer & Tripathi, 2020). The STC has observed continuous growth in Middle East and well performed due to various reasons including resources, capabilities of employees, effective and efficient leadership with ethical values of business. Today's competitive business environment stated Saudi Arabia as 13th economically competitive country in the world and most economically power in Arabian zone (Alharbi, Dowling & Bhatti, 2019). The three major telecom firms emerged as significant profit and increased market share including Mobility, STC an Zain played major role in economic growth (Ilyas et al., 2020).

**Problem statement**

The small and medium enterprises contribute in economic development of country while adoption of innovative initiatives, various challenges, dynamic mobility, and constant renewal. It has been reported that various projects have been failed and faced problems and obstacles due to lack of information, marketing problems, developmental process by meeting customers' demands and environmental factors. The projects involving implementation of effective marketing information systems for solving marketing problems for efficient decision making through utilization of latest technologies and mechanisms to conduct business operations. Marketing information systems have significant importance in any business sector at local or global level for survival in highly competitive environment. The continuous flow of information is required for effective decision making for meeting challenges and issues in marketing. The current research focuses on effective marketing information system development and implementation for acquiring, storage, retrieval and utilization of resources in creative solution to marketing for surviving marketing performance for organizational success. The previous research studies have highlighted that Saudi communication company come across various weaknesses in implementation of marketing information system and presently not sufficient capable system. The weak flow of information has been reported with poor quality and quantity for decision making at administrative level (Al-Janabi & Mhaibes, 2019). The problem statement for current research can be presented in summarized form that does Saudi Telecom Company (STC) have taken initiative for effective marketing information system to require marketing performance by ensuring its objective to be achieved.

**Objectives of study**

The current study has different objectives in determining the marketing performance due influence of marketing information systems. The study identifies the weakness of current marketing information system and to purpose effective changes to overcome challenges and issues of marketing performance. To determine the influence of each dimension to achieve marketing performance in Saudi Telecom Company is also included in objective of the current study. The

study intends to highlight the recommendation and conclusion for STC for achievement of marketing performance through effective utilization of marketing information system.

## Significance of study

The significance of the study is evident due to importance of marketing performance in today's business era based on latest information systems. The current study is conducted on STC that is considered as largest operator in Saudi Arabia in communication sector. The communication sector requires effective information systems that truly contribute in decision making at administrative level to enhance the marketing performance. It is highly significant to highlight the current weakness of information system that negatively impacts the marketing performance and to incorporate different influential factors to enhance the marketing performance.

## Literature Review

### Marketing performance

Today's competitive world encourage firms to focus on development of marketing strategies and systems based on latest technological equipment for information sharing to gain competitive advantages and to enhance marketing performance. The technological based information systems enable firms to identify the customer's demand and need by utilization of collected information through various sources. The satisfied customers, better and reliable information availability expresses the marketing performance, the availability of information depends upon fetching data from consumers about their habits, needs and demands for products and services that encourage firms to change their marketing plans. The firms identify and grab the opportunities of competition, assess weakness and strength and determine the threats for comprehensive marketing plan to meet competition and harvest business advantages in highly competitive business world. The futuristic firms develop their marketing strategies based on core competencies that can be utilized for availing the opportunities and avoiding the threat while overcoming the weakness to gain competitive advantages and enhancing the performance (Hashem, 2019). The research scholars have expressed that marketing performance is defined in terms of intellectual background, criteria and objectives, marketing purpose and trends determined by the organization. So therefore, marketing performance is expressed as the extent to which firm achieves objectives of plan, environmental variables, possibilities and human resources. Another point of view to define marketing performance in the context of competition is as achievement of performance level in comparison of competitors while focusing on strength utilization and eliminating the weakness. Further it includes the achievement of gaining, retention and sustaining the consumer's preferences and to satisfy the stakeholders in perspective of customers. The market research enables firms to

develop effective marketing plans to improve the operational performance and to enhance the marketing effectiveness (Freihat, 2020).

The marketing performance gains the critical importance due to its association with accomplishment of goals and objectives that affect the market share, profit maximization, and customer satisfaction that impact the economic indicators worldwide based on the development and utilization of latest technological communication information systems. The research scholars have defined three dimensions of marketing performance to highlight its importance

- The theoretical dimension the knowledge indication
- The empirical dimension that focus on studies and research
- The administrative dimension that consider the approaches to evaluate the results

The organizational success depends upon strategic marketing plans' effectiveness that defines the marketing performance or failure expresses lack of achievement of goals in exploiting the opportunities. The rapidly changing competitive environment marketing performance remains under consideration of scholars due to its criticality and emerging issues at marketing perspective. Marketing performance plays major role in achievement of goals and objectives that enable firms to gain competitive advantages and profit maximization by utilization of physical, financial and human resources. The customer's perspective entails the time, patience and assessing the needs, demands and expectations of consumers for achievement of marketing performance. The research scholars have highlighted the importance of marketing performance due to its impact on business, the five different indicators have been occurred in literature that needs to be considered including financial aspect, competition and market aspect, ideas generation to meet customer's demand and assessing the behavior of customers. The first indicator financial aspect includes size of sales, average rotation and profit sharing, the second aspect is competition that entails market share, price and promoting share, the third aspect of ideas of customers includes assessment of customers, their satisfaction level and approach towards the product or service, the fourth aspect is behavior of customer entails the number of customers, loyalty of customers and brokerage and the last fifth aspect is related to innovation which includes the commercial services and return of new services (Hashem, 2019).

**Marketing Information System**

The research studies and practitioners have stressed upon utilization of information systems at strategic level and operational level to conduct business activities for information sharing and efficient communication among stakeholders. The previous studies have addressed the objective of operating business functions through effective technological information systems that serve strategic managerial level (Goñi, 2008). The studies have been conducted in Mexico on CEOs in

communication department, cosmetic industry and textile industry. The studies have depicted that marketing information system found to be effective in collection of data and information related to marketing perspective, forecasting the sales and information to different strategic level at domestic and international perspective. The study conducted on Pakistani SMEs sector for investigation the influence of marketing information system model on results in terms of performance and found that information system achieve better performance in accounts department. The benefits have been harvested in terms of time, effective decision making and support that impact the competitive advantages due to effective marketing information system management (Al-Janabi & Mhaibes, 2019).

The information plays significant important role in effective decision making for planning through utilization of communication among stakeholders of firms. The latest technological equipment enables firms to generate useable information in current highly competitive environment that eradicated the shortage of information that causes disruption in operational activities. The current highly competitive business era requires marketing information system that enables them to present at international level markets in diverse cultures to establish integrated system to produce useful information that contribute in marketing decisions. The importance and significance of marketing information system can be analyzed by the quality of information that contribute to effective decision making, policies and managerial issues that influence to achieve the objectives and goals of firms. The marketing information system found to be influential in for information generation based on customers' demand and need to compete in market further it assist in development of current product and services for addition into new products, promotion and distribution in national or international markets with the increased use of marketing information system. The marketing decision can be defined as the personnel tools and procedures that assist in collection, categorization, analyzing, evaluation and distribution of information at required nodes for marketing decision making to achieve internal and external objectives of the firms. The research scholars have defined marketing information system as an organized structure of individual, methods of produce information through technological tools with reliable sources for taking decisions. The marketing information system is defined as collaboration of integrated computer system to produce reliable information to support administrative decision in problem solving and assisting in development of marketing strategies related to the product and services (Al-Janabi & Mhaibes, 2019).

There are various factors that depict the importance of marketing information system including that it provides the data and information to marketing managers that is critical in decision making, the information about customers, products and services and details of salesmen is recorded in the system for efficient working pattern, the most important factor is anticipation as on the base of previous information about different stakeholders the system generate the anticipated figures for sales increase of change in demand, it helps in reducing the time of decision making, the

availability of right information on right time significantly influence the decision making outcome, at the end one of the most important factors the monitoring becomes more obvious that increase the control of management over operational activities. The marketing information system consists of three different integrated functionalities.

## The Internal Records

The database is most critical and important requirement for effective marketing information system for internal usage, electronically linked stakeholders specifically customers as they seek information regarding markets, product or services among participants of the business including supportive industries. The database provides the updated information to marketing managers that highlight the available opportunities and address the problems related to marketing planning programs and performance to be achieved. The management of digital repository of market customers, internal record system extracts the data from internal environment of organizations. The internal database believed to be richest source of information required for mangers for effective decision making (Salvador & Ikeda, 2014).

## Marketing Research

The second function of marketing information system consists of marketing research that provides supportive information based on collection and analysis of data from external market while considering the external factors related to the market and customers. This section of the system focuses on collection and analysis of data to be used in strategic marketing planning. The market research depends upon six diverse stages including identification, formulation, hypothesis testing, and development of research plan based on data collection and analysis for strategic marketing planning and the sixth stage related to results and reports (Kotler, Bowen, Makens & Baloglu, 2017). The firms that lack with marketing research may not be able to produce appropriate information required for decision making to compete the competitors, to share information with suppliers; utilization of technology, participation in export market and various other problems arises with respect to management and marketing problems. For organizational success effective marketing research for data collection and appropriate analysis and reporting is necessary for being competitive in market. The marketing research assists in marketing mix forms including producer, distribution, promotion and pricing as major concern of marketing department which contributes in decision making on time with respect to market situation. The information gathered based on market research helps to modify the product or service according to the required parameters of the customers that ultimately satisfy the customers. The research scholars have defined marketing research in two distinct categorize including identification of problem which entails the research

of targeted market, pictures, properties of market, sales analysis, anticipation and direction of the business. The second category related to the problem solving involving cross sectional research, product or services research, pricing strategy, promotion and distribution (Al-Janabi & Mhaibes, 2019).

## The Marketing Intelligence

The marketing intelligence system relates to the collection of data from external environment for fulfilling the purpose of sustainability in terms of customers, competitors and other variables to influence the marketing activities. The marketing intelligence system has strategic importance in determining the environmental uncertainties and assessment of threats to the organizations. The supportive industries and firms provide environmental facilities, technical support, economical support, legislative issues and marketing related tasks and operations for information assessment about customers and competitors. The extraction of information from external market depends upon the available sources, understandability of events and actions, recognition of possible markets that suits organizational tendency. The sources are categorized in two aspects including marketing intelligence that depends upon external data and marketing intelligence that extract information from internal data. The external data sometime gets more attraction of research scholars and practitioners as compare to internal data, however internal data display more accurate information and readily availability from the internal database. The internal data can also be useable to predict the surrounding markets (Al-Janabi & Mhaibes, 2019). The figure 1 presents the model of Crowley that illustrates the system of marketing intelligence.



Figure 1: Marketing Information System by Crowley

## Framework of the study

The research framework of the study to determine the influence of marketing information system on marketing performance on STC is depicted below in figure (ii).
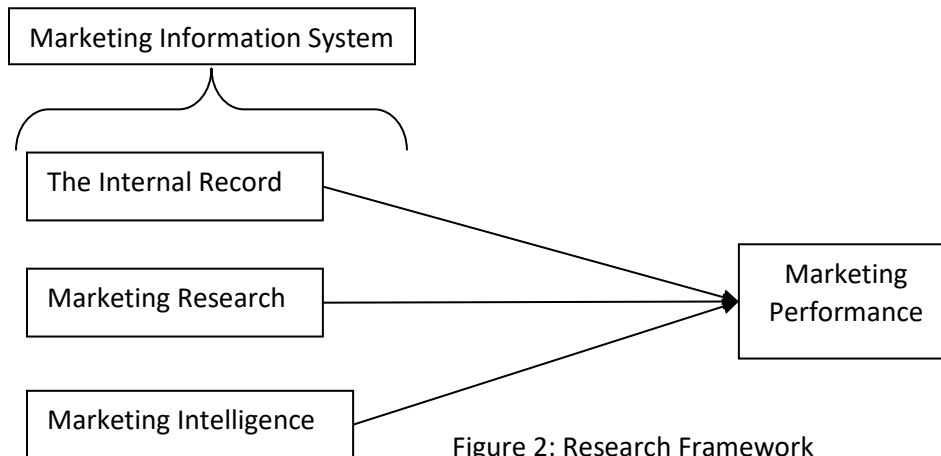


Figure 2: Research Framework

## Hypothesis Development

The above framework and discussion in literature review leads towards the following hypotheses of the study to be investigated.

**H1**: The Internal Record influence the Marketing Performance among STC

**H2**: The Marketing Research influence the Marketing Performance among STC

**H3**: The Marketing Intelligence influence the Marketing Performance among STC

## Research Methodology

The current study is quantitative in nature and fulfills the objective to determine the relationship between marketing information system and marketing performance among STC. There are number of branches of Saudi Communication Company in different areas and data was collected from different functional posts including general manager, deputy manager and director of department, in total 155 questionnaires were sent and 137 usable responses were received that shows 88% of response rate. The five point likert scale was used for data collection and measured the response of each item of questionnaire after basic demographic survey questions.

## Instrument development

The instrument was adopted for each variable from previous research studies, the independent variable marketing information system was evaluated on the base of three dimensions including the internal record, marketing research and marketing intelligence. The measurement scale of marketing performance consists of 4 items was adopted from the study of (Alsheikh, 2020). The marketing information system has three dimensions and was measured on the base of 09 items as three items for each dimension including internal record, marketing research and marketing intelligence as adopted from the study of (Al-Janabi & Mhaibes, 2019).

## Analysis and Results

This section of the study demonstrates the results and analysis of the collected data in determining the relationship between marketing information system and marketing performance. The analysis consists of two sections namely measurement model assessment and structural equation modeling and was conducted on Smart-PLS.

### *Measurement model assessment*

This section of study relates to the validity and reliability of the instrument based on the collected data. The measurement model was accomplished through PLS-algorithm method to assess the Cronbach alpha; composite reliability and average variance extracted for construct validity and reliability. The Cronbach alpha and composite reliability must remain higher than 0.70 for acceptable reliability of instrument. Moreover, the average variance extract (AVE) must remain higher than 0.50 as acceptable ranges (Hair Jr, Sarstedt, Hopkins & Kuppelwieser, 2014).

Table 1: Construct validity and reliability

|  | Cronbach's Alpha | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|
| IR | 0.937 | 0.960 | 0.888 |
| MI | 0.810 | 0.889 | 0.728 |
| MP | 0.846 | 0.897 | 0.685 |
| MR | 0.866 | 0.918 | 0.789 |

The above table 1 shows the construct validity and reliability based on Cronbach alpha, composite reliability and average variance extracted, the results show that Cronbach alpha and composite reliability for each construct found to be higher than 0.70 and observed for Internal record (IR) as 0.937 and 0.960 for Cronbach alpha and composite reliability respectively. Similarly, the

Marketing intelligence (MI) found to be 0.810 and 0.889 for Cronbach alpha and composite reliability, the Marketing performance (MP) the endogenous construct of the study observed as 0.846 and 0.897 for Cronbach alpha and composite reliability, the Marketing research observed as 0.866 for Cronbach alpha and 0.918 for composite reliability. All values found to be higher than cutoff point that depicted acceptable construct reliability and validity. The average variance extract shows the convergent validity and must remain higher than 0.50 for acceptability, the results show that AVE for IR, MI, MP and MR found to be 0.888, 0.728, 0.685 and 0.789 respectively and meet the requirement.

*Discriminant validity*

The discriminant validity is achieved through PLS-algorithm method in PLS that determine the multicollinarity between the constructs of framework. The discriminant validity is determined through the comparison between square roots of AVE of same construct that must remain higher than the correlation of other variables. The square root AVE is found on the intersection of table of the each construct and it must remain higher than the values of correlation with other variables (Fornell & Larcker, 1981). The table 2 presents the discriminant validity.

Table 2: Discriminant Validity

|     | IR    | MI    | MP    | MR    |
| --- | ----- | ----- | ----- | ----- |
| IR  | 0.942 |       |       |       |
| MI  | 0.436 | 0.854 |       |       |
| MP  | 0.458 | 0.408 | 0.828 |       |
| MR  | 0.324 | 0.402 | 0.304 | 0.888 |

The above table satisfies the discriminant validity and found no multicollinarity among the constructs of the framework.
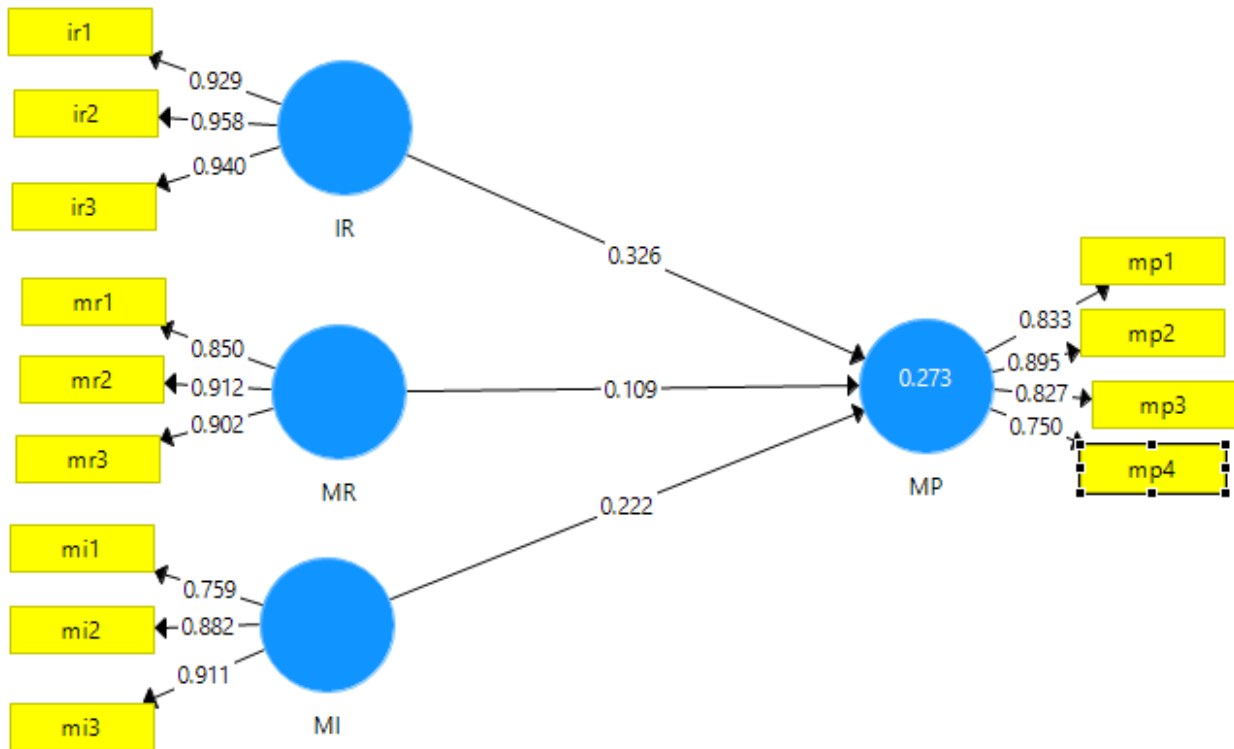
Figure 3: Measurement Model

## Structural equation Model (SEM)

This section of the study entails the second part of the analysis to assess the relationship and influence between exogenous constructs and the endogenous construct of the framework. The study has three hypothesis including H1 investigates the relationship between The Internal Record and Marketing performance, H2 investigates the relationship between Marketing Research and Marketing performance, H3 investigates the relationship between Marketing Intelligence and Marketing performance among Saudi STC. The SEM is executed through bootstrapping method of PLS that demonstrate the results in β and t-value with p-value to be achieved. For acceptable significant relationship can be justified with t-value must remain higher than 1.96 with 5% error margin (Hair Jr et al., 2014). The Figure 4 below shows the SEM model
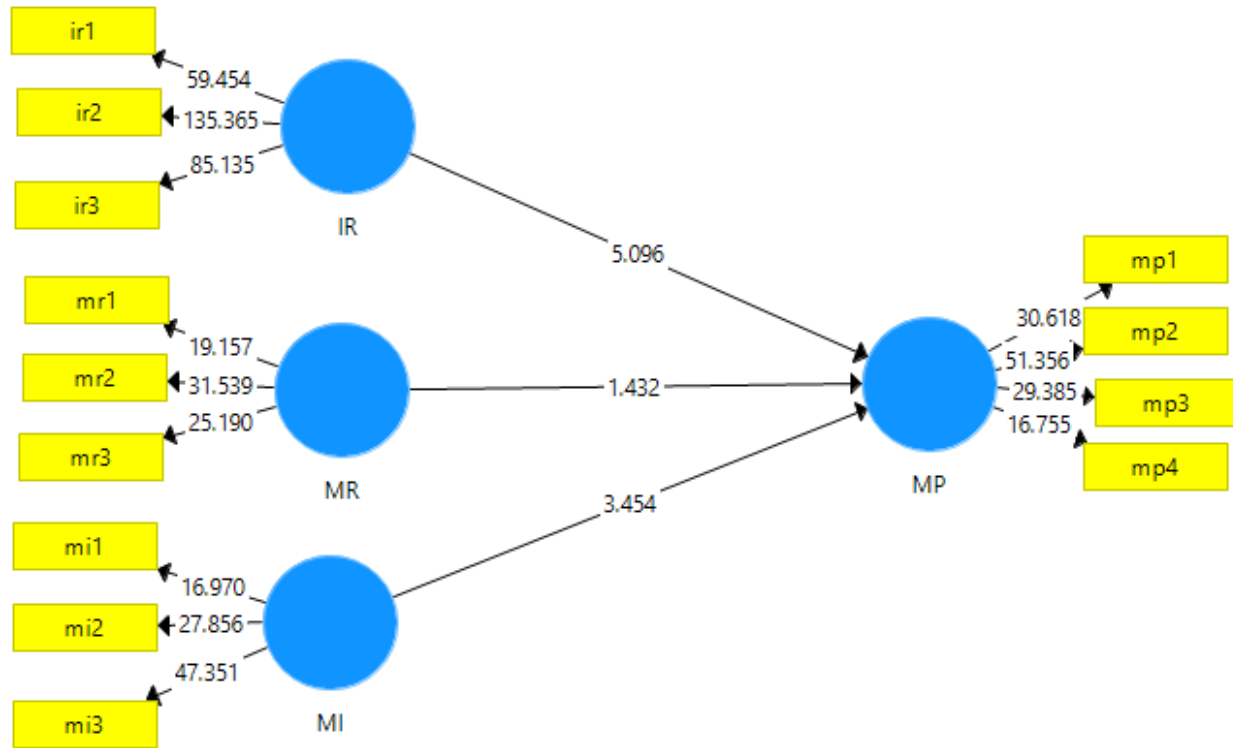
Figure 4: SEM

The table 3 demonstrates the results of hypotheses examined on collected data through bootstrapping method of PLS.

Table 3: hypothesis testing

|  | Original Sample (O) | T Statistics (|O/STDEV|) | P Values |
|---|---|---|---|
| IR -> MP | 0.326 | 5.096 | 0.000 |
| MI -> MP | 0.222 | 3.454 | 0.001 |
| MR -> MP | 0.109 | 1.432 | 0.153 |

The above results of hypotheses testing in table 3 depicted original sample ($\beta$), t-statistics and P-value, the first hypothesis H1 examined the relationship between The Internal Record of management information system and marketing performance, the results is evaluated on the base of ($\beta = 0.326$, t-value $= 5.096$, p-value $= 0.000$) and reported as significantly acceptable on statistical grounds. The t-value found to be higher than cutoff point that is 1.96 with 5% error margin as suggested in social sciences. So therefore, H1 is accepted statistically. The H2 examined the relationship between marketing research and marketing performance and the result was evaluated on given criteria such as by determining ($\beta = 0.109$, t-value $= 1.432$, p-value $= 0.153$)

and reported lower than cutoff point, so therefore H2 is rejected, that shows that marketing research in Saudi communication companies are not evident which is the most critical factor to be considered and act upon for successful marketing performance. The statistical rejection of hypothesis H2 raise must concerns for the communication operators in Saudi Arabia because marketing research enable firms to gain, collect, analyze data from external market including customers to upgrade or update or reconsider the strategies for marketing or product. The hypothesis H3 was examined on the base of ($\beta = 0.222$, t-value = 3.454, p-value = 0.001) that shows statistically significant result as it found to be satisfying all conditions for acceptable relationship. So therefore, H3 is statistical accepted.

**Recommendations and future research avenue**

 The Saudi communication companies are playing significantly important role in communication setup for developing marketing information systems to be implemented for information sharing among stakeholders, the STC have achieved remarkable achievements so far, and however there are major concerns of marketing research has been identified in the current study. The STC must be able to reshape their marketing research because this factor is not associated with marketing performance, which means there is clear lack in implementation of market research to assess the required need of customers and competitor or any other external information. The missing link of extracting information leads towards serious consequences towards loss of market share due to unmet needs of customers. The future study can be conducted with other variables such as environmental factors, political stability, international trade and tariffs and competitive positions to determine the marketing performance.

**Conclusion**

The current study determined the marketing performance of Saudi Communication Company based on the utilization of marketing information system. The study examined the relationship between dimensions of marketing information system namely The Internal Record, Marketing Research and Marketing Intelligence to determine the marketing performance. The study highlighted the role of latest technological equipment for information sharing among participants of the business to survive in highly competitive situation as readily available information plays significant role in decision making. The study utilized Smart-PLs for analysis and reported that the internal record and marketing intelligence have been present in STC but marketing research has missing link to marketing performance. That shows lack of marketing research capabilities of the STC that can influence the performance, the study recommend to upgrade and reconsider the marketing research approach for fruitful outcomes.

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