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# Web-based marketing communication to develop brand image and brand equity of higher educational institutions

Web-based  
marketing  
communication

## A structural equation modelling approach

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### Abstract

**Purpose** – Internet-based marketing communication has been an important element for organizations to build brand image and brand equity. Higher education is not an exception. However, configuring the right mix in the age of social networking sites and various online displays and constantly changing algorithm in search engine optimization have become major challenges today. Hence, the purpose of this study is to configure integrated online marketing communication for the development of brand image and brand equity for higher educational institutions.

**Design/methodology/approach** – The study is quantitative in nature. A responsive group of 370 students was chosen from different educational institutions in Malaysia via stratified random sampling techniques. Both exploratory and confirmatory factor analyses were used for interpreting the data. To test the derived hypotheses, structural equation modelling was used.

**Findings** – In line with contemporary literature, the study revealed positive relationships between brand image and brand equity, between search engine and brand image and between social media and brand image. The relationship between online display and brand image was not found significant.

**Research limitations/implications** – Future research can be done considering both online and conventional marketing communications for the same purpose. This approach can also be used for private and public institutions separately, considering their differences in nature.

**Practical implications** – Because history and tradition are no more a single tool to attain and retain the positive image and customer-based brand equity, this study can help higher educational institutions to configure integrated online communication for their target groups, such as students and industry, in the age of the internet.

**Originality/value** – This study generates a comprehensive understanding of the impact of Web-based marketing communication to develop brand image and brand equity of higher educational institutions.

**Keywords** Marketing strategy, Communication, Brand image, Education, Brand equity, World Wide Web, Web-based marketing

**Paper type** Research paper



## 1. Introduction

Despite its early involvement with traditional consumer goods only, branding has currently grown to become a core part of services and non-profit organizations as well. Taking its distinct features (intangibility, variability, inseparability, for instance) into consideration, it is argued that brand image can play a crucial role for any service industry in building strong brand equity (Endo *et al.*, 2018). A review of the literature suggests that similar to other service organizations, higher education institutions are also heading toward brand-building activities to ensure their long term superior position over competitors. History and tradition are no longer the sole reasons to attain and retain the positive image and customer-based brand equity. Hence, use of marketing communication tools in a comprehensive manner is an indispensable strategy for every marketer (Seric, 2017). Many of these institutions adopt various promotional tools such as advertising, public relations, online communication and direct marketing to create their respective distinct images. While many studies focus on the use of conventional communication for this purpose, a comprehensive review of the literature does not show a strong presence of strategic coordination of Internet-based marketing communication in creating a brand image of higher education service toward overall consumer brand equity. Malaysia also aspires to become one of the best educational service providers in the world ([www.moe.com](http://www.moe.com)). It is to be noted that positive brand equity is a fundamental indicator that shows the effectiveness of each used communication tool (Raji *et al.*, 2018). Before the use of each marketing communication technique, one needs to confirm its projected value.

Sustainability and competitiveness are two major issues amongst the communities of Malaysian education sector. HE sector of Malaysia consists of more than 50 universities and 20 university colleges, 400 plus private colleges and eight foreign branch campuses. All these institutions are competing for the same group of local and regional students. In addition, every year a significant portion of these students plan to pursue their study abroad. For instance, outbound count expands to just fewer than 65,000 students by 2015 (Carter and Yeo, 2016). Apart from attracting new students, hence, retention of these outbound students becomes priority for Malaysian government (Singh and Jack, 2018). The number of Internet users from various age groups is fundamentally expanding in Malaysia. For instance, it is seen in a research that, 77.2 per cent of daily users of the Internet in Malaysia are from the age ranged in 16-24 years (Mostly college and university students group), trailed by 66.6 per cent from the age section of 35-44 years. This specific data plainly means the significance of web communication and the job they play in influencing individuals to pick various products and services (Jan and Ammari, 2016). Higher education is no exception. Similar to other part of the world, Malaysian students are taking most of their decisions including courses and institution selection on the basis of their online exposure and experience (Ayub *et al.*, 2014; Nixon *et al.*, 2018).

However, configuring the right mix in the age of social networking sites, various online displays and constantly changing algorithms in search engine optimization (SEO) has become a significant challenge today. Hence, the purpose of this study is to configure integrated online marketing communication toward the development of brand image and brand equity for higher educational institutions.

## 2. Literature review

In the following sections literatures on brand equity and brand image about online marketing communication are cited to formulate the hypotheses to be tested in the subsequent sections.

*2.1 Integrated marketing communication, brand image and brand equity*

Developing strong brand equity is the ultimate goal of all marketing and branding activities. Positive brand equity denotes customer loyalty and their active engagement with the brand. In addition, creating community feeling in favor of the brand in the mind of the customer is also a crucial issue for a better brand. On the other hand, a favorable brand image represents customers' positive perception toward a brand (Foroudi et al., 2017).

Managing a strong brand requires the understanding of creating an offer and communicating its value to the target customers. To practically convey this value, a coordinated and strategic approach is required which would eventually lead to best results with the allocation of limited communication resources. To create and develop a strong brand image, integrated marketing communication (IMC) has been promoted as a promising communication philosophy. That is, alternatively, also treated as a strategic management process (Ramanathan et al., 2017). Academicians have conducted several studies where it has been observed that IMC had a positive impact on the brand image in particular and brand equity in general. A case study of Dewhirst and Davis (2005) suggests that an IMC process deals with strategic brand communication, consistently merges cross-functional planning, monitoring and finally practices the data-driven communication. More so, targeting is good enough to create a competitive perceived brand image which can maximize the stakeholders' value. The use of IMC changed the position of a market while the overall communication collapsed without integrating the communication tools (Endo et al., 2019). Because many studies are conducted on the relationship between traditional marketing communication and brand image and brand equity, this study finds its unique niche to figure out the relationships from an Internet-based marketing communication perspective.

*2.2 Online marketing communication and higher education branding*

In recent history, online communication is considered more efficient than traditional media in many respects. It helps to contain and enhance market share for an organization. It is also used as a more effective determinant of communication success (Besseah et al., 2017). Hence it is necessary to use the right mix of promotion or integrated marketing communication approach, particularly with the young respondents (Duffy, 2009). Based on its inherent

KMO and Bartlett's test

Kaiser–Meyer–Olkin measure of sampling adequacy		0.879
Bartlett's test of sphericity	Approx. chi-square	871.526
	df	55
	Sig.	0.000

**Table 1.**  
KMO and Bartlett's test

Relationship		Estimate	S.E.	C.R.	P	Label
Brand_Image	<— Social_Media	0.499	0.174	2.864	0.004	Significant
Brand_Image	<— Search_Engine	0.499	0.147	3.399	***	Significant
Brand_Image	<— Online_Display	-0.270	0.267	-1.010	0.312	Not Significant
Brand_Equity	<— Brand_Image	0.455	0.111	4.106	***	Significant
Brand_Equity	<— Social_Media	0.079	0.177	0.446	0.656	Not Significant
Brand_Equity	<— Search_Engine	-0.115	0.150	-0.767	0.443	Not Significant
Brand_Equity	<— Online_Display	0.367	0.257	1.426	0.154	Not Significant

**Table II.**  
Standardized estimation of the main model

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nature, online communication is quite different from traditional communication. These differences are primarily formed in two ways: first in terms of measurability and second in terms of targeting criteria (Brettel and Spilker-attig, 2010).

It is found that the attitude towards online communication is different from the attitude of consumers towards traditional communication. Hassan *et al.* (2010) suggest that entertainment, information seeking, value creation, credibility, and usefulness for the economy are the primary antecedents of attitude in approaching online communication. The relationships among the constituent antecedents such as information and entertainment are perceptual while a strategic coherence between online and traditional media is necessary for a comprehensive IMC program (Foroudi *et al.*, 2017).

The emergence of online communication such as social media makes the brand building program more strategic for higher education (HE) service, as most of the students nowadays portray their mental map regarding these institutions from their online communication experiences. Such experiences also include email marketing and SEO (Raji *et al.*, 2018).

Amongst all the available communication techniques, the website of the respective organization, email marketing, and different types of online media have been used for so long till now (Jan and Ammari, 2016) while the use of social media and SEO techniques have emerged as essential techniques for all organization including higher educational institutions (Haque *et al.*, 2013). After giving a snapshot of the use of an integrated online marketing environment, the study will now discuss each of the available online communication tools for higher learning institutions.

With the number of evolutionary trends in diverse marketing areas, the emergence and development of online IMC have been recognized (Brettel and Spilker-attig, 2010). For instance, increased number of market fragmentation and segmentation, the growing use of direct and relationship marketing, massive use and acceptance of information technology with new sorts of media and database application, and diversification of media channels make the plan and use of integrated marketing communication (IMC) quite strategic.

Hence, it can be said that IMC has been shaped into the new paradigm to give a strategic solution to the changing business and social phenomena through different types of online media (Foroudi *et al.*, 2017). Considering all these issues related to the importance of online marketing in term of overall IMC approach, it is taken as the independent construct to measure the influence of online marketing on brand image and brand equity of HE institutions.

*2.2.1 Social media and higher education branding.* Social media has made a breakthrough in connecting people in real time that other media could not. Stakeholders and, more importantly, potential students are expected more than ever to access university news and updates to interact in real time (Lilley *et al.*, 2012). Social media or social networking sites come into the picture here. Interaction with different constituencies such as prospective and current students, alumni, staff, and faculties are now aware of the existing image of higher learning institutions due to social networking sites such as Facebook and Twitter (Foroudi *et al.*, 2017).

With a social networking account, institutions can announce an event and get feedback at the same time (Seric, 2017). Providing the information or content that the followers want, social networking account can “act”, for example giving “status” or “tweet” about interesting deals, rallying points about the campus, events, news of interest or anything that the followers may be attached with (Chan, 2011). Also, in the case, if the communication officer or brand manager does not know what the followers like, they can ask them what they actually like since social media is an informal platform for interaction.

Once the account responds to the comments by giving, for instance, updates or acknowledges to their views, “interact” comes into place. Even a small interaction between the community and social media accounts can strengthen the image and loyalty towards the higher learning institution in building a sense of pride in the followers’ minds (Hawkins *et al.*, 2011). Through the day-to-day interaction, the followers not only stay informed regarding events that is happening, but a social media account can also equally drive an audience to a university’s main website via the links posted on their social media accounts (Ramanathan *et al.*, 2017).

One of the most attractive features of social networking sites is to display the multiple columns of content in a single shot. This eventually allows the surfers to open many columns related to desired searches (Jan and Ammari, 2016). In other words, it works as a time alert that shows frequency and nature of the searched items such as school name (in full or abbreviation), university fees, news section, administrative policy, etc. that allows the university authorities to know the real picture and sentiments of the stakeholders, including the potential students.

For many businesses such as banks, chain restaurants, and other corporate entities, social media has become a commonplace of interaction with the customers. They usually appoint or outsource a social marketing expert to follow the community on social media and manage the flow of interaction to reflect a positive image in the minds of the followers (Booth and Matic, 2011). For instance, if a customer of a restaurant experienced terrible service, Facebook or Twitter account of that restaurant may allow the owner to be informed so that he/she can take the initiative to solve the grievance. HE institutions are not different from it as they also provide service (Harris and Rae, 2009).

Approaching consumers or community through social networking sites have become a trend nowadays. The young generation, in particular, expects to get real-time feedback to their queries. Though all the Twitter or Facebook inquiries may not deserve a response or the operators may not have the opportunity to entertain, giving simple or generic responses may defuse the hostile feelings of the followers (Seric, 2017). This, in turn, may eventually create positive word-of-mouth, which leads to the buzz marketing of an institution’s positive image in the minds of current and prospective students (Sweeney *et al.*, 2012).

Thinking of social media accounts as a community may give the right cue to understand its functions. In the past, there was hardly a place, either in physical form or virtual world, where the prospective and existing students, staff, or alumni could come together on a single platform. With social networking lists, followers of the account can easily be listed most conveniently. Social media gives the comfort to create specific groups or the list for different kinds of constituents. Besides the existence of a broader community, social media provides a platform to trace a specific follower (Jan and Ammari, 2016).

*2.2.2 Different types of online displays for brand image and brand equity.* Different types of online displays are also common in the web-based communication of higher education (HE) services. It comprises but not limited to banner ads (including pop-up and text ads), search advertising and blog or micro-blogging options (Rauschnabel *et al.*, 2016). In creating primary perception or image and informing the community, institutions in HE use banner advertising with a short message with or without audio and video substances (Rios and Riquelme, 2010).

To create awareness among the different stakeholders pop up advertisement plays a crucial role. However, many stakeholders are reluctant to use it due to a lower click-through rate (Carter and Yeo, 2016). Higher education falls into the same domain. In contrast, many institutions use text display advertisement to interact with the stakeholders. Because most of the ads blocking software comply with it, it becomes popular among the online

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communication strategists (Rutter *et al.*, 2016). Also, it takes a lesser loading time and has an impact on search engine optimization (Rauschnabel *et al.*, 2016).

The blog is the most common platform of interaction for ordinary people including students. They used to build perception by accessing the given information in these platforms and also not dare to post anything that comes to their mind (Foroudi *et al.*, 2017). In HE, instead of following the official websites of the institutions, many stakeholders including students build their perception and post their queries in the respective educational blogs and different content hubs including YouTube, Flickr and Metaphor. Institutions display their achievement and other benchmarked materials in these platforms to create a positive perception and develop strong equity in the hearts of the target group (Rutter *et al.*, 2016).

*2.2.3 Search engine promotion towards the brand image and equity.* Product or service promotion that displays an output of a search engine result is called as search advertising. In recent times, the “search engine” is treated as the principal instrument to optimize the number of web visitors (Bolat and O’Sullivan, 2017). To do so, organizations use search engine optimization (SEO) strategies to rank their names on top of the searched pages.

One of the most essential tools in building online traffic is the use of SEO. It is a technique used to maximize the number of users that are usually searching a web destination through keywords, typically in a search engine, portal, or a directory. “Search engine” promotion is not similar to “paid advertising”. Against every keyword searched by the web surfers all search engines such as Yahoo, Google and Bing have their distinct search result to display (Jan and Ammari, 2016). For instance, if a potential student searches a business school with specific search words such as the best business school in Malaysia, Google has its algorithm to display the resultant links. SEO techniques inspire the school marketing division to take steps to emerge in the top of these lists. This is because the users are interested in top down approach and search the first few links only (Ramanathan *et al.*, 2017).

It is essential to attract the information seekers particularly at the beginning stage, SEO technique. It is a skilled job and requires an expert webmaster who is familiar with the available tactics to optimize the “search engine” listings (Jan and Ammari, 2016). It is argued that every marketer, regardless of its nature, should indeed be familiar with the search engines and their optimization techniques to increase site traffic and to build strong brand familiarity (Endo *et al.*, 2019).

“Search engine” marketing consists of both marketing and technical application and requires a high level of efficiency to increase site traffic. Among all the available techniques, the “search engine” is treated as the primary tool in seeking information online (Bhandari and Bansal, 2018). The “search engine” is a very useful tool mainly to drive specific customers to specific brands of choice. For instance, Hassan (2010) observed that more than eighty percent online surfers use it as their primary medium to search for information.

With almost every matter, most of the web users begin with a web search, meaning that surfers utilize a search engine to start their cyber journey. Though it is relatively a new practice, the search engine brings the best result for a brand than any other form of promotion and advertising tool in providing the highest return on investment (ROI) as well as the lowest cost per acquisition (CPA). Hence, SEO techniques are adopted by almost all the brands including most of the higher learning institutions (Bhandari and Bansal, 2018).

*2.2.3.1 Submitting to search engine.* In the beginning, it was allowed to just cut and paste web links of all the related website pages to a search engine interface and then the spider counted it for automated indexing (Jan and Ammari, 2016). However, due to undue spamming with the submission of thousands of duplicated pages, almost every search

engine mainly Google, Yahoo and Bing always keep changing their indexing algorithms (Dai and Davison, 2011). Now, search engines rely on the links from other related webpages available in their index (Ramanathan *et al.*, 2017).

Therefore, to be rated at the top, organizations (higher learning institutions) need to make sure that their links are available in the sites which are already indexed with many others. While there are many search engines available, only few of them are well liked. Google is the most popular search engine in the web portal today followed by Bing and Yahoo (Bhandari and Bansal, 2018).

Based on the above arguments and a review of the related literatures, the study reveals the relationships of different types of web-based marketing communication with brand image and brand equity of higher educational institutions. Web-based communications are categorized broadly as social networking sites, different types of online displays and search engine related communication tools. As stated earlier, social networking sites has immense impact on students' life style and choice. They love to share their views in social media and intimidate other on their activities (Jan and Ammari, 2016). Literature suggests it also happens for the matured students to decide on any issue regarding their education. In addition, Online displays such as banner ads, pop up ads in many different platforms help students to get aware of many offers and taking decision (Rutter *et al.*, 2016). Last but not the least, search engines remain important for being on the top of the customer decision. Hence, educational institutions are not reluctant also to use optimization techniques to be on the top of the key search result (Bhandari and Bansal, 2018). The rest of the relationships that the study originates are mostly about the mediating effect of brand image between independent variables (social media, online displays and search engine optimization) and brand equity as dependent variable. These mediations are predicted on the basis of brand equity models. Most of the equity models derive the positive relationship between brand image and brand equity (Raji *et al.*, 2018) (Figure 1).

The above discussion has led to the derivation of the following hypothesis:

- H1. Social media has a positive effect on brand image.
- H2. Online display has a positive effect on brand image.

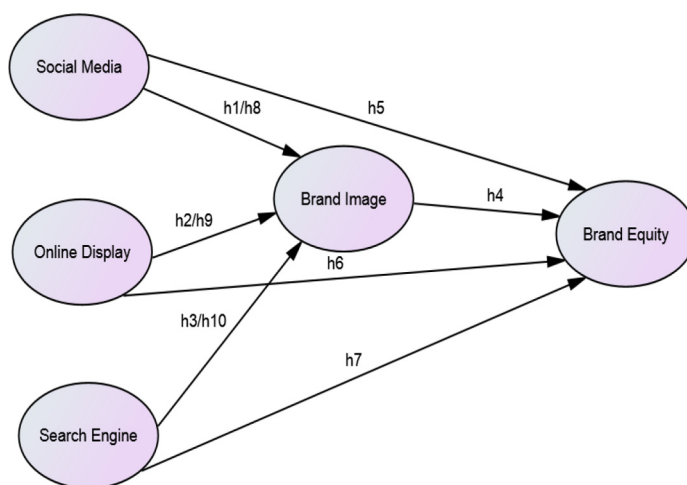


Figure 1.  
Conceptual model of  
the study

- H3.* Search engine has a positive effect on brand image.
- H4.* Brand image has a positive effect on brand equity.
- H5.* Social media has a direct effect on brand equity.
- H6.* Online display has a direct effect on brand equity.
- H7.* Search engine has a direct effect on brand equity.
- H8.* Brand image mediates the relationship between social media and brand equity.
- H9.* Brand image mediates the relationship between online display and brand equity.
- H10.* Brand image mediates the relationship between the search engine and brand equity.

Hypothesized conceptual framework:

### 3. Methodology

Because the purpose of this study is to configure the relationship between Internet marketing communication and brand image and brand equity of Malaysian HE institutions, 370 local and international students were selected from various HE institutions. Stratified random sampling technique was used to select the respondents from public and private universities of various states of Malaysia. The questionnaire is attached in [Appendix 1](#). [Appendix 2](#) gives the distribution of collected samples.

A seven-point Likert scale was used in the questionnaire. It is a widely used scaling technique in social science having extensive options for responses ([Malhotra, 2009](#)). To form the related group of items, both exploratory and confirmatory factor analyses were used. Factor analysis is the most suitable statistical tool to converge large data into meaningful and organized sets while maintaining the desired coherence. Also, to test the hypothesized relationships among the variables, structural equation modelling (SEM) was applied by using AMOS software. SEM is an advanced multivariate technique that can assess multiple relationships. In addition, SEM can simultaneously measure the mediating and moderating effect of relevant factors ([Hair et al., 2016](#)). It is a widely used methodology in all the possible avenues of social science research including HE ([Hair et al., 2017](#)).

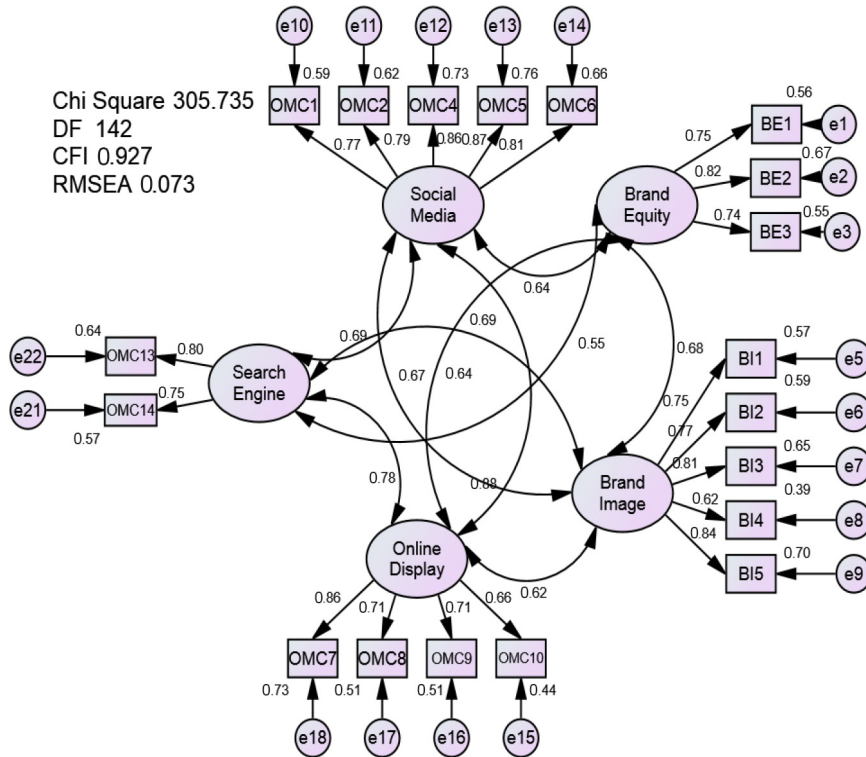
### 4. Data analysis

#### 4.1 Factor analysis

Factor analysis is used to choose the right items for online marketing constructs. Before using full phase factor analysis, sample adequacy and reliability statistics are to be satisfied. [Appendix 5](#) reveals the satisfactory reliability of the instrument with the Cronbach's alpha value more than 0.90. Kaiser–Mayer–Olkin (KMO) value over 0.60 approves that the number of items used in the analysis is adequate for factor analysis.

A total of four factors including three independent factors are confirmed ([Figure 2](#)) as the overall goodness of fit in the confirmatory factor analysis (CFA) is acceptable (CFI, RMSEA value). In addition, higher loadings of an item (loading more than 0.5) indicate its higher association with the concerned factor. These three independent variables are search engine, Social Media and Online display.





**Figure 2.**  
CFA model (overall  
measurement model)

#### 4.2 Structural equation modelling approach

Structural equation modelling (SEM) is a comprehensive statistical tool that can assess multiple relationships between and among the constructs or factors. SEM either accepts or rejects the overall model justifying its fit besides configuring the individual relationships. As suggested by scholars, this study went for confirmatory factor analysis (CFA) to re-confirm the items of the related factor (Hair *et al.*, 2010). The overall model fit of CFA permits the analysis of the path model to assess the hypothesized relationships.

The resemblance between the CFA and path model should be there to validate the analysis. Besides, the overall fit of the path model is justified with at least one of the prescribed items of absolute, parsimonious, and incremental fit indices (Hair *et al.*, 2010). In line with this prescription, the present study reports normed chi-square, comparative fit index (CFI), and root mean square error of approximation (RMSEA) values respectively.

Chi-square is one of the fundamental tools to assess the overall fit of the model. Considering the sample size and difference between the model and observed covariance matrix, a lower chi-square value is expected at defined degrees of freedom and significant  $p$ -value. The chi-square value of the present study with the given degrees of freedom and  $p$ -value is satisfactory. CFI is mostly used to assess the baseline comparison. It assesses the correlations among the relationships in a given data set. Having CFI value close to 1 was expected for the study to set a good fit. RMSEA is a composite index to see the overall model fit of the overall analysis. Here the value less than 0.08 are expected. Figure 2 shows the

baseline model where all the fit indices, normed chi-square, RMSEA, and CFI are showing the overall fit of the model.

4.2.1 *Confirmatory factor analysis (CFA) and validity testing.* Before final path analysis or hypothesis testing among the constructs, validity and reliability should be analyzed (Hair et al., 2016). Hence, this section focuses on different types of validity and reliability. In terms of validity, the study highlights content and constructs validity where the construct validity covers discriminate and convergent validity. To deal with the reliability of each construct, the study focuses both on the value of Cronbach's alpha and constructs reliability (Appendix 4) (Figure 3).

The validity of the structural equation model is associated with construct validity. Construct validity is the extent to which a set of measured items reflects the latent theoretical construct (Hair, 2017). To justify the construct validity, we should test the convergent and discriminant validity.

4.2.1.1 *Convergent validity.* It shows the convergence or in another term common share of the proportion of variance among the constituting items of the construct. To assess the expected level of convergent validity, one needs to confirm the following conditions. First, most of the factor loadings of the construct should be greater or equal to 0.70. Next, construct reliability should be higher than 0.60, and finally, the average variance extracted (AVE) should be 0.50 or more (Hair et al., 2010). Appendix 4 depicts that the factor loadings of each of the construct are higher than 0.70 and AVE is also more than 0.50 except for construct number three. However, because AVE value is closer to 0.50 (where a total number of respondents is over 200), there should not be any serious concern on the convergent validity (Hair, 2010). Also, for the construct reliability, all the constructs have the value even more than 0.70 where the threshold value is 0.60.

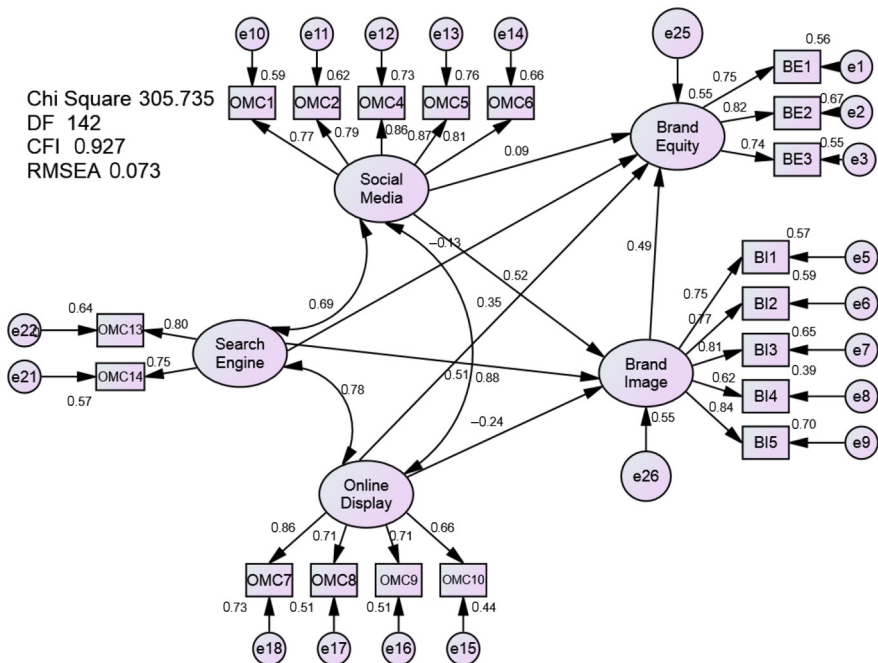


Figure 3. A baseline model

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4.2.1.2 Discriminant validity. Discriminated validity denotes the statistical test if two constructs differ to each other (Hair *et al.*, 2010). In this regard, the average variance extracted of each construct is compared with the squared correlation ( $r^2$ ) with other constructs. The positive differences between AVE and  $r^2$  depict the uniqueness of the constructs. Here, AVE should be higher than the square multiple correlation values. Appendix 3 shows the comparison between these two values where diagonal values represent AVE, and above-listed values are representing the squared multiple correlations. Here, in all cases, AVE is bigger than the squared multiple correlation values. Hence, it can be said that there is no issue of discriminant validity in the analysis and all constructs are unique.

4.2.2 Hypotheses testing. From the baseline model, the critical ratio value (CR) for standard estimation is used to test the hypotheses. The benchmark value is 1.96 to assess the significance of a relationship (Hair *et al.*, 2010). Table III shows that three out of four derived hypotheses are significant.

4.2.2.1 Regression weights: (group number 1 – default model). It reveals that derived relationships between social media and brand image, search engine and brand image, and brand image and brand equity are significant. However, the relationship between online display and brand image is found insignificant. It implies that alternative hypotheses  $h_1$ ,  $h_2$ , and  $h_4$  are not rejected whereas all others are. This holds that social media and search engines have a positive influence on the brand image of HE institutions. The results are supported by many previous studies described in the literature review section.

On the contrary, the relationship between online display and brand image ( $h_3$ ) is found insignificant, which supports the fact that online display such as banner and pop-up promotions may not ultimately contribute to the image of a tertiary education institution.

## 5. Findings of the study

In line with contemporary literature, the study reveals positive relationships between brand image and brand equity, search engine and brand image, social media and brand image. However, the relationship between online display and brand image is not found to be significant.

Testing the relationship between social media and the brand image of HE institutions is found significant. It gets support from contemporary research as well. For instance, Lilly *et al.* (2012) and Greenhow (2011) found that interaction with different constituencies, such as prospective and current students, alumni, staff, and faculty which eventually make these parties aware of the existing image of the higher learning institution is now possible due to the availability of social media such as Facebook, Twitter and so on (Rutter *et al.*, 2017).

With a social networking account, the institutions can “Act” and “Interact” at the same time (Seric, 2017). Social media makes a breakthrough in connecting people at a real time that other media cannot do. Stakeholders such as prospective and current students, alumni and faculty members are expected to access university news and updates to interact in real time more than ever. Social media or social networking sites come into the picture here (Foroudi *et al.*, 2017).

The second hypothesis about the relationship between the search engine and brand image is also found to be significant and supported by the available literature. For instance, many of the organizations take SEO strategies to rank their name on the top of searched pages (Seric, 2017). SEO techniques allow the school marketing division to initiate some steps to appear at the top of these lists as the research shows that the users are usually interested in accessing only the first few links while showing least interest in the subsequent pages (Rutter *et al.*, 2016).

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To attract the information seekers, search engine optimization techniques are important. Ramanathan *et al.* (2017) describe the search engine as the most popular method to retrieve information among the online surfers. Rutter *et al.* (2016) argue that every marketer should be familiar with the search engine and its optimization techniques to increase the site traffic and to build strong brand familiarity and image.

The third hypothesis about the relationship between online display and brand image is not found to be significant. Because marketing communication is a dynamic process, an integrated communication process in this specific context may not be identical (Schivinski and Dabrowski, 2015).

The final hypothesis about the relationship between brand image and brand equity of HE institutions is found to be significant. Related theories also support the hypothesis. In the customer-based brand equity model, Keller (2010) depicted the relationship which has been empirically tested many times.

Brand image, branding and brand equity are correlated to each other and there is no uniform idea to distinguish one from another. Kotler *et al.* (2008) gives the definition of branding as the combination of elements such as name, term, symbol, design to differentiate the concerned product and services from those of the competitors. Overall, branding brings practical benefits such as identification, tracing or managing the product for both consumers and company while brand allows the marketers in breathing life into the core product and services (Endo *et al.*, 2019).

Brand equity represents the overall set of liabilities and assets related to a brand. In coming up with the brand equity, Raji *et al.* (2018) suggest that understanding the brand and brand image is fundamental because it will assist in knowing and explaining the brand equity as depicted by three-dimensional relationships among brand image, brand attitude, and brand equity. The study showed that brand image plays a key role to create positive brand equity fundamentally. In contrast, Endo *et al.* (2019) describes that image of the product or service is more than its name, addressing it as the personality of the overall brand that takes place after all the brand building activities.

In addition, the rest of the hypotheses (*H5-H7*) measures the mediating impact of mediation variables (brand image) with the independent variables in relation to the dependent variable. Brand image plays a mediating role for two independent variables namely social media and search engine with brand equity as the dependent variable. In contrast, as discussed earlier, for online display advertisements, the mediating role of brand image is found insignificant which is also supported by many literatures (Schivinski and Dabrowski, 2015).

### *5.1 Conclusion, implications and limitations of the study*

The branding of a higher educational institution and using web-based marketing communication to accelerate the efforts is not a new idea. However, the review of the literature, as stated earlier, finds that there is a lack of integration in approaching the Web-based communication tools where institutions and sometimes government are unable to read the real needs and preferences of key stakeholders in terms of initiating the approaches. Hence, the study is the response against that desire to form an integrated approach with inclusion and better use of more effective web-based communication tools taking the responses of key service receivers into account. Further details of the practical and theoretical implication of the study are given below:

Apart from the need of right web-based marketing communication mix, a model has been required through which a specific marketing communication tool or the set of communication tools as a whole can be evaluated in its ability to create the brand image and

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brand equity for Malaysian higher educational institutions whilst brand equity is addressed as the ultimate goal of all service marketing activities. Considering this point, the proposed model of the study can be applied.

Brand building activities become crucial for most of the institutions because the tradition of a HE institution is no longer the sole reason to remain competitive (Seric, 2017). The study gives a clear understanding of how a specific web based marketing communication can play its role to create the desired brand image and equity, particularly in the context of Malaysian higher education. The present study will assist the key stakeholders to conceptualize and operationalize the role of online marketing communication mix (IMC). To build a brand image of Malaysian higher education service the study may assist the intended comprehensive approach of its Ministry of Education towards the goal of becoming one of the top regional educational hubs.

In addition, it may support to retain many local students who may otherwise go overseas. It may also attract many of other fee-paying and talented international students and manage long term profitable relationship with them. This study also shows the importance of recruiting skilled staffs (having soft skills such as web design, SEO and social media analytics) in the institutions' marketing, communication and staff development department. Future study can use this model separately for private and public institutions or can see if there is any moderating effect of gender and/or age group on the proposed hypothesis.

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**Configuring Web-based Marketing Communication towards brand image and brand equity of Malaysian Higher Educational Institutions**

Please tick (√) in the appropriate box that represents your perception on each statement:

Here, 1 = Strongly Disagree, 2 = Disagree, 3 = somewhat disagree 4 = Neutral,  
5 = Somewhat Agree 6 = agree 7 = strongly Agree

<b>Section 1: Brand Equity:</b>								
Please rate the following items as the elements of <b>Brand equity</b> in relation to higher educational branding in Malaysia								
1	I am very much loyal to my higher educational institution.	1	2	3	4	5	6	7
2	I always want to be engaged with my institution.							
3	Community feeling regarding my higher educational institute is always active.							
4	I always carry love marks for my institution.							
5	I am not reluctant to go for positive word of mouth for my higher educational institution.							
<b>Section 2: Brand Image:</b>								
Please rate the following items as the elements of <b>Brand Image</b> in relation to higher educational branding in Malaysia								
6	Positive Brand image has positive influence on my choice of a higher educational institution.	1	2	3	4	5	6	7
7	Brand image of the institution can Reduce my sensitivity on imposing fees and charges and help me to be more loyal towards the brand.							
8	A good image denotes the identification mark to me for an higher educational institutions.							
9	Brand image Provides intrinsic utilities of the service and develops someone's attachment with the organization.							
10	Brand image helps to manage proper positioning of the institution.							
11	A good image denotes the favourable position of the institution.							
12	A good image denotes the unique position of the institution.							
<b>Section 3: Online marketing communication:</b>								
Please rate the following items as the elements of <b>online communication</b> in relation to higher educational branding in Malaysia								
13	Online communication gives me faster information regarding my institution that helps to forms the good image of it.	1	2	3	4	5	6	7

*(continued)*



14	Website of my institution as an online communication method works rightly.								
15	Easy navigation is important to me in online communication to develop a good perception about my higher educational institution.								
16	Social media as a key online platform gives me a real time connection with the institution and influence my thought on it.								
17	As an online communication, online media gives me the opportunity of interaction to my higher educational institution.								
18	Creating online community is influencing me to think positively about an organization.								
19	Online video substances are helpful in portraying a positive perception on the given service of the organization.								
20	Text display is helpful for me to know my institution in a better way.								
21	Online Banner display is a useful online communication for the educational institutions toward the brand image development.								
22	Pop up display is a useful online communication for the educational institutions.								
23	Micro blogging is a useful online communication for the educational institutions.								
24	Search engine is a useful online communication for the educational institutions to create a positive brand image.								
25	Email marketing is an important online marketing tool for the higher educational institution and it develops a good image of an organization.								

**Section 4: Demographic profile:**

Kindly tick (√) in the appropriate box:

**26. Gender:**  Male  Female

**27. Age:**  18 – 24  25 – 35  36- 55  Above 55

**28. Nature of involvement**  Student  Staff

**29. Academic status:**  Diploma  Under Graduate  Masters  PHD

**30. Country of origin:**  local  International

**31. Nature of your higher educational institution?**  Public  Private

Name of the states	Private Institutions	Public Institutions	Total
Selangor	33	37	70
Kedah	14	13	25
Kuala Lumpur	30	50	80
Johor	30	25	55
Malacca	14	6	20
Perak	16	9	25
Pahang	9	12	20
Penang	22	28	50
Terenganu	18	12	30
Kelantan	17	13	30
Negeri Sembilan	6	9	15
<i>Grand Total</i>	<i>209</i>	<i>214</i>	<i>423</i>

**Table AI.**  
Selected respondents  
from different states  
in peninsular  
Malaysia

**Note:** The raw sample was 423; after data screening, 370 remain valid

## Appendix 3

	Figure: AVE vs squared multiple correlation among the factors			
	F1	F2	F3	F4
F1	0.54	0.4624	0.3721	0.3025
F2	0.68	0.55	0.3025	0.4624
F3	0.61	0.55	0.48	0.4096
F4	0.55	0.68	0.64	0.68

**Table AII.**  
AVE vs squared  
multiple correlation  
value of the  
constructs

**Notes:** Here, AVE is placed in diagonal value. Below the diagonal is the correlation value; up the diagonal is the multiple correlation value

Appendix 4

Web-based marketing communication

	BE		BI		OMC	
	Loading	Square Loading	Loading	Square Loading	Loading	Square Loading
L1	0.75	0.5625	0.76	0.5776	0.78	0.6084
L2	0.83	0.6889	0.77	0.5929	0.78	0.6084
L3	0.73	0.5329	0.79	0.6241	0.86	0.7396
L4	0.64	0.4096	0.61	0.3721	0.84	0.7056
L5			0.85	0.7225	0.76	0.5776
L6			0.66	0.4356	0.78	0.6084
L7					0.60	0.36
L8					0.67	0.4489
Sum (L1 to L9)	2.95	2.1939		3.3248		4.6569
	8.7025	4.8131		11.054		21.687
1-L1		0.4375		0.4224		0.3916
1-L2		0.3111		0.4071		0.3916
1-L3		0.4671		0.3759		0.2604
1-L4		0.5904		0.6279		0.2944
1-L5				0.2775		0.4224
1-L6				0.5644		0.3916
1-L7						0.64
1-L8						0.5511
Sum		1.8061		2.6752		3.3431
AVE		0.5484		0.5541		0.5821
Construct Reliability		0.8281		0.8051		0.8664

**Table AIII.**  
Factor loading, AVE and construct reliability computation for the constructs

**Note:** Here, BE = brand equity, BI= brand image and OMC = online marketing communication

Appendix 5

Reliability statistics	
Cronbach's alpha 0.920	No. of items 19

**Table AIV.**  
Reliability statistics

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