



ASSESSING THE STRENGTH OF TECHNOLOGICAL APPLICATION MODEL (TAM) IN PROMOTING DIGITAL MARKETING TOOLS IN HIGHER LEARNING INSTITUTION

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Abstract

The world is shifting from traditional to digital marketing where by marketing for now and beyond is no exception, such approaches includes the use of the Internet, mobile devices, social media, search engines, and other channels to reach consumers. Some marketing experts consider digital marketing to be an entirely new endeavor that requires a new way of approaching customers and new ways of understanding how customers behave compared to traditional marketing. The Purpose of the study is; to assess the strength of Technological Application Model (TAM) in promoting digital marketing tools for higher learning institution. Objectives employed where to; investigate the effect of social media, effect of content marketing and investigate the effect of search engine optimization on higher learning institution. The study focused on techniques such as Search Engine Optimization's, CM and SEO with support of

Tam theories, & Delone & Mclean. The study used a cross sectional survey design, data collection tools were questionnaires. Analysis of moment structure (AMOS) was employed as a technique for data analysis and modelling. Finding indicated that social media's factor loading obtained (0.45), with a R^2 coefficient of (0.58) indicating 58 % of the variation. The role of digital marketing tool factor loading obtained 0.30 (30%), Content marketing posted 0.65(65%) of factor loading, with a coefficient of determination R^2 of 0.58(58%) and last the factor loading of content marketing achieved 0.65(65%). Based on the results, It was the highest i.e. strong predictor on Digital marketing tool in higher learning institutions. Based on the above finding, it is seen that effective use of "digital marketing tools" will benefit higher learning institutions. The study recommends that marketing departments are to identify, analyze, and manage the unique risks connected with digital marketing technologies in order to reduce possible and selected digital marketing tools among many educational institution .

Keywords: TAM, Digital marketing tools, Higher learning institution, Rwanda

INTRODUCTION

The emergence of the Internet was revolutionary in the way we communicate and obtain information, currently the availability and mobility of technologies affects consumers' habits and promotes the transformation of classic business models. Research indicate that searchable FTP sites database as per Li (2002). As any digital marketer will tell you, devising and delivering an effective campaign is one of the most gratifying aspects of the job. Few things bring as much satisfaction as seeing a carefully considered, creative campaign successfully generating new leads. While developing new strategies and campaigns is fun, it also often requires a lot of admin. Fortunately, many digital marketing tools are available, designed to help streamline the entire digital marketing lifecycle. Having one is vital for capturing and following up on leads, and for tracking general customer information. With many CRMs on the market, perhaps the best-known is Salesforce. While there are CRMs that are easier to use straight off the shelf, Salesforce makes our list as it's one of the most ubiquitous and is unrivaled in terms of customizability.

Study by Chaffey, (2013) argued that to add banners are no longer used the most due to their unattractive and intrusive, people now prefer using ad blockers. However, the first clickable banner in 1993 was prepared and bought by AT&T on Hotwired.com, and 44% of person saw that banner and clicked on it. (Lafrance, 2017).

Rowley, Jennifer. (2004) indicated that website is the most digital advertising strategy because all other digital marketing elements redirect people to your website, which should

effectively convert potential customers. Elements of website design that generate conversions are using best SEO practices and tools, having a good user experience, and capitalizing the analytics results which various analytical companies present.

A website without effective SEO will not appear in the top search results on a Search Engine Results Page (SERP) and henceforth won't generate many clicks from Google, Bing, duck duck goes and other search engines. These clicks are critical to your digital marketing efforts because you need to drive as much traffic as possible to your website to generate direct sales. Salehi et al.,(2012)Even the most beautiful website will be mostly ineffective without the proper use of SEO.

Chu, (2011), in his study indicated that Using keywords that guests are likely to search for and optimizing your site for search engines will improve your SEO and push your website to the top of the organic listings. While Facebook and Twitter offer limited analytics to track marketing campaigns and tweets, your website has the ability to collect comprehensive information on who your guests are, how they know about your site, and what they view while on your site.

Sheth et al.,(2005) showed that information is invaluable while analyzing the preferences of your visitors and can be used to market your resort to a targeted, engaged audience .Websites are able to capture much more information about how guests engage with your website and brand than social media analytics.

Marketing describes the actions a business makes to get customers to purchase any goods or services. The business or individual seeks clients for their goods or services with the aid of marketing from Alexandra, T. (2021). Any marketing of a good or service that takes place online is referred to as digital marketing. For instance, marketing using tablets, laptops, cellphones, and other digital devices. According to Nair, H.V., digital marketing is a type of direct marketing that uses interactive media like emails, websites, online forums and newsgroups, interactive television, mobile communications, etc. to connect buyers and sellers electronically (2016).

Digital marketing is the process of advertising of products or services of companies using digital technologies available on internet including mobile phones, display advertising, and any other digital medium like google and Facebook ads etc. Philip Kotler is considered as the "Father of Modern which may have evolved over the past few decades. Digital marketing encompasses all marketing efforts that use an electronic device such as mobile phones computers or the internet. Businesses leverage digital channels such as search engines, social media, email, and other websites to connect with current and prospective customers. Digital Marketing is defined by the use of numerous digital tactics and channels to connect with

customers where they spend much of their time online. There are many types of Digital marketing implementation strategies such as Search Engine Optimization (SEO),

The advent of digital marketing can be traced back to the time of early 1980s. Before Digital marketing we had Traditional Marketing, which is a conventional mode of marketing that helps to reach out to a semi-targeted audience with various offline advertising and promotional methods

PROPOSED HYPOTHESIS

H01: Social Media has no significant effect on higher learning institution

H02: Content Marketing has no significant effect on higher learning institution

H03: Search Engine Optimization has no significant effect on higher learning institution

REVIEW OF LITERATURE

The introduction of the internet and web1.0 platform marked the start of digital revolution in the year 1990, and this is according to Monnappa (2020). The capacity of that platform were limited comparing to the platform of nowadays. And the proof of that is the fact that users could not share any information and could not find interaction opportunities in that platform, but at least the platform allowed them to read information upon request. In that same year, that's when the first internet search engine was launched and named "Archie". And this was developed for various discovery. Hence, developers created anonymous FTP host directories to be filled in the engine's servers of the Archie.

After the success of yahoo, other search engines like HotBot, Looksmart and Alexa were launched too. In 1998, that is where the hit was introduced in digital marketing and that is none other than Google and by then it became the most used search engine by playing vital role in DM optimization where marketing campaigns and search marketing took place as per Tiwari (2018). Soon after, that's when marketers began to implement SEO strategies to speed up their websites on google ranking. Meanwhile Google was being developed so as to analyze and fetch data in search, various algorithms were developed with the aim of revealing data in need by its users.

In 2004, that's when web 2.0 was revealed on stage, users were now able to read and interact with their platforms as time could pass so as to grow their businesses. Now with this web and various networks a way to other trends was discovered and created. That is where social media platforms such as LinkedIn, Facebook, Myspace, YouTube and Twitter were created and enabled the communication and interaction of users.

Countless businesses regarded these new platforms as an excellent opportunity to advertise and develop their products and services. By the end of 2004, the United States had raked in \$3 billion in online advertising. Based on research we can tell how the revenue rate in advertising online has been since 2001 to 2019. And that's when websites began the use of cookies. Cookies are small data files which are saved to a computer while online.

Basically they were created with the aim of analyzing a user's browsing routines, but now, they were evolved into e-commerce where they come up with the accurate data collection while suggesting it to an online user. In 2009, Google AdWords which pop ups in the search engine result corner of google was launched as well as google AdSense and these work on a cost per click principle. And that's the time google focused in advertising with the aim of lead the digital business in world.

The period between 2008 and 2010, there was an increase of 25% using internet on mobile phones and mostly were young audiences, according to Badenhost (2010). In 2010, that's when mobile marketing experienced its first hit ever and ever, where by smart phones such as iPhone and HTC embraced the digital market with their best features of being user friendly with high price in deed. That is when Google began to acquire lots of mobile and social based companies by spending 750\$ million on AdMob while targeting being the industry leader. In 2014, guess what comes to the stage? The number of mobile users exceeded the number of PC users and this highly motivated companies to invest more and focus on mobile marketing so as to increase their sales as per Vivek (2017).

By then, the introduction of another search engine named Bing took place, where by it enabled the development of an app which allows them being the default search engine at its primary stage of introduction in mobile phone users. As far as research was being done, Bing discovered that part of its users in mobile are looking for local intent, and this made Bing to provide relevant information on its users so as to be their preference search engine. And this became a challenge to the industry leader which was google as per vivek (2017). As indicated that in the literature, digital marketing experienced a lot in its growth since the last 30years, and still the sky won't be its limit up to now.

EXISTING MODEL

Delone & Mclean Theory

Delone and McLean provided an updated IS success model ten years after the release of their initial model, based on an assessment of the numerous contributions to it (Delone & McLean 2002, 2003) and in this study such will contribute on modeling effect of content

marketing, social media and engine optimization on higher learning institution. The new model includes six interconnected characteristics of information system success: information, system and service quality, (intention to) use, user satisfaction, and net benefits.

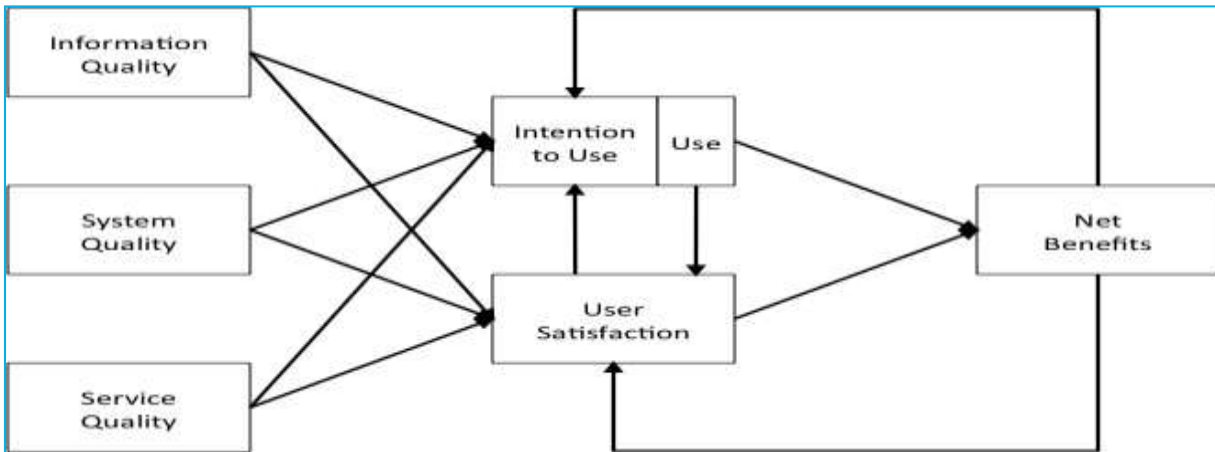


Figure 1: Updated Information Systems Success Model (Delone & McLean 2002, 2003)

Technology Acceptance Model (TAM) Theory

Fred Davis introduced the Technology Acceptance Model (TAM) in 1986 for his doctoral project, as depicted below. TAM is an application of the Theory of Reasonable Action designed primarily for modeling consumers' adoption of information systems, such as; effect of content marketing, social media and engine optimization on higher learning institution.

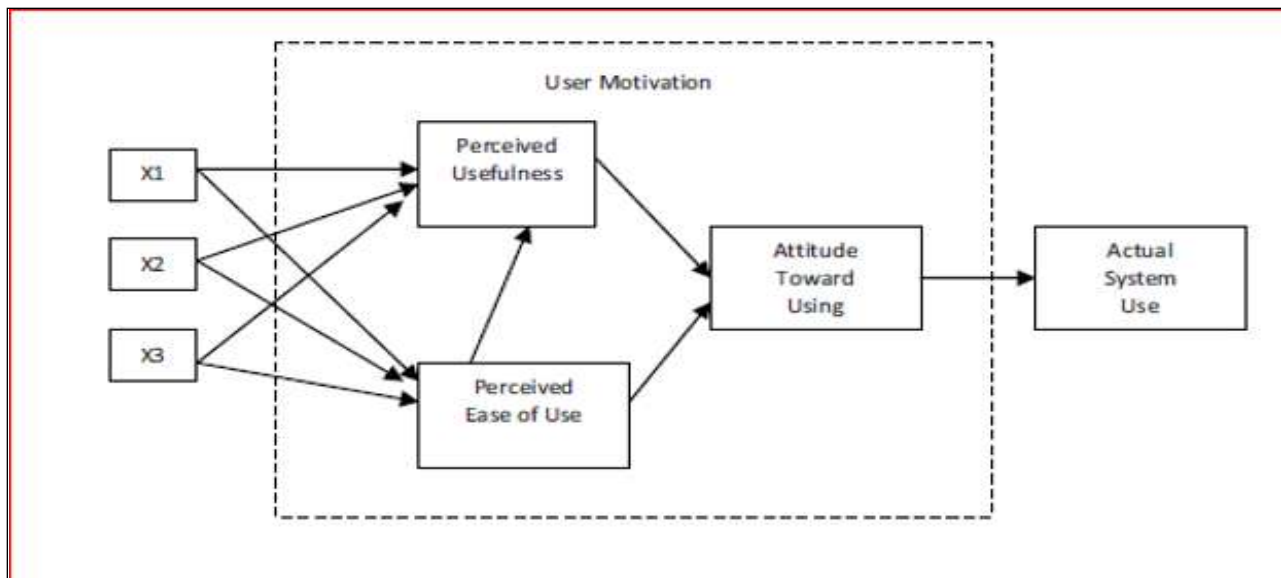


Figure 2: Original Technology Acceptance Model (Davis, 1986)

RESEARCH METHODOLOGY

A cross-sectional survey research approach was used for this investigation. A cross-sectional survey is a strategy for gathering data from a large population at one moment in time. Cross-sectional surveys are studies that collect data from a subset of the population at a certain point in time. This study used a cross-sectional survey over alternative approaches such as a longitudinal survey due to the fact that it collects data from a large number of people at one time, while longitudinal collects data from the same target population at many times

$$\text{Sample Size } \frac{N}{1+N(e)^2} = \frac{143}{1+143(0.05)^2} = 105$$

Where, n denotes the sample size, N the entire population, and e the margin of error.

A 95 percent confidence level was used, resulting in a 5 percent margin of error. The sample size was drawn according to the population size in order to produce a fair and representative sample size.

The target population provided a sample size of 105 responses. The population was proportionally divided into different category, Therefore, the employees = $105 \times 129 / 143 = 94$, managements = $105 \times 12 / 143 = 10$ and the sample size human resource officers = $105 \times 2 / 143 = 1$

Table 1: Sampling Design

Categories	Population	Sample size	Sampling Techniques
Employees	129	94	Simple random sampling
Head of departments	12	10	Simple random sampling
HR	2	1	Simple random sampling
Total	143	105	

ANALYSIS, FINDINGS AND DISCUSSION

Data was analyzed by Structure Equation Model using (AMOS). Analysis of MOment Structures implements general approach to data analysis known as structural equation modeling (SEM), also known as analysis of covariance structures, or causal modeling. In this study correlation and covariance each measure and summarize the strength of bivariate association, but the correlation is a scale-free measure (which ranges between -1 and +1), while the covariance is a scale-dependent measure (which can range between negative and positive numbers of arbitrary magnitude, depending on the metrics of the constituent variables). This study argues that scale free nature of the correlation can be very useful if you want to compare the strengths of bivariate associations across variables and settings. Covariance, on the other

hand, retains and incorporates the scaling of its constituent variables, and therefore contains additional information that becomes useful when one wants to do more than simply chat about the strength of association.

The purpose of this section is to present the findings of the study, which begins with a summary of the demographic profile of the respondents chosen, where by a summary of the response rate, gender of respondents, age of respondents, level of education, objectives, test of hypothesis, model details on the findings of each one are shown. Hence, the findings of the study's objectives are as follow:

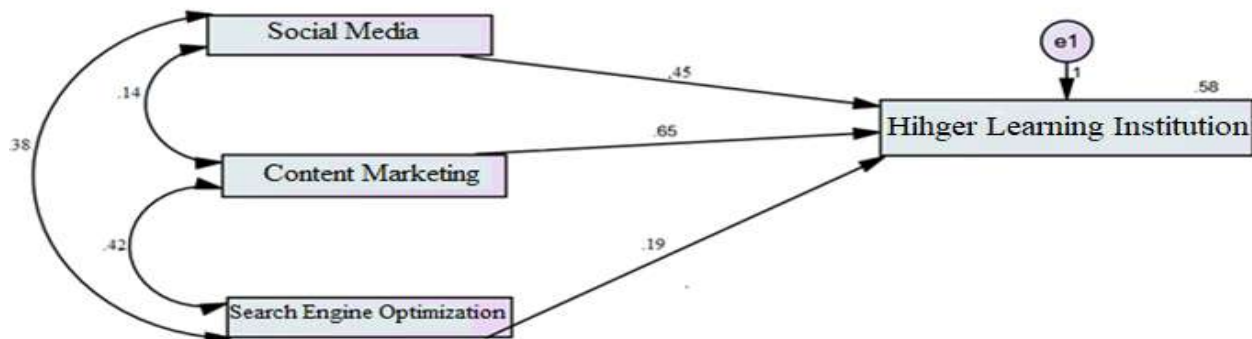


Figure 3: Findings of the study's objectives

Similar studies done by Li (2019) tested hypothesis on Infrastructure, it identified 14 such information technology tools, among them Electronic Data Interchange, (ERP), internet, and extranets, study established that grouped tools were significant use of ERP, it was channeled into three groups in terms of their primary purpose: communication tools, resource planning tools, and supply chain management tools. Given this classification, two sub factors are considered in this research: communication and planning tools. Studies by Abdalla (2016) attest that there is a strong effect between skills and Obong'o (2021) vindicated system performance following a critical evaluation of the skills required to improve the performance of Ministries of Government in Kenya through the personal computer system. Moreover, completeness, compatibility, usability and integrality of the current systems should be achieved and current infrastructure might be upgraded.

Findings on Social Media: Objective 1 (To investigate the effect of social media on higher learning institution)

Social Media factor loading is 0.45 with the coefficient of determination $R^2 = 0.58$ indicating that independent variables (social media, content marketing, and search engine optimization) explained and predicted 58 percent of the variation in social media.

According to (Kline, 1998), when the Factor loading values are greater than 0.30 (30 percent), it suggests a mediocre predictor; however, the Factor loading of social media is 0.45, indicating that it is a good predictor of digital marketing tool. And as a result, this study concluded that social media is a good predictor.

In addition, the covariance between variables is depicted above. The lowest covariance is 0.14 between social media and search engine, while the mediocre covariance is 0.42 between content marketing and search engine Optimization. While covariance measures the direction of a relationship between two variables, correlation measures the strength of that relationship. This is usually expressed through a correlation coefficient, which can range from -1 to +1 as stated by Everitt, B. S.; Skrondal, A. (2010).

Findings on Content Marketing: Objective 2 (To investigate the effect of Content Marketing on higher learning institution)

Factor loading of content marketing is 0.65, with a coefficient of determination R^2 of 0.58, indicating that 58 percent of the variation is explained. Factor loading values more than 30% suggest a high predictor (Kline, 1998). As content marketing has a factor loading of 0.65, that indicates that it is a strong predictor of digital marketing, and as a result, this study concluded that content marketing is a strong predictor. In addition, the covariance of the variables; 0.14 is the covariance between social media and search engine, and 0.42 is the greatest covariance between content marketing and search engine. While covariance measures the direction of a relationship between two variables, correlation measures the strength of that relationship. This is usually expressed through a correlation coefficient, which can range from -1 to +1 as stated by Everitt, B. S.; Skrondal, A. (2010).

Findings on Search Engine Optimization: Objective 3 (To investigate the effect of Content Marketing on higher learning institution)

The factor loading of SEO is 0.19, with a coefficient of determination R^2 of 0.58, indicating that 58 percent of the variance is explained. Factor loading values less than 0.30 suggest a poor predictor (Kline, 1998), whereas the SEO's factor loading is 0.19, indicating a poor predictor of digital marketing. As a result, according to this study, search engine optimization is a poor predictor. Furthermore, the covariance between variables is shown, where by the correlation between SEO and content marketing is 0.42, while the covariance between SEO and social media is 0.38. While covariance measures the direction of a relationship between two variables, correlation measures the strength of that relationship. This is usually

expressed through a correlation coefficient, which can range from -1 to +1 as stated by Everitt, B. S.; Skrondal, A. (2010).

Test of Hypotheses

This section explains the results of Null hypothesis testing, a technique used to evaluate whether or not a certain treatment has an effect on higher learning institution in a community (Sahal, 2014). The standardized regression weights are used in this study because they allow the researcher to directly compare the relative influence of each independent variable on the dependent variable (Hair et al., 2006). While analyzing the results of hypothesis, Critical Ratio (CR) is majorly considered and equals to regression weight estimate (estimation) divided by estimate of standard error (SE). The table below shows the study's hypotheses values:

H01: Social Media has no significant effect on higher learning institution

Analyzing the results of hypothesis 1, $CR = 4.673$. If CR is more than 1.96, the route is meaningful at the .58 level or above (Coromina, 2000). The results in P column, show three asterisks (***) , hence suggest significance less than .001 which is strong. As a result, this study rejects the null hypothesis (H01) and supports the alternate hypothesis (H1). Hence, according to the study's data, social media has a favorable impact on digital marketing of higher learning institution. The study's conclusions, which were confirmed by Javelin Strategy & Research (2009), discovered that social media is a key on higher learning institution.

H02: Content Marketing has no significant effect on higher learning institution

Analyzing the results of hypothesis 2, $CR = 5.815$. If the CR is more than 1.96, the route is significant at the .58 level or above (Coromina, 2000). The results in P column, show three asterisks (***) , hence suggest significance less than .001 which is a strong one. As a result, this study rejects the null hypothesis (H02) and supports alternate hypothesis (H2). Hence, according to this study, content marketing has a significant effect on higher learning institution. The study's conclusions, which were confirmed by Javelin Strategy & Research (2009), discovered that social media is a key on higher learning institution

H03: Search Engine Optimization has no significant effect on higher learning institution

Analyzing the results of hypothesis 3, Critical Ratio (CR), = 4.166; If $CR > 1.96$, factor covariance is considerable as per (Coromina, 2000). The results in P column, show 0.817, as it is greater than 0.05, hence the factor is weak and as well as comparing to other factor's p values. As a result, this study rejects the null hypothesis (H03) and supports the alternate

hypothesis (H3). And according to this study, SEO has a favorable influence on higher learning institution, however it has a modest effect (.817 sig) (Shan, 2012).

Overall Modelling

Estimating the covariance of one variable with another offers another important way of summarizing the strength of association between the two variables. This study tested the covariance, this study content that a covariance is the effect of content marketing, social media and engine optimization on higher learning institution. A correlation coefficient is simply the covariance between a pair of standardized variables. The study tested covariance of content marketing, social media and engine optimization on higher learning institution, since estimating the covariance of one variable with another offers another important way of summarizing the strength of association between the two variables by (John B., 2011).

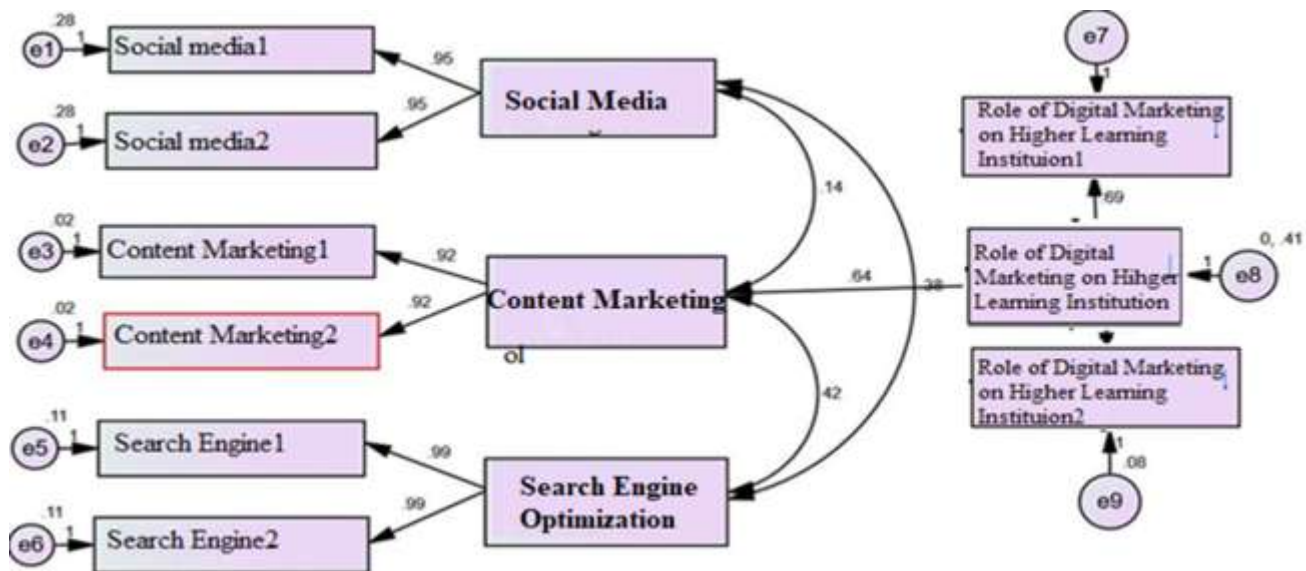


Figure 4: Shak's Digital Marketing Tools Overall Comparison Sub-Models of this Study

This model above discusses an overall comparison sub-models of this study, consider all variables in it are parallel tests that indicates strong test model. the result indicates that social media1 and social media2 split model posted equal factor loading (0.95) and variance (0.28), also same as content marketing posted (0.92), variance (0.02) and Search Engine Optimization yield (0.99), variance (0.11). As the model had equal factor loadings, it indicates that the two-model split was at equilibrium and made a significant contribution to higher learning institution as a single model. As a result, the model is precisely measured and executed. This study's

model supported additional research conducted by (Bavis, 2012, Burkhardt, 2009, Rice &Alize, 2016).

CONCLUSIONS

The goal of this study was to examine the function of digital marketing tools in the selected field of the education sector, and it can be shown from the research that content marketing is the digital marketing tool that took effect at UTB.

In addition, 61.7 % possessed a master's degree. The study also looked at the effects of social media, content marketing, and search engine optimization on higher learning institution and according to the findings of the study, social media (FL=.45), CM(FL=.65), and SEO (FL=.19) all have a substantial impact on higher learning institution.

According to this study, content marketing has the greatest influence on higher learning institution because it is the highest factor (65%) that influences on higher learning institution, followed by SM (0.45) and SEO (0.19), which is the third factor influencing higher learning institution but at a low rate.

The model testing of the study posted similar factor loadings and variances which indicated that the model split was at equilibrium with strong measurement and accurately performed.

RECOMMENDATIONS

As the study discovered that social media, content marketing, and search engine optimization had a substantial impact on various levels of digital marketing in UTB. According to the study:

- Marketing departments should identify, analyze, and manage the unique risks connected with digital marketing technologies in order to reduce them as much as possible. For example, ensuring that content is posted over a secure website (https), and only relevant information is published, and so on.
- Second, it can be seen that content marketing is the digital marketing tool that has taken effect in UTB; hence, the researcher suggests the use of selected digital marketing tools among many in any institution as an important element for the success and recognition of a university.
- Last but not least, it is important to note that the global economic pandemic will not have a negative impact on digital marketing tools in the future, as colleges still have opportunities and may capitalize on this scenario by raising their digital marketing costs in preparation.

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