



IMPACT OF INFORMATION TECHNOLOGY ON ACHIEVING DIGITAL CONTENT DISTRIBUTION

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Analytical study of the opinions of a sample of private colleges staff

Article history:	Abstract:
<p>Received: 7th November 2021 Accepted: 7th December 2021 Published: 16th January 2022</p>	<p>This research aims at identifying the role of information technology in achieving digital content distribution. The problem of research identifies several questions about the extent to which the variable of information technology can be adopted to promote the digital content distribution. To address the problem of research, a set of hypotheses that are appropriate to the problem of research and its objectives have been formulated. A hypothesis was designed showing the correlation and effect relationship between the variables, and some of the Iraqi private colleges were selected as a research population, including (Al-Nusour University College, Al-Mashreq University, Baghdad College of Economic Sciences, Al-Mamoun University College) to apply the scientific aspect of research and rely on a random sample of its (80) staff respondents. The questionnaire was used as a key data collection tool and analysed by ready-made software package (SmartPLS). In the light of the findings, the research found a set of conclusions, the most important of which was that the results of the statistical analysis revealed the direct impact of information technology on the digital content distribution, demonstrating the need for attention to information technology. In the light of the findings of the research, a set of recommendations were suggested, most importantly, greater attention should be paid to the digital content distribution variable as one of the intellectual trends in the contemporary literature in e-marketing, and its impact in achieving successful content marketing, and achieving the competitive advantage for business organizations should be highlighted.</p>

Keywords: Information technology ,Digital content distribution

RESEARCH PROBLEM AND QUESTIONS

To identify the relationship between digital content distribution and strategic success in its dimensions, and as a contribution to reducing the knowledge gap between these two variables. The current research therefore seeks to answer the following key questions:

- 1- What is the level of availability of information technology in the private colleges?
- 2- How far has digital content distribution been achieved in the private colleges?
- 3- Is there a significant relationship between information technology and its combined dimensions and digital content distribution?

Research Objectives

The research aims to achieve a key objective (to demonstrate that information technology has an impact on the achievement of digital content distribution) through a set of sub- objectives:

1. Determining the extent to which information technology is applied in private colleges.
2. Detecting the extent to which online content distribution has been achieved in private colleges.
3. Ensuring that information technology has an impact on digital content distribution.

Importance of Research

Research is important through its variables:

- 1- The scientific significance of the current research variables is that they are rarely

studied together by researchers in Arab and foreign studies.

- 2- Research contributes to guiding private colleges to areas of importance in improving their response more rapidly and having a greater impact on society.

Research hypotheses

First main hypothesis: "There is a significant correlation between information technology in its dimensions and digital content distribution".

1. **There is a significant correlation between softwares and digital content distribution.**
2. **There is a significant correlation relationship between Telecommunications networks, Internet and digital content distribution.**
3. **There is a significant correlation between human resources and digital content distribution.**

Second main hypothesis: "There is a significant impact of information technology in achieving digital content distribution." Sub-hypotheses emerge from this hypothesis, which are:

1. **There is a significant effect on digital content distribution.**
2. **There is a significant impact of telecommunications and Internet networks on digital content distribution.**
3. **There is a significant impact of human resources on digital content distribution.**

The hypothetical outline of the research.

The outline below illustrates the research hypotheses, in the light of the study problem in figure 1, which consists of two variables: the independent variable of information technology, and the dependent variable of digital content distribution.

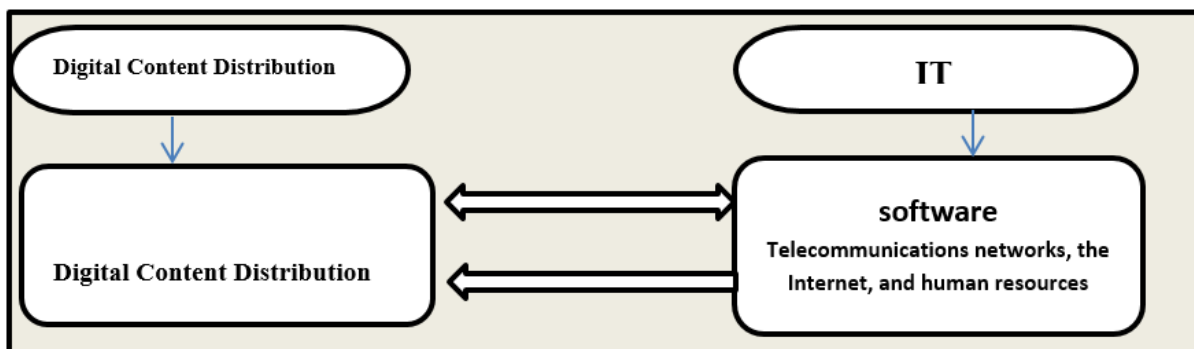


Figure 1. Proposed Research Model

Source: By Researcher

Population and sample

Several Iraqi private colleges have been selected as a population for the current research. A random sample of 80 respondents was selected.

Theoretical Framework for Research

First: Information technology:

Information technology is today the basis for the development of countries and the normative practice of leading and successful organizations. It is now the age when knowledge and information burst, so organizations must keep pace with technical, scientific, technological, political, social and cultural changes, especially in the globalization movement.

1- IT concept:

Information technology can be defined as the technology used to store, process, distribute or create

information. Technology is a data-processing mechanism (Deb, 2014, p. 25).

Or it is tools, devices and resources used to communicate, create, manage and share information. These include hardware (computers, modems, mobile phones), software (computer software and mobile applications) and networks (wireless communications and Internet) and are primarily concerned with the purpose of collecting, processing, storing and transmitting relevant information to support management operations in any organization (Olaoye & Kehinde, 2017, p. 3).

It could be information processing application, which includes both computer hardware and software dealing with storage, retrieval, sharing and use of information, data and knowledge for communication



and decision-making (Alotaibi & Federico, 2017, p. 1173).

2- Importance of information technology

Information technology has an impact on the relationships of some global companies because of the great technical competition and technology that creates more effective relationships. To achieve the economic advantage (Segerson et al., 2017, p. 520). IT can recognize and value customers. Information technology can also be used to identify co-workers, sponsors, staff and suppliers. The use of information technology in all types of organizations can have a significant impact on improving productivity. Global organizations can employ different types of information technology to promote products to the public. (Hadadi & Almsafir, 2013, p. 3)

Turban and Volonino (2010) noted that information technology has countless contributions and explained them as follow:

- a. Providing new ways of designing new organizations and organizational structures.
- b. Creating new relationships between customers and suppliers who link themselves electronically.
- c. Providing an opportunity for e-commerce, reduce procurement cycles, increase supplier exposure to customers, and bring comfort to buyers.
- d. Enabling tremendous efficiencies in the production and service industries through the exchange of electronic data to facilitate timely production.
- e. Changing the basis of competition and the structure of the industry, for example in the aviation and securities industries.
- f. Providing mechanisms through collective programmes to coordinate work and establish a knowledge base for organizational intelligence.
- g. Making it possible for the Organization to obtain and provide access to its staff throughout the Organization.
- h. Contributing to the productivity and flexibility of knowledge workers.
- i. Providing the manager with electronic alternatives for face-to-face communication and supervision

3- Information technology dimensions

Information technology involves a range of components: hardware and equipments, software and technology, databases, Telecommunications networks, Internet, and human resources to perform specific tasks and interact with different actors in different organizational or social contexts. (Sebastian & Dubravka ,2015: 4959; Fitrios, 2016:193; Paletta, & Dias Vieira Junior, 2008:2; Chidnandappa & Dharmendra, 2006:2; Benitez et al., 2018, p. 516)

A. Software: The process of controlling the physical components of detailed instructions and orders (Fouad & Ather, 2020, p. 429). Software can be defined as a series of detailed instructions that control the operation of a computer system and exist as software developed by computer programmers. (Hard castle, 2011, p. 12) as well as, it is all the software, languages, and computer languages that control the computer and teach it how to work. More than 80% of personal computers use a version of the famous Windows operating system from Microsoft. Many different operating systems are available free of charge in the public domain. (Hard castle, 2011, p. 12; Marakas & O'Brien, 2013, p. 14; Bolkuah & Sharif, 2016, p. 45)

- System software: Manages system programmes and controls the operation of the computer system while performing tasks on behalf of the user. Systems software consist of three main categories: The first is operating systems (OS) that interact with computers by monitoring and sending instructions to manage computer resources and directing the second class software development programs that allow users to develop their own software to execute processing tasks using programming languages. The third category is utility programs that provide a range of tools that support the operation and management of a computer system. Programmes that monitor system performance or provide security controls are examples of utility programmes
- Application software: Defined as a set of programs that enable users to perform specific information processing activities. Application programmes can be divided into two main



categories: General purposes and special applications. General-purpose applications are programs that can be used to carry out a wide range of common tasks that help to improve an individual's efficiency, while special applications include programs that aim to serve a particular purpose or implement a task that handles clearly defined information.

B. Telecommunications networks and Internet

are the means by which information is transmitted electronically over long distances. Nowadays, computer systems are generally connected to Telecommunications networks that allow computers to communicate and share data and information. These are mainly communication facilities such as telephone lines, modem rates, etc., such as cables, radio, axle wires, fiber optics, etc. (Umukoro et al., 2016, p. 44). They are the result of infrastructure development that has helped to distribute and disseminate data and their results. They are more like the means of transportation that helped connect the world and reduce distances of transport that have helped to connect the world, reduce distances and accelerate commercial distribution of products. Networks have increasingly accelerated the transmission of data and information produced as primary infrastructure. These networks are used for a range of purposes such as: provision of interpersonal communication, remote access to information, electronic commerce, reduction of expenses, sharing of resources, etc.

There are several types of networks, including (Marakas & O'Brien, 2013, p. 15):

- local area network (LAN) are used to connect computers and their accessories within a single building or office using the so-called Client-server.
- Metropolitan area network (MAN:), which is used to cover a group of buildings or an entire city, may consist of a set of local networks and usually use fibre-optic cables to connect the axes of this network.
- Wide area networks (WAN) are used to cover a wide geographical area and include States and continents so that users can share information and communicate internationally

- Internet: Represents computer networks that are spread in most parts of the world. The Internet is the largest tool for communication and informatics and is the backbone of networks. This network provides information in most of the various activities (Tawami, 2012, p. 6).

Intranet is a private communications network within an organization that uses available resources to distribute information. The Intranet uses browsers, websites, and web pages, which typically provide internal networks with e-mail, mailing lists, newsgroups, etc., and can be accessed only by members of the organization. It allows information to be provided to limited individuals within the Organization and the information is protected.

- Extranet: A private network that connects more than one organization to Internet technologies. This allows individuals outside the Organization to enter, for example, suppliers and distributors with limited access to the Organization's networks with which they deal. The purpose is to increase efficiency and reduce costs (Umukoro et al., 2016, p. 48).

C. Human resources: Humans use information technology, interpret information generated by the system, and take action. People, not information technology, make IT output meaningful and workable. It is a human activity that enables organizations to deploy information technology to achieve their goals (Sebastian & Dubravka, 2015, p. 4962). The human component is a vital part of information technology and without human resources information technology cannot achieve its objectives. Consisting of individual and organizational skills, experience, competencies and commitment (Soloviova & Danilovb, 2020:2).

Two types of human resources can be distinguished according to (Marakas & O'Brien, 2013, p. 15; Umukoro et al., 2016, p. 44; Bolkhwa & Mohamed Sharif, 2016, p. 46).

- Information systems specialists include systems analysts, programmers and operators called "intellectual capital in the system".
- End users: Individuals using the information technology or output they generate. In other



words, the vast majority of members of the organization deal between structure and the working environment such as accountants, salesmen, engineers, managers and consumers.

Digital content distribution

Marketing content is a marketing method to create and distribute valuable, appropriate and consistent content to attract and acquire a clearly defined audience with the aim of motivating customers to take profitable actions for the company (Ahmad & et al., 2016, p. 2).

(Kotler, et al., 2017) defines marketing content as "a marketing approach involving the creation and distribution of interesting content that is clearly appropriate and useful to a specific audience to create conversations about content.

1. Concept of digital content distribution:

The primary place for distribution in the marketing of digital content is Internet. It's the means by which we can deliver marketing messages in an effective, fast and friendly way. Marketers' interest in Internet comes from their international coverage, interaction, multimedia capacity and ever-growing number of users. Internet makes it possible to distinguish between services, products and marketing communications. It also facilitates contact with selected persons with similar interests. It affects the senses and purchasing decisions while giving the opportunity to reach a specific group of recipients. Companies that want to maintain their competitiveness have no choice but to pursue the changes brought about by Internet. However, it is necessary to emphasize here that companies can succeed in the market when they are able to properly combine traditional activities with the new opportunities offered by the development of contemporary means of communication, including the development of Internet (Świeczak, 2012, p. 134).

There are three main media channels that can be used to distribute content, owned, paid and acquired. For example newsletter, posters, pamphlets, any form of advertising in the newspaper, television or social media, and followers themselves. The latter point is interesting, with many applications and social media providing two main content distribution features, namely, the main channel where content will appear in the compendium of other people and be kept in the

account gallery; and the "story" option where any content would only be published for 24 hours. This is another aspect that the account holder must carefully observe. In addition, considering the best time to publish content is critical, such as when the highest activity traffic in the platform can increase views and engagement with followers. The account holder can verify his "gold hours" through the list of statistics (Putranto & Fajry, 2017, p. 4). Video publishing is a particularly common type of content distribution, but it also includes graphs with 96% success. Social networks such as Facebook and other paid search platforms prefer videos, as the participation rate is much higher. Currently, up to 55% of Internet users regularly consume video content, and the main challenge in the case of marketing content is the frequent emergence of new topics due to the emergence of new concepts and changing consumer interests. (Poradova, 2020, p. 3).

2. Importance of distributing digital content.

Finding effective ways to pack, distribute and amplify marketing content in sales and media channels is important for a number of reasons:

- a. **Better customer experience:** Multi-channel distribution of marketing content is key to improving the customer experience by involving customers in their preferred channels. It's difficult to offer custom Web experiences or to engage customers in social networks and streaming without having to say something useful.
- b. **Improved utilization of existing content assets:** Content distribution is an important way to increase the return on content asset investments by reusing content over the largest possible number of sales, marketing, media, and digital points of contact.
- c. **More content control:** Marketing managers use content distribution as a "hub" in the publishing process to better manage, target and track content performance.
- d. **Low cost and complexity:** The challenge of distributing marketing and sales content through an increasing number of client contact points adds significantly to the cost and complexity of content operations (*Content Distribution*).



DATA ANALYSIS

Descriptive analysis of study variables

1. Descriptive analysis of the IT variable

The results of the descriptive analysis of the IT variable reviewed in table (1) showed that the arithmetic mean exceeded all paragraphs of the

hypothetical mean measure of (3) (at the gradient of the Lickert scale), indicating the prevalence of all paragraphs in the researched faculties, and the results showed a relative reduction of the standard deviation, indicating consistency of the sample responses.

Table 1. Descriptive Analysis of IT Variable

Dimensions	Item	Mean	standard deviation
Software	PR1	3.8947	0.96026
	PR2	3.6184	0.96564
	PR3	3.7105	1.10533
Networks	NE1	3.9342	0.91412
	NE2	3.9342	0.88447
	NE3	3.9342	0.88447
Human Resources	RH1	4.0526	0.74645
	RH2	4.1974	0.65360
	RH3	3.7632	0.96427

2. Descriptive analysis of digital content distribution variable

The results of the descriptive analysis of the digital content distribution variable, reviewed in table (2), showed that the arithmetic mean exceeded all paragraphs of the scale for the hypothetical medium of

(3), (at the gradient of the Lickert scale). This indicates the prevalence of all paragraphs in the researched faculties, as well as the results of a relative reduction of the standard deviation, which indicates consistency of the sample responses.

Table 2. Descriptive Analysis of digital content distribution Variable

Dimension	Item	Mean	standard deviation
digital content distribution	CMA1	4.1184	0.72970
	CMA2	4.0816	0.63176
	CMA3	3.7368	0.85430

Source: SPSS output

Evaluation of structural model and hypothesis testing

The structural model is to test the correlation hypotheses and find path coefficients through which direct effects are measured, and extract the value of the coefficient of determination R^2 , which is used to determine the independent variable's interpretation of the approved variable.

First: Correlation relationship test:

This part includes the test of the main correlation hypothesis, as follows:

First main hypothesis: "There is a significant correlation between information technology and digital content distribution," and with regard to validating this hypothesis, table (3) on the correlation matrix showed the existence of a significant correlation between

information technology and digital content distribution, where the correlation coefficient was valued (.828) at a significance level (0.01), supporting the validity of the first main hypothesis. There are three sub-hypotheses:

- a. There is a significant correlation between software and digital content distribution:
Table (3), on the correlation matrix, shows a significant correlation between software and digital content distribution, with the correlation coefficient (.782) at a significance level (0.01), supporting the validity of the first substrate.
- b. There is a correlation and significance between networks, communications, Internet and digital content distribution:

Table 3, on the correlation matrix, shows a significant correlation between networks, communications, Internet and digital content distribution, where the correlation coefficient (811) was at a significance level (0.01), supporting the validity of the second sub-hypothesis.

c. There is a correlation and significance between human resources and digital content distribution:

Table 3, on the correlation matrix, shows a significant correlation between human resources and digital content distribution, with the correlation coefficient (754) at a significance level (0.01), supporting the validity of the third sub-hypothesis

Table 3. Matrix of correlation relationship between information technology and digital content distribution

		IS	CMA	CON	CA	OR
IS	Pearson Correlation	1	.749**	.760**	.810**	.828**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	80	80	80	80	80
CMA	Pearson Correlation	.749**	1	.889**	.842**	.782**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	80	80	80	80	80
CON	Pearson Correlation	.760**	.889**	1	.872**	.811**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	80	80	80	80	80
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	N	80	80	80	80	80
CA	Pearson Correlation	.810**	.842**	.872**	1	.754**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	80	80	80	80	80

Second: Second main hypothesis test

The second main hypothesis stated that "there is a significant impact relationship of information technology on digital content distribution." To test this

hypothesis, the structural model shown in figure (2), the results of which are reviewed in table (4), was constructed

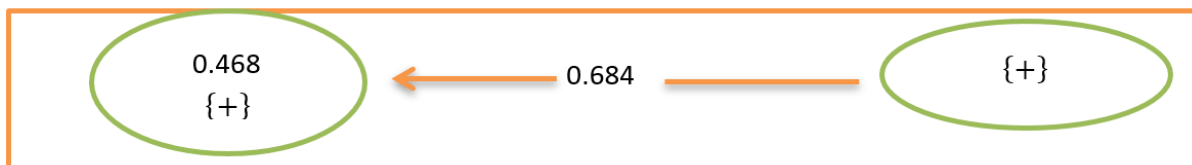


Figure 2. Structural model for the second main hypothesis test

Note: The numbers in the arrows represent the path coefficient, while the numbers in the circles represent the coefficient of determination R^2 , and the Source: PLS output

symbol [+] refers to the concealment of the paragraphs of the variable because they are not needed in evaluating the structural model.



Table (4) Results of the evaluation of the structural model of the second main hypothesis

Goodness of Fit SRMR	Hypothesis	Path	VIF	Path coefficient	t Value	p Value	Result	Effect Size f^2	coefficient of determination R^2
0.055	H5	IS→OR	1	0.684	13.294	0	Acceptance	1.115	0.468

Source: PLS output

Table (5) reviews the results of the HMR evaluation of the second main hypothesis, which showed that the SRMR of 0.055 meets the required goodness of fit standard of 0.760, which achieves the required t-values and p-values. This refers to the significance of the impact relationship. Therefore, the second main hypothesis was accepted, and the coefficient of determination R^2 was also reached.

80.46 which indicates that the independent variable explains the dependent variable in proportion (46%), the value is another factor not covered by the study.

Third: Criteria for evaluation of structural models

The criteria for evaluating structural models in the PLS-SEM model include four criteria, as shown in table 4.

Table 5. Partial Squares Modelling Standards PLS-SEM

Criteria	Acceptable value
Goodness of fit	SRMR 0.08 >
Evaluation of linear correlation	Variance Inflation Factor VIF > 5
Significance of Path coefficients	t value > 1.96; p value < 0.05
coefficient of determination R^2	0.25, 0.50, 0.75 indicate small, medium, large effect
Size of effect f^2	0.02, 0.15, 0.35 refer to small, medium, large effect

Source: Prepared by the researcher based on:

Hair, J., Hult, T., Ringle, C. & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM). Los Angeles: Sage.

1- Overall evaluation of goodness of fit

According to Hair, Hult, Ringle and Sarstedt (2017). there is a single reliable goodness of fit standard for the structural model of the PLS pathway, the Standard Mean Square Root (SRMR), since when its value is 0 it indicates an ideal match, and the acceptable value is when it is less than 0.08 (Henn).

2- Evaluation of linear correlation

Linear correlation indicates a high degree of correlation between two independent variables, measured by a variation amplification factor (VIF) that must be less than 5, according to Hair, Hult, Ringle and Sarstedt (2017).

3- Path coefficients

They refer to direct effects between variables and their standard values range from 1 + to 1 -, and as the path coefficient approaches one this indicates a strong positive relationship and vice versa, and the path coefficient is defined by calculating a t-value whose value must exceed 1.96 at a significance level of 0.05 (Hair et al., 2017, p. 195).

4- Coefficient of Determination R^2

It measures the independent interpretation of the dependent variable, with values ranging from 0 to 1, and to assess the results, Hair, Hult, Ringle and Sarstedt (2017) indicated that values of 0.25, 0.50, and 0.75 indicated weak, medium, and large values respectively (p. 171).

5- Effect Size f^2

Effect size shows the extent to which each dimension contributes to the composition of the coefficient of determination and to assess the results, Hair, Hult, Ringle and Sarstedt (2017) indicated that the values 0.02, 0.15, 0.35 indicate a small, medium, and large effect respectively (p. 158).

Fourth: Testing sub-hypotheses of the second main hypothesis

The researcher constructed the structural model shown in figure 3 for the purpose of testing the sub-

hypotheses of the second main hypothesis (H2.1, H2.2, H2.3,)), the results of which are reviewed in table 6

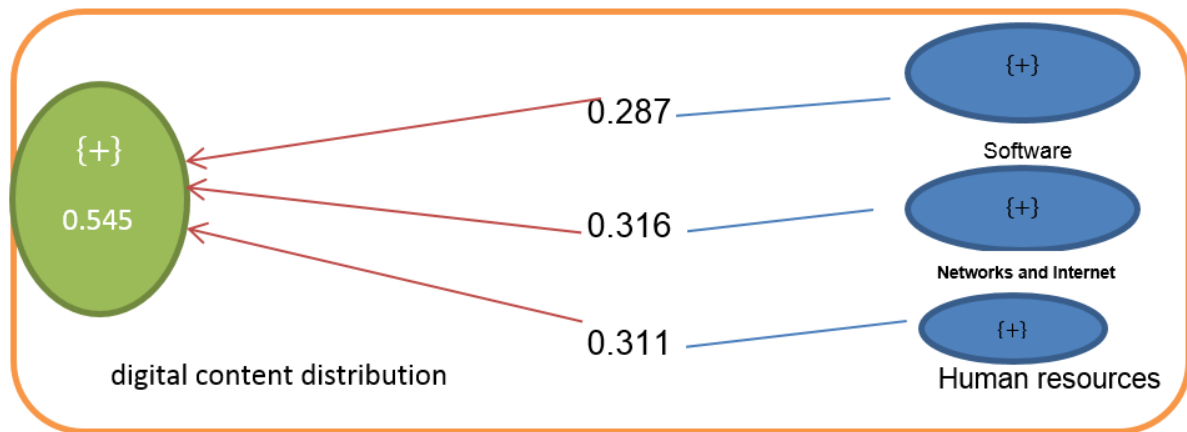


Figure 3. Structural model for testing sub-hypotheses arising from the second main hypothesis

Note: The numbers in the arrows represent the path coefficient and the numbers in the rotations represent the coefficient of determination and the symbol [+] refers to the concealment of the

paragraphs belonging to the variable because they are not needed in assessing the structural model.

Source: PLS output

Table (6) Results of the evaluation of the structural model of the sub-hypotheses of the second main hypothesis

Goodness of Fit SRMR	Hypothesis	Path	VIF	Path coefficient	t Value	p Value	RESULT	EFFECT SIZE f ²	determination coefficient R ²	adjusted R ²
0.060	H2-1	CMA→OR	1.347	0.278	3.848	0.009	Acceptance	0.089	0.545	0.539
	H2-2	CON→OR	1.76	0.316	6.039	0.012	Acceptance	0.084		
	H2-4	CA→OR	1.893	0.311	5.548	0.003	Acceptance	0.066		

Source: PLS output

Table (6) shows the results of the evaluation of the homologous model of the sub-hypotheses of the second main hypothesis, which showed that the SRMR index of 0.060 meets the standard required for goodness of fit and path coefficients for hypothesis II and III (H2.1, H5.2, H2.3) has achieved the required criteria of t and p values, indicating the significance of

these hypotheses and thus accepting the sub-hypotheses of the second main hypothesis, and the coefficient of determination R² has been reached. (0.54) This suggests that the Technoloega dimensions of information explain 54% of the factors that explain the digital content variables and the rest of the ratio represents factors not covered by the study.



CONCLUSIONS

1. There is a direct impact of information technology on digital content distribution, which demonstrates the need for attention to information technology, as increasing interest in it will enhance the activation of digital content distribution.
2. Information technology is a strategic decision that helps private colleges to improve their ability to keep up with sophisticated promotional tools and build market share in a highly competitive environment.
3. Digital content distribution reflects the aspirations of private colleges towards technology by matching work requirements with technological progress.
4. Information technology contributes to the acquisition by research colleges of high flexibility in digital content distribution and in responding to changes in the external environment.
5. The reliance of research colleges on keeping up with and using new technologies will contribute to improving their competitive advantage by meeting the needs and wishes of their current and potential clients and enabling them to publish distinctive content.
6. Digital content distribution enables college administrations to make appropriate decisions according to available data, and with the information available from comments on content, the researched colleges can achieve a competitive advantage and increase their market share.

RECOMMENDATIONS

After reaching a set of conclusions, recommendations related to the research variables that can be applied and benefited from by the administration of the studied colleges were built as follows:

1. Working to introduce modern technologies into the marketing process of the colleges researched to keep up with everything new.
2. The reality in which the research colleges exist requires them to carry out continuous customer analysis after distributing their digital content and to work towards meeting their future aspirations, thereby enhancing their ability to deal in advance with their expected needs and desires and to

make appropriate changes and pre-empt competitors.

3. The need to pay attention to the digital content distribution variable in research, as one of the intellectual trends in contemporary literature in electronic marketing and to highlight its impact on competitive advantage.
4. It is therefore up to the administration to clarify these aspects through training programmes, seminars and ongoing meetings.
5. Working to distribute online content to as many potential customers as possible to encourage them to deal with researched colleges.
6. The need to continue to raise awareness of the benefits and advantages of research colleges in responding to technological advances and to reward individuals who have a rapid response to them, which motivates and encourages them to do so by providing a supportive working environment and modern technological means and by working with precision and high speed to keep pace with a rapidly changing world.

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