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Research Article

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The Influence of Psychological Factors on Health Protective Behaviours in Private Healthcare: Digital Marketing Engagement in the Context of the SDGs

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Abstract

The study investigates the relationship between self-efficacy, consumer innovativeness, and social media engagement in promoting health-protective behaviours within the private healthcare sector. Consumer innovativeness, defined as an individual's tendency to adopt new technologies, may influence their engagement with social media for health and wellness. Grounded in the health-protective behaviour framework, this research examines how self-efficacy, mediated by consumer innovativeness, impacts social media engagement. A quantitative study was conducted through a questionnaire survey with 400 local and international respondents residing in the Klang Valley and utilizing private healthcare services. Responses were measured using a 5-point Likert scale. Findings revealed a significant positive relationship between self-efficacy, consumer innovativeness, social media engagement, and health-protective behaviours. Consumer innovativeness partially mediated the relationship between self-efficacy and health-protective behaviours, accounting for 43.11% of the variance. The study concludes that self-efficacy enhances social media engagement through consumer innovativeness in private healthcare settings. It recommends that healthcare providers leverage psychological factors to refine digital media marketing strategies and improve engagement. Future research may explore additional socio-psychological variables, such as integrating responsible AI principles into social media marketing, to enhance digital health engagement.

Keywords: United Nations, Sustainable Development Goals (SDGs), Consumer Engagement, Digital Marketing Engagement, Health Protective Behaviours, Social Media Marketing

1. Introduction

Today, social media engagement in private healthcare improves consumer engagement by acquiring and analysing customer data to understand their behaviours better [1-6]. In addition, customer information can be obtained in both quantitative and qualitative feedback from social media engagement. As a result, social media engagement may help corporate companies connect with various segments; provide useful health and wellness information that facilitate engagement with customers [7]. The number of Followers, Likes, Shares, and Comments on social media by corporate companies (Unlike other platforms), demonstrates the extent of social media engagement. In addition, these are extremely useful criteria for determining the level of participation and the quality of services provided [5]. Additionally, social media can engage with customers to its actual location. The check-in function also allows customers locate themselves to corporate companies through Geo-tagging technology equipped with smart phones. Likewise, dealing with social media engagement, particularly effective contents may difficult [6]. For example, customers engage with healthcare providers via social media during COVID-19 pandemic to look for more updates and advice [1-4,6,8].

In addition, Canadian provincial healthcare engages consistently and effectively with public through live videos during the COVID-19 pandemic [6,8]. In fact, it provides real-time engagement especially for people who do not view news on TV or other channels [6]. Social media has become a phenomenon for disseminating health-specific information [9]. Twitter is the preferred platform for 583 hospitals, while Facebook is the second most popular platform used by 551 hospitals. Additionally, 348

hospitals utilize YouTube to share their medical videos. Wikipedia is classified as the eighth most accessed website globally, featuring articles on various medical topics [9]. Hence, the following research questions were developed in this research.

1. What are the psychological factors that influence health protective behaviours in private healthcare through social media adoption?
2. What is the role of consumer innovativeness in the relationship between health protective behaviours and the psychological factor in private healthcare through social media adoption?

1.1. Research Objectives

In line with the research objectives, the following research objectives are formulated in this research:

1. Analyse the influence of psychological factor on health protective behaviours by investigating the relationship between self-efficacy and health protective behaviours.
2. Analyse the role of consumer innovativeness in the relationship between health protective behaviours and psychological factor.

1.2. Theoretical Framework

The Relationship between Self-Efficacy (SE) and Social Media Engagement. This research adopts Self-Efficacy (SE) of the social cognitive theory to explore social media engagement in private healthcare [10]. Self-Efficacy (SE) has been commonly adopted as one of the variables in assessing various behaviours and skills. In addition, Self-Efficacy (SE) highlights that customer behaviour is developed and measured by individual cognition in a social situation [8,10]. In other words, Self-Efficacy (SE) highlights individual's role that affects their behaviours [2,8,11]. Individuals are self-reactors with their own direction, performers, and knowers, according to Bandura's "Social Foundations of Thought & Action". In the Theory of Cognitive Dissonance, Perceived Self-Efficacy (SE) is very essential [10]. In addition, the elements of Self-Efficacy (SE) deal with Self-Efficacy (SE) beliefs, functions, effects, and processes [2,10]. Self-Efficacy (SE) is described by Bandura as an individual's belief in their ability to perform specific tasks well [11]. That is to say, Self-Efficacy (SE) is similar like Perceived Capability [10]. In addition, it is an individual's estimation and capability to complete their jobs [11]. Bandura asserted that Self-Efficacy (SE) affects their behaviours, the higher the efficacious of jobs given, the higher chances they will perform the jobs [10,12]. On the other hand, individuals will not engage in a job if they believe that the job fails at the end. Self-Efficacy (SE) has directly influenced customer behaviour [10]. Customers who believe they are unable to connect with social media engagement in private healthcare for example, may not engage with it [2,8,12]. Stajkovic, asserted that individuals who have high level of confidence more potentially to act on it and do it persistently. Likewise, they are more confident in handling what they intent to do and what to do next. In addition, this has been proven especially describing new technology skills. For example, new and fast pace technologies through social media have changed the social media engagement. In addition, Alfons Karl et. al., had discovered that there is relevance of raising Self-Efficacy (SE) to persuade people to take further action in stopping new viruses from spreading [8].

The Relationship between Consumer Innovativeness (CI) and Social Media Engagement. Schumpeter is the creator of the innovation. Innovation is defined as an impact of change in technology. It achieves by joining new and current features in solving a business issue. Schumpeter revealed that the process of innovation begins with ideas and then progresses into a feasible product and service which will thereafter changes the customer behaviour. In addition, Twiss, defines innovation as a process that joins economics, science and technology and business management together for the consumption of market and production. Likewise, Afuah, defines innovation as a combination of new ideas into work processes, products and services. Schumpeter list-down five classifications of innovation. For example, a new aspect of a product and service which benefits customers is known as "Fresh Innovation" is the first classification. Secondly, innovation adopted in an existing popular product and service that penetrating new markets. Thirdly, innovation adopted in current markets. Corporates reorganise and monopolise markets by adopting innovation in their product and service. Fourthly, innovation adopted in new production materials or half completed products. Lastly, innovation totally adopted in new markets which is irrelevant to technological research. Likewise, Consumer Innovativeness (CI) is critical for both literature and corporates business. Consumer Innovativeness (CI) quickens innovative behaviour, which drives innovation adoption and diffusion [13,14]. Furthermore, according to the current approach in consumer behaviour discipline, determining Consumer Innovativeness (CI) is a critical stage to ensure that a product or service meets the appropriate needs [15,16]. Likewise, Consumer Innovativeness (CI) is a psychological state that can provide reliable insight into a tendency to pursue goals, such as the intention to adopt new goods and services [17,18].

The Relationship between Consumer Innovativeness (CI) and Health Protective Behaviours (HPB). Consumer Innovativeness (CI) is a psychological state that can provide reliable insight into a tendency to pursue goals, such as the intention to adopt new goods and services [17,18]. In addition, it was found that there are fewer researchers conducted research on Consumer Innovativeness (CI) and Health Protective Behaviours (HPB). Consumer Innovativeness (CI) had been defined as an intention to engage with new products and services instead of using the same old usage patterns and attitude. For Innovators (customers), they engage with new products at an early stage. In addition, they play an important role in innovation aspects. Hence, they are being called as Innate Innovativeness (II). Both Innovators and Early Adopters have behaviour characters that vary from both Late Majority and Laggards. Innovators enjoy serving as a source of information about new developments. Likewise, they communicate with their peers via social media engagement. In addition, collectively they play the role of opinion leaders in disseminating new ideas and methods. Technological innovation also produces technological opinion leaders [13]. Creativity and innovation trends in social media engagement tend stimulate customers' interest. Corporates

identify new opportunity by focusing on these trends of social media engagement [19]. In addition, over two-third of digital advertisements on social media engagement in corporates have become more vital since Consumer Innovativeness (CI) has been improved through desktop and mobile. For example, New Feeds feature of Facebook linked together with Instagram posts to optimise engagement of social media [19]. Likewise, customers engage with social media in corporate companies such as Facebook and Instagram to look for health and wellness information, desired doctors and also urgent enquiries on treatment. In addition, social media engagement allows corporates and doctors engage with new and existing customers. Social media engagement in corporates is transforming with new technology. It improves social media engagement and provides opportunity for corporates to engage with their customers. Corporates get cost effective leads by boosting Consumer Innovativeness (CI) through social media engagement.

2. Research Methodology

2.1. Research Methods

Quantitative research had been conducted on 400 respondents, both local and foreign respondents from private healthcare, which residing in Klang Valley. Due to the impact of COVID-19 pandemic issues, a Non-Probability Sampling had been adopted by the researcher. In this research, purposive sampling had been adopted, whereby the researcher used selected and subjective sampling when selecting samples in surveys.

2.2. Research Instruments

Google Form had been used to distribute survey questionnaires among respondents. A survey form link had been sent out to private healthcare customers directly and disseminating through The Management of private healthcare, insurance agents, Third Party Administrators (TPAs), insurance agencies, insurance companies, General Practitioners (GPs), Medical Officers (MO), specialist clinics, private clinics, private healthcare customers, patients, pharmacy, COVID-19 vaccinees and other private healthcare providers. Likewise, the researcher uses 5-Point Likert Scale to gather response on how strongly the respondents agree with the statements mentioned in the questionnaires. Five Point-Likert Scale was developed in 1932 by Rensis Likert to assess attitudes of respondents. Normally, there are five or seven scales used by respondents to provide their answers the scale to which they agree or disagree with a question. Five Point-Likert Scale is also a kind of psychometric feedback measurement. Respondents give their level of answer to a question in five points, which are (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; and (5) Strongly agree (SpringerLink, 2020). In addition, both Social Sciences Statistical Software (SPSS) and PLS-SEM had been used to test reliability and validity for this research. Finally, the researcher had included the investigation plan and also the ethical consideration related with the study. Previous researchers had validated the items such as Bonsaksen et. al., and Guang Zeng et. al, through the same General Self-Efficacy (GSE) scale, which had been used in epistemological studies to explain human behaviours [20].

The items are listed as follows:

1. I can always manage to solve difficult health and wellness problems through social media in private healthcare if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want through social media in private healthcare.
3. It is easy for me to stick to my aims and accomplish my goals through social media in private healthcare.
4. I am confident that I could deal efficiently with unexpected health and wellness events through social media in private healthcare.
5. Thanks to my resourcefulness, I know how to handle unforeseen health and wellness situations through social media in private healthcare.
6. I can solve most health and wellness problems if I invest the necessary effort through social media in private healthcare.
7. I can remain calm when facing health and wellness difficulties because I can rely on my coping abilities through social media in private healthcare.
8. When I am confronted with a health and wellness problem, I can usually find several solutions through social media in private healthcare.
9. If I am in health and wellness trouble, I can usually think of a solution through social media in private healthcare.
10. I can usually handle whatever comes my way on health and wellness through social media in private healthcare.

The researcher had adopted all six (6) items in total. The Consumer Innovativeness (CI) is established to assess the extent to which a customer is an innovator in a particular product arena [21]. The items are listed as follows:

1. 1The design of new trends on social media is attractive to me.
2. Using new trends of social media would provide a novel experience.
3. I feel more important when using new trends on social media.
4. I like to follow global trends rather than sticking to traditions.
5. Using new trends of social media would improve my image.
6. People think positively of me when I use a new trend of social media.

Health Protective Behaviours (HPB) had been originally adopted from Norazryana et al [22]. The researcher had adopted all nine (9) items in total. The Health Protective Behaviours (HPB) is developed to measure the health protecting elements of lifestyles and changes of Health Protective Behaviors (HPB) in adults [23].

The items are listed as follows:

1. I consider opinion from social media in private healthcare while selecting information related to health and wellness.
2. I feel social media in private healthcare is a good source to get information on health and wellness preventive measures.
3. I can change my opinion about health and wellness based on updates reported in social media in private healthcare.
4. Social media in private healthcare plays an important role in educating me about the procedures to follow in the event of outbreak of disease.

5. Social media in private healthcare play an important role in increasing my knowledge of general preventive behaviors to control the infection.
6. Social media in private healthcare play an important role in spreading awareness of health and wellness in the community.
7. Social media in private healthcare play an important role in educating people on how to protect others if they are ill.
8. Social media in private healthcare play an important role in decreasing fear, anxiety, and confusion about health and wellness among people.
9. I trust in what is posted on social media in private healthcare related to health and wellness.

3. Results and Discussion

The outcome of the data analysis is distributed into four (4) parts.

- **Part 1:** Demographic profile of respondents associated with information such as nationality, gender, marital status, age, family monthly income, education level, social media tools use the most for health and wellness purposes, how often to use social media for health and wellness purposes, when to use social media for health and wellness purposes normally, and main reasons for using social media in health and wellness. Table 1 shows the important information about the respondents' profile.

Characteristic	Description	Frequency	Valid Percent	Cumulative Percent
a. Are They Private Healthcare Customer?	Yes	400	100	100
	No	0	0	100
Total		**400**	**100**	n/a
b. Nationality	Malaysian	358	89.5	89.5
	Indian	20	5.0	94.5
	Indonesian	15	3.75	98.25
	Vietnamese	2	0.5	98.75
	Others	5	1.25	100
Total		**400**	**100**	n/a
c. Gender	Male	159	39.8	39.8
	Female	241	60.3	100
Total		**400**	**100**	n/a
d. Marital Status	Married	255	63.8	63.8
	Single	140	35.0	98.8
	Widowed	3	0.8	99.5
	Divorced/Separate	2	0.5	100
Total		**400**	**100**	n/a
e. Age	Less than 25 years old	127	31.8	31.8
	25 to 34 years old	56	14.0	45.8
	35 to 44 years old	140	35.0	80.8
	45 to 54 years old	58	14.5	95.3
	55 to 64 years old	18	4.5	99.8
	More than 65 years old	1	0.3	100
Total		**400**	**100**	n/a
f. Family Monthly Income	Less than RM 5,000	76	19.0	19.0
	RM 5,001 to RM 10,000	181	45.3	64.3
	RM 10,001 to RM 20,000	106	26.5	90.8
	More than RM 20,000	37	9.3	100
Total		**400**	**100**	n/a
g. Education Level	High school or below	43	10.8	10.8
	Certificate or Diploma	110	27.5	38.3
	Bachelor's Degree	132	33.0	71.3
	Postgraduate education	29	7.3	78.5
	Professional certificate	86	21.5	100
Total		**400**	**100**	n/a

h. Occupation	Student	12	3.0	3.0
	Administrative/clerk	64	16.0	19.0
	Managerial level	57	14.3	33.3
	Professional	145	36.3	69.5
	Businessman	117	29.3	98.8
	Retiree	1	0.3	99.0
	Without occupation	4	1.0	100
Total		**400**	**100**	n/a

Table 1: Demographics of Respondents

Table 2 shows the Social Media Engagement, Patterns and Behaviours of the Respondents in Private Healthcare.

Characteristic	Description	Frequency	Valid Percent	Cumulative Percent
i. Social Media Platform Used the Most for Health and Wellness Purposes (Can Choose Up to 3).	Twitter	98	n/a	n/a
	Facebook	387	n/a	n/a
	Instagram	371	n/a	n/a
	Whatsapp	400	n/a	n/a
	Snapchat	0	n/a	n/a
	Telegram	85	n/a	n/a
	TikTok	355	n/a	n/a
	YouTube	368	n/a	n/a
	LindkedIn	95	n/a	n/a
	WeChat	106	n/a	n/a
	Others	0	n/a	n/a
j. Frequency of Using Social Media for Health and Wellness Purpose.	Daily	397	99.3	99.3
	Once a week.	0	0	99.3
	2 to 3 times a week.	0	0	99.3
	More than 4 times a week.	3	0.08	100
Total		**400**	**100**	n/a
k. Moment of Accessing Social Media Platform for Health and Wellness Purpose.	During free time.	387	96.8	96.8
	Whilst at school / work.	0	0	0
	During emergency occasions.	0	0	0
	Meal times.	0	0	0
	Any spare moment.	13	3.3	100
Total		**400**	**100**	n/a
l. Main reasons for Using Social Media in Health and Wellness (Can Choose Up to 3).	Increase the knowledge on disease.	400	n/a	n/a
	Express my emotions and feelings.	25	n/a	n/a
	Share my experience on disease and its treatment.	59	n/a	n/a
	Getting advice and support from doctors and health and wellness professionals.	199	n/a	n/a
	Find answers for additional and forgotten questions.	350	n/a	n/a
	Help other people in the health and wellness matters.	9	n/a	n/a
	Buy and sell health and wellness product and service.	224	n/a	n/a
	Read and share reviews.	17	n/a	n/a

	Others	0	n/a	n/a

Table 2: Social Media Engagement, Patterns and Behaviours of the Respondents in Private Healthcare

- **Part 2:** Data investigation deals with the research instrument such as Normality, Validity and Reliability. In the other words, all the Structural Equation Modelling (SEM) assumption are being confirmed to make sure all the circumstances of proceeding with SEM are being fulfilled. The Average Variance Extracted (AVE) measures the level of variance captured by a construct versus the level due to measurement error, values above 0.7 are considered very good, whereas the level of 0.5 is acceptable. For convergent validity, the Average Variance Extracted (AVE) is higher and more than 0.5 such as Self-Efficacy (SE) 0.691, Consumer Innovativeness (CI) 0.931, and Health Protective Behaviours (HPB) 0.967. Table 3 below shows the "Convergent Validity" and "Reliability" of the reflective measurement models.

Key Construct	Items	Loadings	Cronbach's Alpha	Composite Reliability	"rho_A"	AVE
Self-Efficacy (SE)	SE1	0.862	0.952	0.960	0.963	0.706
	SE2	0.872				
	SE3	0.852				
	SE4	0.860				
	SE5	0.803				
	SE6	0.845				
	SE7	0.837				
	SE8	0.847				
	SE9	0.833				
	SE10	0.576				
Consumer Innovativeness (CI)	CI1	0.839	0.910	0.931	0.911	0.692
	CI2	0.833				
	CI3	0.709				
	CI4	0.801				
	CI5	0.688				
	CI6	0.831				
Health Protective Behaviours (HPB)	HPB1	0.867	0.961	0.967	0.962	0.764
	HPB2	0.855				
	HPB3	0.854				
	HPB4	0.849				
	HPB5	0.834				
	HPB6	0.844				
	HPB7	0.853				
	HPB8	0.854				
	HPB9	0.826				

Table 3: The "Convergent Validity" and "Reliability" of Reflective Measurement Models

- **Part 3:** Analyse the causal impact of Self-Efficacy (SI) and Consumer Innovativeness (CI) on Health Protective Behaviours (HPB) by using SEM via Smart-PLS 3.0. In addition, path coefficient had been assessed to evaluate the hypothesized relationships between constructs in a study. The coefficients of the significant path, t-values, and standard error are assessed through bootstrapping procedure. The bootstrapping technique ensures that measures are calculated better. This is done by repetitively calculating re-samples of 5,000 and cases using bootstrapping. The 5,000 bootstrapping samples used are to ensure that a proxy is given to the distribution of the empirical standard error of the model. The path coefficients were determined using t-statistics from the bootstrapping standard error procedure. The result of direct effect is as follows. Table 4 below shows the direct effect of variables.

Main Construct	Original Sample (O)	T Statistics (|*O / STDEV*|)	*p*-value
Self-Efficacy (SE) -> Health Protective Behaviors' (HPB)	0.138	3.489	0.000
Consumer Innovativeness (CI) -> Health Protective Behaviors (HPB)	0.131	2.335	0.019
Self-Efficacy (SE) -> Consumer Innovativeness (CI)	0.273	5.905	0.000

Table 4: The Direct Effect of Variables

In this research analysis, one of the key constructs in the research construct is determining the effect of Self-Efficacy (SE) construct on Health Protective Behaviours (HPB). In terms of Self-Efficacy (SE), the path coefficient (beta-coefficient) is positive 0.138 (p = 0.000, t = 3.489), suggesting that Self Efficacy (SE) has a positive and high significant effect on Health Protective Behaviours (HPB) as both t-values and p-values satisfy the threshold values (p-value is less than 0.05 and t-values is higher than 1.96. This mean when Self Efficacy (SE) rises by 1 unit, it will increase Health Protective Behaviours (HPB) by 0.138 units. This shows that Self-Efficacy (SE) has a significant effect on Health Protective Behaviours (HPB). In sum, Self-Efficacy (SE) has a positive and high significant effect on Health Protective Behaviours (HPB). In terms of Consumer Innovativeness (CI), it has positive and significant direct effects on Health Protective Behaviours (HPB). This means Consumer Innovativeness (CI) has a positive and significant effect on Health Protective Behaviours (HPB) with a β-coefficient of 0.131 (p-value = 0.019, t-value = 2.335), as the β-coefficients are associated with p-values which are less than 0.05 and t-values which are higher than 1.96 suggesting Consumer Innovativeness (CI) has significant effects on the Health Protective Behaviours (HPB). This means by increasing 1 unit of Consumer Innovativeness (CI), it will cause to increase Health Protective Behaviours (HPB) by 0.131 units. This shows that Consumer Innovativeness (CI) has a significant effect on Health Protective Behaviours (HPB). In sum, Consumer Innovativeness (CI) has positive and significant direct effects on Health Protective Behaviours (HPB). Likewise, in terms of Self-Efficacy (SE), it has positive and significant direct effects on Consumer Innovativeness (CI). This means Self-Efficacy (SE) has a positive and significant effect on Consumer Innovativeness (CI) with a β-coefficient of 0.273 (p-value = 0.000, t-value = 5.905), as the β-coefficients are associated with p-values which are less than 0.05 and t-values which are higher than 1.96 suggesting Self-Efficacy (SE) has high significant effects on the Consumer Innovativeness (CI). This means by increasing 1 unit of Self-Efficacy (SE), it will cause to increase Consumer Innovativeness (CI) by 0.273 units. This shows that Self-Efficacy (SE) has a significant effect on Consumer Innovativeness (CI). In sum, Self-Efficacy (SE) has a positive and significant effect on Consumer Innovativeness (CI).

- **Part 4:** The last section of the data assessment deals with the "Mediating Effect" of the Consumer Innovativeness (CI) on the connection between Self-Efficacy (SI) and Health Protective Behaviours (HPB). Table 5 below shows the mediating effect of Consumer Innovativeness (CI) on the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB).

Mediation Effect	Original Sample (O)	T Statistics (|*O / STDEV*|)	*p*-value	Direct Effect	VAF	Mediation Type
Self-Efficacy (SE) -> Consumer Innovativeness (CI) -> Health Protective Behaviours (HPB)	0.036	1.992	0.020	0.036	43.11%	Partial Mediation

Table 5: The Mediation Effect of Specific Indirect Effect

Based on the Table 5 above, in terms of the mediating effect of Consumer Innovativeness (CI) on the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB), it has a positive and significant mediating effects as the p-value is less than 0.05 (p-value = 0.020) and t-value that is higher than 1.96 (t-value = 1.992). Besides that, Self-Efficacy (SE) and Consumer Innovativeness (CI) have positive and significant indirect effects on Health Protective Behaviours (HPB) with a VAF of 43.11%. In another words, this means that Consumer Innovativeness (CI) has partial mediating effects on the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB). This is because VAF falls between 20% and 80%.

4. Conclusion

The relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB) of the customers through social media engagement in private healthcare. The current literature presented had been assessed and reviewed so as to establish the relation between Self-Efficacy (SE) and Health Protective Behaviours (HPB). Likewise, the existing research had been concluded and confirmed that by improving Self-Efficacy (SE) in social media engagement, it enhances engagement among customers [2,8]. In addition, social media has become a necessary component today. Social media posts made by corporate companies are used as reliable sources of information and have a big impact on how stakeholders, such as potential customers and future customers think about the corporate company [12]. For example, the

capacity of employees to discuss about their job on social media has emerged as a competitive advantage for both employees and their companies, particularly in the professional services industry [12]. Therefore, comprehending the social media engagement for professional usage of these social media is essential [12]. Hence, it is concluded that when private healthcare develops their knowledge of Self-Efficacy (SE), it will enable them to increase social media engagement through social media in private healthcare sector. In terms of Self-Efficacy (SE), based on the past researchers, it is concluded that by enhancing Self-Efficacy (SE) of social media, it will increase social media engagement [2,8,12,24,25]. In addition, the path coefficient analysis (beta-coefficient) for Self-Efficacy (SE) is positive 0.138 (p=0.000, t=3.489). According to findings, when Self Efficacy (SE) increases by one unit, Health Protective Behaviours (HPB) increases by 0.138 units. Likewise, this demonstrates that Self-Efficacy (SE) has an impact on Health Protective Behaviours (HPB). In sum, it is concluded that Self-Efficacy (SE) improves Health Protective Behaviours (HPB) and social media engagement through social media among the private healthcare.

The relationship between Consumer Innovativeness (CI) and Health Protective Behaviours (HPB) of the customers through social media engagement in private healthcare. The existing research had been concluded and confirmed that by improving Consumer Innovativeness (CI) in social media engagement, it enhances Health Protective Behaviours (HPB) and customer engagement among customers. In addition, past researchers revealed that a risk-taker who is willing to do activities differently, the ability to handle multiple ideas concurrently, offering different perspectives on old problems, the ability to find solutions when challenged, standing out in disagreement with a group, being able to inspire and motivate others, and drawing energy from frequent change are all characteristics of a customer with high Consumer Innovativeness (CI). In addition, these characteristics may entice a customer to pursue an engagement in the development of new technological ventures [26]. Likewise, Consumer Innovativeness (CI) is critical for both literature and private healthcare business. Consumer Innovativeness (CI) increase the speed of innovative behaviour, which drives innovation adoption and diffusion [13,27]. Furthermore, according to the current approach in consumer behaviour discipline, determining Consumer Innovativeness (CI) is a critical stage to ensure that a product or service meets the appropriate needs [15]. In addition, Consumer Innovativeness (CI) is a psychological state that may provide reliable insight into a tendency to pursue goals, such as the intention to adopt new goods and services [17,18]. Creativity and innovation trends in social media tend to stimulate customers' interest. Therefore, private healthcare identifies new opportunity by focusing on these trends of social media engagement [19]. Over two-third (>2/3) of digital advertisements on social media in private healthcare have become more vital since Consumer Innovativeness (CI) has been improved through both desktop and mobile. In addition, psychology elements have a significant influence on consumer adoption of innovation, with Consumer Innovativeness acting as a Mediating Variable (MV) [28]. Likewise, Consumer Innovativeness (CI) has a positive and significant effect on Health Protective Behaviours (HPB) with a -coefficient of 0.131 (p-value=0.019, t-value=2.335). According to findings, it suggested that by increasing one unit of Consumer Innovativeness (CI), it results in a 0.131 unit rise in Health Protective Behaviours (HPB). In sum, it is concluded that Consumer Innovativeness (CI) improves Health Protective Behaviours (HPB) and social media engagement through social media among the private healthcare.

The relationship between Self-Efficacy (SE) and Consumer Innovativeness (CI) of the customers through social media engagement in private healthcare. The current literature presented had been assessed and reviewed in order to establish the relation between Self-Efficacy (SE) and Consumer Innovativeness (CI). The existing research had been concluded and confirmed that by improving Self-Efficacy (SE) in social media engagement, it enhances Consumer Innovativeness (CI) of the customers through social media in private healthcare. Likewise, Consumer Innovativeness (CI), according to Goldsmith and Hofacker, is the behaviour of innovativeness that includes the tendency to obtain the most recent information or the adoption of new products by consumers towards product classes, certain categories, or specific domains [21]. In addition, Consumer Innovativeness (CI) tends to be concentrated in a single product category. For example, in the category of fashion products, cellular phones, social media platforms and other categories. Gilles Roehrich's research, as described in previous studies, demonstrates that there is a significant influence between psychological and Consumer Innovativeness (CI). In addition, according to Midgley and Dowling's research, there is a significant influence between psychological and Consumer Innovativeness (CI) [28]. Likewise, past researchers asserted that Self-Efficacy (SE) has a direct and significant effect on Consumer Innovativeness (CI). In addition, it shows that engineering students who have a strong belief and Self-Efficacy (SE) in their academic abilities are more likely to engage in technoparanoia actions. Hence, it can be used as a predictor. This finding is aligned with this research that addressed the formation of Consumer Innovativeness (CI) among customers through social media engagement [26,29]. In other words, the research recommended that customers who receive technical education and possess strong academic of Self-Efficacy (SE) may be more likely to progress with technopreneurial intentions. Likewise, the research also recommends that customers who exhibit high innate of Consumer Innovativeness (CI) may create intentions to start a new technology-based venture. In addition, the research investigated the effect of academic Self-Efficacy (SE) and Innate Innovativeness (II) on technopreneurial Self-Efficacy (SE) [26,29]. In addition, Self-Efficacy (SE) has a positive and significant effect on Consumer Innovativeness (CI) with a coefficient of 0.273 (p-value=0.000, t-value=5.905). According to findings, it suggests that by increasing one unit of Self-Efficacy (SE), it results in a 0.273 unit increase in Consumer Innovativeness (CI). In sum, it is concluded that Self Efficacy (SE) improves social media engagement through Consumer Innovativeness (CI) on social media engagement among the private healthcare.

The relationship between Consumer Innovativeness (CI), Self-Efficacy (SE) and Health Protective Behaviours (HPB) of the customers through social media engagement in private healthcare. The current literature presented had been assessed and reviewed in order to establish the mediating effect of Consumer Innovativeness (CI) on the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB) of the customers through social media in private healthcare. In addition, it had been concluded and confirmed that there is a significant relationship between Consumer Innovativeness (CI), Self-Efficacy (SE) and Health Protective Behaviours (HPB) of the customers through social media in private healthcare. Consumer Innovativeness (CI), according to Goldsmith and Hofacker, is the behaviour of Consumer Innovativeness (CI) that includes the tendency to obtain the most recent information or the adoption of new products by consumers towards product classes (certain categories) or specific domains [21]. Likewise, Consumer Innovativeness (CI) tends to be concentrated in a single product category. For example, in the category of fashion products, cellular phones, social media etc. Gilles Roehrich's research, as described in previous studies, demonstrates that there is a significant influence between psychological elements and Consumer Innovativeness (CI). In addition, according to Midgley and Dowling's research, there is also a significant influence between psychological and consumer innovativeness [28]. According to Deng and Liu, when a person's health Self-Efficacy (SE) is high, their proclivity to engage in Health Protective Behaviours (HPB) increases. In addition, other researchers had revealed that customers who earlier look for health information through social media felt that their Self-Efficacy (SE) improved and that they went on to look for health and wellness information. Furthermore, Eriksson-Backa et al, discovered that customers with high health and wellness Self-Efficacy are more vigorous in looking for health and wellness information [2]. Likewise, ever since the investigation of the existing research sustained the theoretic propositions, it is determined that Consumer Innovativeness (CI) enables to mediate the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB) of the customers through social media in private healthcare. In addition, the existing research confirmed that by improving Consumer Innovativeness (CI) in social media engagement, it enhances both Self-Efficacy (SE) and Health Protective Behaviours (HPB) on customer engagement. With a Variance Accounted For (VAF) of 43.11 percent, Self-Efficacy (SE) and Consumer Innovativeness (CI) have positive and significant indirect effects on Health Protective Behaviours (HPB). Therefore, according to findings, it shows that Consumer Innovativeness (CI) has partial mediating effects on the relationship between Self-Efficacy (SE) and Health Protective Behaviours (HPB), since Variance Accounted For (VAF) ranges from 20% to 80% [30,31].

Recommendations

The research recommends private healthcare providers to establish and cultivate Self-Efficacy (SE) to improve social media engagement in private healthcare. In alignment with the research findings, it had been confirmed that Self-Efficacy (SE) is a main aspect that significantly improves social media engagement, it is very imperative to establish and cultivate Self-Efficacy (SE) through social media among the private healthcare. Likewise, this is because it has a direct effect on social media engagement effectiveness through social media platforms in private healthcare. For example, private healthcare to develop and refine strategies, brainstorm and execute unique ideas, and present results on performance, all while staying on top of current digital media marketing trends. On top of that, they need to review and approve influencer videos to ensure content alignment with brand standards, mission, and values before engaging with their customers. Likewise, they need to actively shape and execute digital content and brand storytelling initiatives. By doing this, they may collaborate with influencers, photographers and videographers to ensure a successful video shooting or photo taking to include final recap. In overall, the findings indicate that customers with higher levels of social media Self-Efficacy (SE) are more likely to rely on and trust social media. Likewise, be it to validate the trustworthiness of information they look on social media or as a platform to seek and share healthcare information with their family members and friends. In addition, it is recommended to develop and cultivate Consumer Innovativeness (CI) to improve Health Protective Behaviours (HPB) through social media engagement in private healthcare. It had been confirmed that Consumer Innovativeness (CI) is a main aspect that significantly improves Health Protective Behaviours (HPB) and social media engagement. In other words, it is very imperative to establish and cultivate Consumer Innovativeness (CI) through social media among the private healthcare. This is because it has a direct effect on social media engagement effectiveness through social media in private healthcare. Likewise, it is important to know what customers wants and needs. In addition, it appears to be prominent, and it is based on how customers behave on social media that they are looking for more social media engagement.

Limitation and Future Research

It had been identified that there are some limitations in related to the research, even though there are establishments on Validity and Reliability of the instrument. The researcher points out some limitations of the general theoretical background, research design, the retrieved data set as well as of the data analysis. In addition, this facilitates a better understanding of the framework in which this research takes place and how to evaluate the results based on it. Moreover, the researcher outlined some directions for future research that may be derived from research, results and limitations. In general, the research is broad in scope, which opens several avenues for more specific research and leads to the following key directions on which to focus. The research's main flaw is its lack of comprehensiveness, not only in terms of the respondents' location. Further research in this area may be required to cover a large geographic area, further demographics and also new socio-psychological variables related to social media engagement with the purpose of getting greater insights on the relationships that have been studied. In addition, the sample size of the research was restricted to customers of corporate companies residing in Klang Valley. Therefore, research findings may not be comprehensive across all private healthcare industry. Moreover, the research had done for all social media platforms in general. Likewise,

the researcher did not focus on specific social media platforms. Therefore, future researcher may study deeper in this area into the social media engagement rate by customers who engage with social media in private healthcare. In addition, social media engagement strategies and its relationships may be investigated according to the level of social media engagement and their attitude and behaviour towards private healthcare. In sum, in order to encourage private healthcare to practise full adoption of the social media engagement strategy, future researchers may come out with a scale or test social media engagement applicability across private healthcare industries.

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