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Measuring the Actual Extent and Impact-factors of Penetrating Saudi-citizens Community via Facebook

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Abstract:

Both previous studies and PSP indicate the proportion increasing of active users via social media platforms to the total population of countries, which is called penetration. A research gap is noticed in previous studies about testing the validity of penetration rates, especially which has high foreign residents such as Saudi Arabia, in addition to the lack of in-depth studies exploring key factors of preferring among its original citizens. Therefore, current study aims to measure the actual extent and impact-factors of penetrating Saudi-citizens community by Facebook. This paper belongs to both quantitative and qualitative studies, in terms of its reliance on quantitative analysis in testing the accuracy of penetration estimates, beside the qualitative analysis of preferring factors among active users. The research community is represented in Saudi citizens only, because as nearly a third of the Saudi population are non-Saudis who use their accounts inside KSA, which may lead to inaccuracy of penetration. The research data were collected from random sample with a total of 846 participants included various categories of gender, age, and education. Followed methodology based on a random survey using an e-questionnaire that was published via open link after testing its validity and reliability. SPSS application was used to analyze collected data and test research hypotheses, which leaded to a set of results and recommendations that are expected to provide academics and practitioners with significant contributions, and proposed topics for future research.

Keyword: marketing, social media, Saudi Arabia, Facebook, penetration.

Used notations:

SM	: Social Media
SMPs	: Social Media Platforms
KSA	: Kingdom of Saudi Arabia
SCs	: Saudi Citizens
EPF	: Extent of Preferring Facebook
PSP	: Published Statistics of Penetration
DFs	: Differentiation Factors

1. Introduction:

Humans are rapidly turning to more communication, interactions, and transactions via the virtual world [1], exceeding 60% of the Earth's population [2] in several aspects of life through more than 4.5 billion active users [3]. Social media platforms SMPs are no longer just a modern tool for marketing but became one of its imperatives [4] [5]. Contemporary marketing depends on three main pillars, first one is its developed concept in a broad way, to include all aspects of human communication [6] [7], so that its major core can be described as the way that makes you and what you offer to be accepted by others [8]. This concept targets individuals [9]or governmental, profit, and charitable institutions [10] [11] [1]. The second pillar is the mandatory reliance on technological practices and Internet networking, in which SMPs play a pivotal role via them [5] [12]. Finally, the third pillar is the statistical dimension of contemporary marketing, where the key performance indicators KPIs have developed amazingly in evaluation, assessment, and improvement [13] [10]. Today's marketers obtain statistics from a variety of sources including official statistical institutions, specialized organizations in managing big-databases for profit or non-profit purposes, or through their own departments of marketing intelligence [14].

Today, the importance of SMPs is reflected on their impact, which makes the conflict over them one of the main priorities among the world's great powers [4], and at the forefront of this conflict is what is happening now between Chinese and American companies which operate

those platforms [11] [1].

Statista site is one of the most famous and important sources of publishing statistics about SMPs, which obtains data from the companies that operate those platforms directly and conducts its reports of statistical estimates. According to the most recent reports of Statista [15], there are 18 SMPs that are the top influential in the world, the following is (the global ranking/number of active users in millions) for each one of them in 2021: (Facebook: 1/2895, YouTube: 2/2291, WhatsApp: 3/2000, Instagram: 4/1393, Facebook Messenger: 5/1300, Weixin and WeChat: 6/1252, Tik Tok: 7/1000, Douyin: 8/600, QQ: 9/591, Sina Weibo: 10/566, Telegram: 11/550, Snapchat: 12/ 538, Kuaishou: 13/506, Pinterest: 14/454, Twitter: 15/463, Reddit: 16/430, and Quora: 17/300).

The well-known administrative rule in the field of systems says: "Wrong inputs lead to wrong results, and hence reliance on incorrect statistics inevitably leads to unwanted results" [4] [11]. The literature lacks focus on testing the validity and accuracy of many PSP, especially those raise many doubts around [13] [16]. One of these statistics which has various doubts is that published data about the numbers of active users via SMPs in KSA, especially Facebook [7]. Perhaps one of the most important reasons for questioning the PSP about Facebook in KSA, because it is considered the third country in hosting foreigners after USA and Russia, with around 12 million non-Saudis are residing in the Kingdom, that is 34% of its current population which exceeds 35 million [17]. Therefore, this paper aims to discuss and answer the following set of research questions:

RQ1: How actual and accurate are the PSP among Saudi-citizens community by Facebook?

RQ2: What are top factors influencing on Saudi users' preference while using SMPs?

RQ3: To what extent do Saudi citizens prefer the Facebook platform?

2. Literature review:

This section of the study is devoted to reviewing previous studies related to the research objectives and benefiting from them in building research hypotheses. It also includes three sub-sections: SMPs in KSA, demographic impacts, and impact-factors of preferring.

2.1 Statuses of SMPs in KSA:

KSA is one of the Group of Twenty G20, which includes 19 countries and the European Union, and works to address major issues of global economy [18]. So, for this reason and some other, it is placed among the most targeted countries by the global marketing of the multi-national companies [4], which rely mainly on two instruments: global statistics and SMPs [13]. Therefore, the companies operating these platforms are interested in showing the continuous increasing in numbers of active users to their services in high-income countries [19] [8], to maximize their revenue of advertising [5] [18]. The high percentage of non-Saudis among the population of KSA is not indicated by the PSP on the number of active users on SMPs, although it is more than 34%, and it is the third highest percentage in the world after USA and Russia, it is a percentage should not be ignored and marketers should take it into account When planning their online promotional campaigns. According to Statista (2021) [15], among the top 18 SMPs that are the most influential in the world, KSA has been listed among the 20 most used countries; Snapchat: 5th rank, 19.7 million active users (out of 538 million), Instagram: 20th rank, 15.6 million active users (out of 1.393 million), Twitter: it is ranked as the 8th globally with 14.2 million active users (out of 463 million), also it is ranked the 1st globally in the penetration rate among its population with 33%. Regarding to the Facebook platform, it is considered the highest rank in the world with around 2,895 million active users, although KSA is not ranked among the top 20 countries in the world, but the estimated number of its users in 2021 exceeded 15.82 million active users, an increase of 33.6% compared to 2017. Based on the referred statistics, the current study proposes the following research hypothesis:

H_1: There are significant difference between the PSP of active users via Facebook among Saudi citizens, and the actual numbers of them.

2.2 Demographic impacts:

Contemporary marketers follow demographic characteristics as main pillar to segment the market and build their plans of marketing mix, especially gender, age, and educational [14] [5] [20]. Previous literature discussed the average time of using the Internet, and areas of interest,

according to these demographic characteristics of users, and some of those studies indicated that there are fundamental differences between users according to gender [21] [20] [14], age [22], and education [23] [12]. Differences analysis according to gender do not mean discrimination, but rather are just logical differences between males and females due to the different characteristics of each. Some of these studies suggested that females are different than males in their usage extent on SMPs, in addition to differences in areas of interest. As for the differences due to age, many previous studies have discussed the differences in use that are due to the divisions of human generations [22] [3], which suggested an increase in the rates of youth use than the older ones, in addition to the different areas of interest of users as well according to age [24]. According to recently published global statistics [15], males are more likely to use Facebook than females, and the age group between 25-34 is also the most used than the youngest or the oldest [5]. In KSA the ration between the usage of Facebook by males and the females is four to one [22] [15]. Also, some previous studies suggested substantial differences between users according to their levels of education [12] [7]. Addressing the impact of demographic characteristics is more complex than it seems, especially since the data is analyzed for all these characteristics at the same time, resulting in several sub-sectors with an increase in each variable [4]. Therefore, current study proposes the following research hypotheses:

- H_2: There are significant differences among SCs in the extent of preferring Facebook according to gender.
- H_3: There are significant differences among SCs in the extent of preferring Facebook according to age.
- H_4: There are significant differences among SCs in the extent of preferring Facebook according to education.

2.3 DFs among SMPs:

Differentiation factors among SMPs is one of the research topics which has great interest from academics and practitioners in the field of marketing [13]. It discusses why individuals prefer or not a specific platform than the others? [25] [16] [11]. The reason for not using may be due to general reasons not to use any of the SMPs, and it may also be due to a lack of preference for

a particular platform [12].

Previous studies discussed several differentiation factors among SMPs, including trusted information, enjoyable, easy to use, building relations, privacy, keeping my data confidential, communications, useful, and users' interests [13] [4] [25] [16] [26]. Based on the indicated factors, current study proposes the following research hypotheses:

H_5: Differentiation factors among SMPs are affected by gender of Saudi citizens.

H_6: Differentiation factors among SMPs are affected by age of Saudi citizens.

H_7: Differentiation factors among SMPs are affected by education of Saudi citizens.

H_8: EPF among S Saudi citizens. is impacted by differentiation factors among SMPs.

3. Methodology:

This section of the current paper is devoted to explaining the followed scientific methodology in building the research instrument and the structure of research hypotheses, through two sub-sections: research instrument building, and data collection and sampling.

3.1 Research instrument building:

This study is based on a questionnaire about the opinions of Saudi citizens to identify the actual percentages of the number of active users on Facebook, the extent to which the research sample prefers Facebook, and to identify the extent to which other SMPs are preferred. The research tool included the following four main parts: The first part is for the demographic data of the participants: nationality, gender, age, education. The second part is to monitor actual statistics of owning accounts on SMPs and the extent of activity. The third part is to measure the extent to which the Facebook platform is preferred. The fourth part includes The proposed factors to study the extent of their impact on the differentiation among SMPs, the proposed list includes (trusted information, enjoyable, easy to use, creating new relations, privacy, data confidential, communications, useful, and users' interests). The validity of the questionnaire was evaluated by 9 specialists of 5 fields related to the research topic, and their recommendations and feedbacks were taken into consideration to improve the research instrument to be more valid. To ensure the clearness of phrasing of the questionnaire, it was discussed with 30 volunteers

from the research community. The final version of the questionnaire includes 15 items as follows: (4 items of demographic data, 1 item for the owned accounts via SMPs – built on drop list, 1 item to measure the overall extent of Facebook preferring – built on 5 Likert Scale, and 9 items to explore the differentiation factors among SMPs – built on 5 Likert Scale).

3.2 Data collecting and sampling

The community of this research is Saudi-citizens SCs via SMPs. Data were collected randomly and electronically through an open link during January and February 2021, with the participation of 846 SCs, as shown by table 1.

Table 1:
Sample Description

Characteristics	Item	Frequency (846)	Percentage
Gender	Female	364	43%
	Male	482	57%
Age	Younger than 20	68	8%
	20 – 40	533	63%
	Older than 40	245	29%
Education	Post-graduate	51	6%
	Under-graduate	609	72%
	Secondary or lower	186	22%

4. Results and discussion:

This section of the study presents the results of data analysis and hypotheses test, with comparing these results with the related findings of previous studies. It includes three sub-sections: confirmatory factor analysis CFA, hypotheses test results, and discussion.

4.1 Confirmatory Factor Analysis CFA:

Confirmatory Factor Analysis is used to ensure validity and reliability of the research instrument. Table 2 shows the extent to which items belong to factors, and the generalization ability of the research findings comparing with the recommended values. The measured values of α: Cronbach's alpha for all items together is .918, while its value to each item between .892 and .923 which confirm that the research instrument is high valid and reliable.

Table 2:
Confirmatory Factor Analysis CFA (DFs ~ SMPs).

Factors/items	Mean	SD*	Factor Loading	Confidence Interval on 95%	α*	AVE*	CR*
Factors of benefits:					.923	.875	.699
Useful	2.64	0.909	.853	2.58 ≤ x ≤ 2.70			
Enjoyable	2.44	1.146	.844	2.36 ≤ x ≤ 2.52			
Trusted information	2.73	1.119	.811	2.66 ≤ x ≤ 2.81			
Factors of using:					.892	.862	.677
Easy to use	2.39	1.141	.861	2.31 ≤ x ≤ 2.47			
Privacy	2.82	1.233	.859	2.74 ≤ x ≤ 2.90			
Data confidential	2.41	1.112	.742	2.34 ≤ x ≤ 2.49			
Factors of users:					.911	.856	.665
Users' interests	2.78	0.866	.867	2.72 ≤ x ≤ 2.84			
Creating new relations	3.54	1.112	.791	3.47 ≤ x ≤ 3.62			
Communications	3.60	1.048	.786	3.53 ≤ x ≤ 3.67			

(*) SD: Standard Deviation, α: Cronbach's alpha (recommended value ≥.7), AVE: Average Variance Extracted (recommended value ≥.5), and CR: Composite Reliability (recommended value ≥.7).

4.2 Hypotheses test results:

Table 3 shows the hypotheses test, and the supported and not supported hypotheses as follows:

Table 3
Hypotheses test results

Hypotheses	Path	Statistical test	Sig. results	Test results
H_1	EPF ↔ PSP	Z test	***	Supported
		Average	***	Supported
		Confidence Interval	***	Supported
H_2	Gender → EPF	Eta	Null	Not supported
		One-way ANOVA	Null	Not supported
H_3	Age → EPF	Kruskal-Wallis	***	Supported
		One-way ANOVA	***	Supported
		Pearson	***	Supported
H_4	Education → EPF	Kruskal-Wallis	**	Supported
		One-way ANOVA	**	Supported
		Pearson	**	Supported
H_5	Gender → DFs	Eta	Null	Not supported
		One-way ANOVA	Null	Not supported
H_6	Age → DFs	Kruskal-Wallis	***	Supported
		One-way ANOVA	***	Supported
		Pearson	***	Supported
H_7	Education → DFs	Kruskal-Wallis	**	Supported
		One-way ANOVA	**	Supported
		Pearson	**	Supported
H_8	DFs → EPF	Multi regression	***	Supported
		Pearson R= .647	***	Supported
		Adjusted R^3= .419	***	Supported

(**): significant, P< 0.01, (***): significant, P< 0.001.
EPF: Extent of Preferring Facebook, DFs: Differentiation Factors.

4.3 Discussion:

Figure 1 shows the differences between the results of research sample and the PSP percentages of SMPs in KSA. The significant variation between actual data collected through research sample and the published statistics is very clear from the graph. One of the most expected explaining of these differences is the Facebook's policy that obligates users to create an account on the platform when they want to see the posts that they receive through other communication platforms such as WhatsApp.

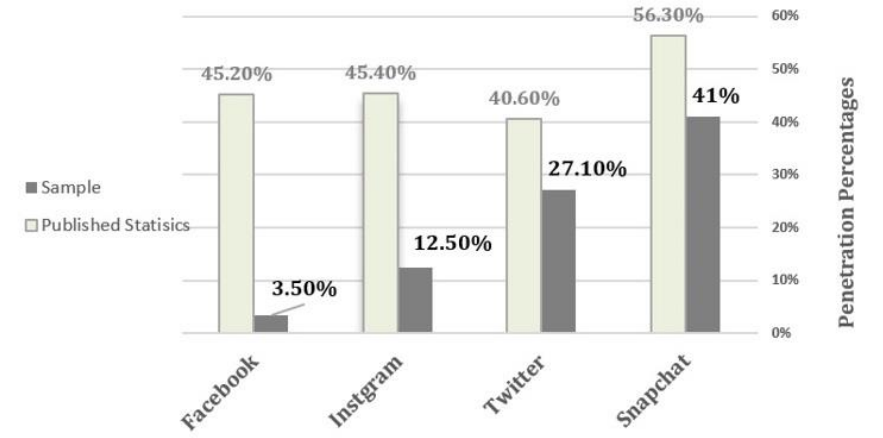

Figure 1: Actual statistics of SMPs in KSA according to the research sample in 2021

In addition, the percentage of the increase in active or newly created Facebook accounts often concerns non-Saudi residents. In KSA, the ratio of males to females is approximately equal among Saudi citizens [17], while the percentage of non-Saudis residing in KSA reaches 70% of males, while the percentage of females is only 30%, and therefore the total percentage of males in the Kingdom is about 57%, compared to 43% for all females. Considering the differences between males and females in the use of SMPs and areas of interest, in addition to the expected differences between Saudis and non-Saudis, it is necessary to analyze these differences when referring to the statistics of the use of communication platforms among the general residents of KSA. In 2014, there was announced that the rate of Facebook penetration in KSA reached 80%, this percentage is decreasing since that year [15]. Therefore, the estimated increase rates through the Statista or Facebook are decreasing rates. However, any PSP needs to be reviewed after considering the results of this study.

Since among the 12 non-Saudi residents in the Kingdom, there are large numbers came from countries are considered among the top 20 in using Facebook (as shown by table 4), and that is logically affects the indicators of active users inside KSA. The findings of current study about the actual statistics of penetrating Saudi-citizens community by Facebook are completely disagree with the related published statistics [15] [27], because of all these explanations, and it strongly agrees with the findings of remeasuring which were proposed by some other previous studies [13] [25] [6] [16].

Furthermore, the previous explanations of current study clear why it does not support the significant differences between Saudi males and females in their Extent of Preferring Facebook EPF, and that finding agree with the results of some other previous studies [7] [1] [16] with additional contributions are represented in the presented explanations, but it does not consistent with some findings of some other studies [14] [28] [29] [21]. Regarding to the significant impact of age and education level, this study is consistent with many other previous studies [23] [5] [16] [28] [7] [30], but it contributes Appling on KSA and a set of marketing suggestions in this context through the promotional campaigns. Referring to the impact factors of penetrating Saudi-citizens community by Facebook, current study provides a major contribution is represented in a list of 9 factors. This finding is not only marketers in KSA, but also it may help academics and practitioners who interest in social media penetration in general. It adds to the credit of the previous studies which focused on exploring these impact factors [5] [25] [26] [12].

Table 4
Data of active users via Facebook in selected countries which have large numbers of residents in KSA

Countries	Global Rank	Active users (in millions)
India	1	349.2
Indonesia	3	142.5
Philippine	6	90.5
Bangladesh	9	48
Egypt	10	47.8
Pakistan	11	46.9

Source: [3]

5. Conclusion and recommendations:

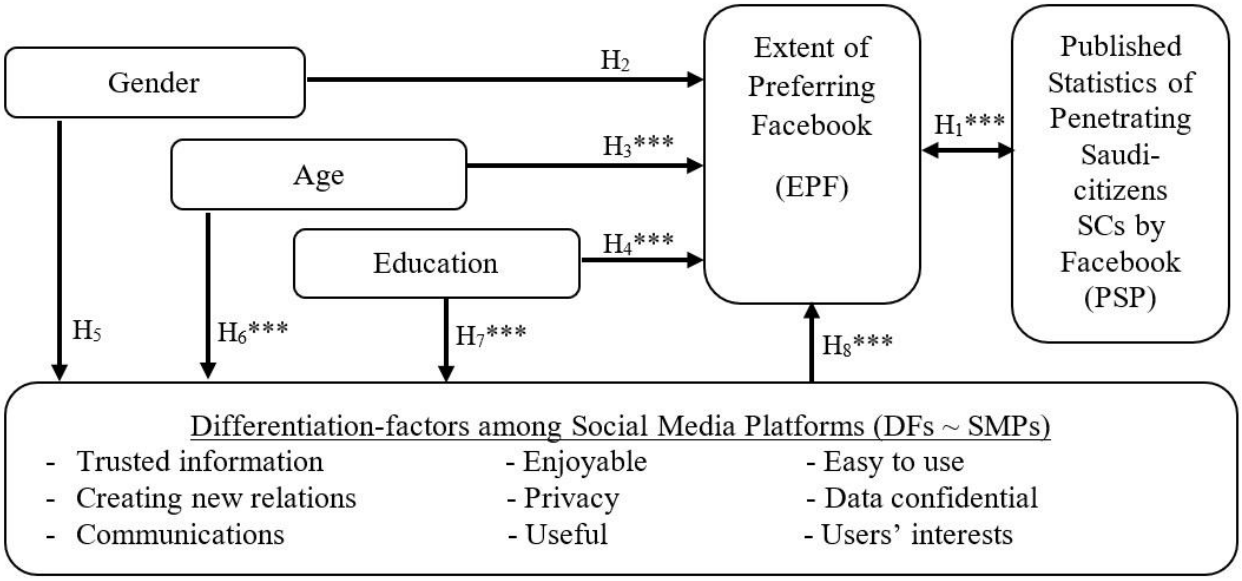

Figure 2: Hypotheses structure

The major contributions of this study are represented in answering its research questions and achieving the objectives of study, which are summarized in figure 2. Current paper provides academics and practitioners in the field of marketing with the following conclusions and appropriate recommendations:

5.1 The published statistics via Facebook in KSA do not accurately reflect the reality of the rates of Facebook usage by Saudi citizens. Therefore, the study strongly recommends reviewing these statistics on social media platforms in general, especially via Facebook, and that should be by using scientific and methodological methods to ensure their accuracy and reflection of the actual reality.

5.2 The results of the study indicate to the decreasing of the extent to which Saudi citizens prefer Facebook comparing with other SMPs. Therefore, the study suggests the following social media platforms instead of Facebook when targeting Saudi citizens, in the following order: Snapchat, Instagram, and Twitter. However, Facebook can be relied upon when targeting the non-Saudi residents' sector.

5.3 The results of the study indicate that there are no significant differences between males and females of Saudi citizens in the extent of preferencing Facebook, as the results of the sample indicate weak degrees of preference in general. Therefore, the study strongly recommends not to use Facebook when targeting the sector of Saudi citizens in general and recommends not to use it in promotional programs that target one gender but may be used in general programs where gender differences do not affect their marketing effectiveness.

5.4 The results of the study indicate significant differences among Saudi citizens in the extent of their preference for Facebook, according to their ages, and the degrees of preference range between weak-medium. Where the results of the sample indicate that the highest preference is the age group from 20 to 40, then the age group greater than 40, while the lowest group was the youngest of 20 years. Therefore, the study recommends that the use of Facebook may be appropriate to a moderate degree when targeting the middle age group, and to a lesser degree than the average when targeting the older group, while the study does not strongly recommend using it at all when targeting the group less than 20 years old.

5.5 The results of analyzing the opinions of the participants in the sample indicate that the extent to which Facebook prefers Saudi citizens with different levels of education is between weak and medium, as the highest category of preference is the university students, followed by the lowest from university, while the lowest category is the higher than university education category. Therefore, the study recommends strongly after using Facebook when targeting the higher category of university, and to a moderate degree when targeting the university category, and to a lesser than average degree when targeting the lower category of university education.

Future Research:

The current paper contributes to opening a wide field for many future studies that test the validity and accuracy of PSP of all SMPs in different countries of the world. The study also provides to the list of impact factors in differentiating among SMPs, which can be built upon through future research to be generalized on a larger scale.

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