

The relationship between Perceptual Mapping and Marketing Effectiveness in Private Universities in Egypt

Noura Said Ghataty ^{a,*} · Gamal Sayed Abdelaziz ^a · Doaa Fathy Abdelgawad ^a

^a Faculty of Commerce, Cairo University, Giza, Egypt

* *Corresponding author:* noura.abdrabo@gmail.com

Abstract

The aim of this study is to investigate the role of perceptual mapping in leveraging marketing effectiveness of universities in the higher education sector. This study employed a mixed method approach. Twelve semi-structured in-depth interviews were conducted with a diverse sample of owners and decision makers in private universities. This qualitative phase was then followed by a quantitative phase where 100 questionnaires were collected from decision makers in private universities in Egypt. The findings of this study highlight the positive impact of perceptual mapping on overall marketing effectiveness. Besides, the results confirm the positive relationship between dimensions of perceptual mapping (brand image, quality, and tuition fees) and dimensions of marketing effectiveness (profits, satisfaction) in private universities in the Egyptian context understudy.

Keywords

Perceptual mapping; marketing effectiveness; higher education

Article history

Received: 25 May 2023 · **Accepted:** 3 December 2023

1. Introduction

Perceptual mapping is one of the most significant contributions to the field of marketing research (Zhou & Wang, 2010; Iacobucci et al., 2017; Gigauri, 2019), as it is a powerful technique that attracts both academic researchers and professionals (Iacobucci et al., 2017; Gigauri, 2019). Nowadays, visualization of data in all its various forms is becoming more prevalent and popular than ever (Iacobucci et al., 2017), therefore, perceptual mapping techniques that convey information through visual and graphical diagrams have become essential for marketers. The word perceptual is derived from the concept perception (Malonda & Pangemanan, 2018). Accordingly, the term perceptual mapping reflects how this technique displays or maps consumers' perceptions and understanding of competing brand /or product /or service and their related attributes on a graph or diagram. According to Nestrud & Lawless (2010) perceptual mapping is defined as the visual representation of consumers' perceptions, opinions, and preferences measuring how specific attributes of an organization's products, brands, or services are positioned in consumers' minds in comparison to other relative competitors in the marketplace, on a graph with two or more dimensions (Malonda & Pangemanan, 2018; Gigauri, 2019). Different attributes can be used for a perceptual map, such as: quality, price, performance, reputation, packaging, location, brand name, brand awareness, features, promotion, brand image and others.

Perceptual mapping techniques help organizations to better understand how targeted customers perceive and position their offerings in relation to those of competitors in the marketplace (Kohli & Leuthesser, 1993; Nestrud & Lawless, 2010; Malonda & Pangemanan, 2018; Gigauri, 2019). Perceptual mapping is also useful for managers, decision makers' and marketers in different sectors because it helps in defining market segments (Gigauri, 2019; Said Ghataty et al., 2023), identifying market gaps and opportunities (Gigauri, 2019; Mina, 2020), identifying key attributes of products and services that influence consumers' choices and purchase decisions (Sinclair & Stalling, 1990; Gigauri, 2019), as well as monitoring emerging market trends and competitors. The findings obtained from these maps are crucial for decision makers in determining further actions regarding marketing strategies and positioning or repositioning decisions (Gigauri, 2019). Further, the results obtained from utilizing perceptual maps lead to an increase in profits and market share, having more steady growth, and gaining a better competitive advantage over rivals (Sezhian et al., 2014; Gigauri, 2019), all of which are aspects of marketing success that reflects the dimensions of marketing effectiveness in institutions.

Previous literature revealed that there is lack of theoretical, empirical, and experimental research in perceptual mapping field (Gigauri, 2019; Said Ghataty et al., 2023). Previous studies related to the use of perceptual maps were applied on positioning or repositioning a product or service or brand, in various fields (Rekettie & Liu, 2001; Najafizadeh et al., 2012; Sezhian et al., 2014; Yumusak et al., 2016; Baran, 2016; Iacobucci et al., 2017; Malonda & Pangemanan, 2018; Choudhury et

al., 2019; Ugurlu, 2019; Mina, 2020). Few studies were applied in higher education, whether in developed or developing countries (Handayani et al., 2014; Yousafzai et al., 2017). In the Egyptian context, no previous studies had been carried out, based on the researcher's knowledge to investigate the implementation of perceptual maps in higher education. There is only one study that conceptually discussed the relationship between perceptual mapping and marketing effectiveness directly and explicitly (Said Ghataty et al., 2023), upon the researcher's knowledge.

Perceptual maps have been applied in various industries, such as tourism, automobiles, mobile phones, hotels, transportation, cosmetics, restaurants, and in higher education in universities. Perceptual maps are a significant marketing tool for higher education institutions particularly in private universities, due to the aggressive competition among universities because of the increase in the number of private universities in Egypt. Accordingly, there is more competitiveness among private universities with the aim of attracting more applicants (Alhakimi & Qasim, 2014), increasing profits, revenues, and market share. Besides, the rapid changes of consumer preferences and changing market conditions lead to more aggressive competition among universities. Consequently, universities are encouraged to continuously rethink of their marketing, positioning, and differentiation strategies (Kayombo & Carter, 2017) to create strong distinctive image among rivals (Plungpongoan, Tiangsoongern, & Speece, 2014). Considering the previous discussion, there are pressing responsibilities for decision makers, managers, and marketers of private universities to utilize marketing mechanisms that effectively enable them to determine their positions, and to gain competitive advantages based on the perceptions of their target customers, both students and parents. This can be achieved through perceptual mapping.

Therefore, the theoretical and empirical importance of the current study stems from its contribution to enriching the marketing literature by providing an understanding for perceptual mapping techniques and its importance in increasing marketing effectiveness. From a theoretical point of view, the researchers propose a conceptual model for perceptual maps, their dimensions, and their relationship to marketing effectiveness in the Egyptian private universities. In addition, from an empirical point of view, the results of this study may contribute to help decision-makers understand and realize the importance of using and applying perceptual maps that reflect consumers' perceptions of how universities are positioned in their minds, which would help decision-makers to determine the most appropriate marketing and positioning strategies to enhance marketing effectiveness on the long-term and to succeed in competitive markets.

The main purpose of the current study is to investigate the relationships between perceptual maps and marketing effectiveness, for private universities in Egypt. Considering the prior discussion, the current study attempts to answer the main research question, which is "How does using perceptual maps enhances marketing effectiveness in private universities in Egypt?".

2. Perceptual Mapping

Perceptual mapping can be referred to as perceptual positioning mapping or positioning mapping (Kotler & Armstrong, 2005; Kayombo & Carter, 2017; Ugurlu, 2019; Gigauri, 2019). It is also known as spatial maps (Ugurlu, 2019). Previous studies suggested a variety of definitions for the term perceptual mapping. Perceptual maps are defined according to Sinclair and Stalling (1990) as a visual display of how consumers perceive and position an organization's products based on key attributes, which results in a graphical comparison of the organizations' products competitiveness against their rivals. Consumers' perceptions are represented by circles or dots on a graph whose axes is composed of two or three relevant dimensions representing the product attributes (Nestrud & Lawless 2010; Malonda & Pangemanan, 2018; Gigauri, 2019). Gower et al. (2010) describe perceptual maps as a graphical representation in which competing alternatives are plotted in Euclidean space (Gigauri, 2019; Ugurlu, 2019). Kotler & Keller (2012) define perceptual maps as visual or graphical demonstrations of consumers' perceptions and preferences, measuring how consumers position certain attributes of an organization's product, service, or brand in their minds in comparison to competitors (Kayombo & Carter, 2017; Gigauri, 2019). Recently, Prasad and Verma (2019) define perceptual maps as a technique for analyzing consumers' perceptions to generate maps or pictures that illustrate how attributes of a service are perceived by consumers and positioned in their minds. Despite the variety in the definitions of perceptual maps, they are all centered on how consumers position and perceive organizations' brands, products, or services based on attributes in comparison to rivals' offerings in the marketplace. Also, definitions of perceptual maps may differ in different contexts and according to the type of product or service.

Perceptual maps are important for marketing managers. Information generated from perceptual maps is displayed visually or graphically, allowing managers in organizations to easily transform it into action (Reketttye & Liu, 2001; Nestrud & Lawless, 2010; Gigauri, 2019; Mina, 2020). Marketers typically have two main goals in mind when undertaking a perceptual map. The first is to identify how their brands are positioned in relation to their competitors, and the second goal is to determine which attributes of their products are more likely to influence customers' decisions and choices (Kohli & Leuthesser, 1993; Gigauri, 2019; Said Ghataty et al., 2023). Perceptual mapping is a very useful tool for aiding marketing managers in decisions regarding product design, brand positioning, and customer value; along with helping in developing proper marketing strategies for organizations. (Gigauri, 2019).

Perceptual maps offer a unique ability to comprehend market structure through the analysis of complicated relationships among competitors, and to identify various criteria that are important to consumers when making purchasing decisions (Gigauri, 2019). Moreover, perceptual maps can be used to identify organizations' offerings (product or service or brand), its strengths and weaknesses compared to rivals' offerings. Also, it can help in identifying market opportunities for new products or

services or brands, or for repositioning current products or brands; based on consumers' viewpoints and perceptions (Hauser & Koppelman, 1979; Gigauri, 2019; Mina, 2020). This would benefit organizations that strive to satisfy their consumers through developing long-term relationships with them (Gigauri, 2019; Said Ghataty et al., 2023).

3. Perceptual maps dimensions in higher education

Perceptual maps are contextual and therefore they are multidimensional to consider any number of relevant attributes (Hauser & Koppelman, 1979; Sinclair & Stalling, 1990; Nestrud & Lawless, 2010; Yousafzai, Khan, & Khan, 2017; Malonda & Pangemanan, 2018; Gigauri, 2019). However, based on previous studies, only two or three key dimensions are required for perceptual mapping to replicate a more focused consumers' preferences and perceptions (Malonda & Pangemanan, 2018; Gigauri, 2019). Previous studies reported various dimensions or attributes to measure perceptual mapping for universities. In their empirical studies, Handayani, Bernadindwi, and Argo (2014) utilized tuition fees, educational quality, promotion, location, reference, facilities, and brand image. While Yousafzai et al. (2017) employed academic reputation, favorability, quality of social life, academic infrastructure, prices, extracurricular activities, academic life, campus attractiveness, and availability of majors. Previous empirical studies showed that there is no consensus among researchers to employ certain attributes to measure perceptual mapping as these dimensions differ across different countries, different consumers' preferences and different product and service types.

4. Marketing effectiveness

Organizations with high marketing effectiveness are close to their target customers, have a common set of values, show an external market orientation, and perform better compared to competitors (Nwokah & Briggs, 2017). Therefore, marketing effectiveness attracted interest of researchers and practitioners (Kayabasi & Mtetwa, 2016). There is consensus among various scholars that marketing effectiveness outcomes include customer loyalty, gaining competitive advantage, customer satisfaction, long-term growth, and extraordinary level of market orientation (Webster, 1995; Tuan, 2012; Faridyahyaie et al., 2012; Milichovsky & Simberova, 2015).

Marketing effectiveness refers to the extent to which an organization's marketing actions have contributed to achievement of corporate goals (Ambler et al., 2001; Solcansky & Simberova, 2010; Daukševičiūte et al., 2011; Wali, 2018). Whereas Mavondo (2004) describe marketing effectiveness as the organization's commitment to achieving both short-term goals and long-term goals that directly impacts businesses' financial performance indicators including growth rate, market

share, profits, and competitive edge (Solcansky & Simberova, 2010; Daukševičiūtė et al., 2011; Milichovsky & Simberova, 2015; Kayabasi & Mtetwa 2016; Wali, 2018; Said Ghataty et al., 2023). Kayabasi & Mtetwa (2016) claim that marketing effectiveness reflects an organization's ability to encounter short-term objectives that may positively affect organizations financial performance as increasing sales, enhancing profit margins, and developing new products. While, Solcansky & Simberova (2010) had described marketing effectiveness as enhancing the quality of expenditure to obtain better results in both the short-term and long-term periods (Faridyahyaie et al, 2012; Milichovsky & Simberova, 2015). Recently, Wali (2018) defined marketing effectiveness as the process that leads to continuous customers' value creation for corporate competitiveness. Further, marketing effectiveness has been studied in relation to various criteria of organizational success such as sustainability, long-term growth, stability, customer satisfaction, competitive advantage, sales growth, market orientation and successful new product introduction (Tuan, 2012; Nwokah & Briggs, 2017). Although the term marketing effectiveness has different definitions as presented in this section, those definitions confirm the various associations of marketing effectiveness to different organization's success aspects.

5. Marketing effectiveness dimensions in higher education

Previous literature revealed that researchers have different viewpoints of how marketing effectiveness is measured, therefore a variety of dimensions have been presented (Nwokah & Ahiauzu, 2008; Solcansky & Simberova, 2010; Daukševičiūtė et al., 2011; Milichovsky & Simberova, 2015; Wali, 2018). Marketing effectiveness dimensions include customer satisfaction and customer retention (Wali, 2018). Milichovsky & Simberova (2015) study suggests a measure for marketing effectiveness that include profits index and customers' index (i.e., customers' loyalty and customers' satisfaction). Solcansky & Simberova (2010) include both a financial indicator and non-financial indicator that reflect organizations overall performance to measure marketing effectiveness. Nwokah & Ahiauzu (2008) used four dimensions for measuring marketing effectiveness: the corporate, competitive, customers and exogenous factors (Daukševičiūtė et al., 2011; Nwokah & Briggs, 2017; Okechukwu & Adiele, 2019). Furthermore, Faridyahyaie et al. (2012) introduced a more comprehensive six categories measure for marketing effectiveness: the financial measures (profit and turnover), the competitive market measures (market share and promotional share), the consumer behavior measures (consumer loyalty, penetration and customers gained), the consumer intermediate measures (satisfaction, brand recognition and purchase intention), the direct customer measures (distribution level and service quality) and finally, the innovativeness measures (new launched products and their revenues). Together, these studies outline those different dimensions, both financial (e.g., profits) and non-financial (e.g., satisfaction), were utilized by researchers to measure marketing effectiveness.

6. Overview of studies and context

This study employs a mixed methods approach, utilizing two types of research design that includes: qualitative research design through semi-structured in-depth interviews with twelve decision makers in the Egyptian private universities understudy. Followed by quantitative research design through employing questionnaire for data collection purposes, as shown in table (1).

The research population is composed of all accredited private universities in Egypt. Egypt's population has increased to 105,109,777 according to (CAPMAS, 2023). The continuous increase in population lead to the continuous annual increase in the number of students enrolled in higher education, which increased from 2,600,000 in the academic year 2019–2020 to 2,700,000 in the academic year 2020–2021, according to (CAPMAS, 2023). This increase in student demand results in an increase in the number of private universities in Egypt in the last five years; reaching 45 universities according to Supreme Council of Universities (2023).

Our research focus on ten accredited private universities as follows: The American University in Cairo (AUC), German University in Cairo (GUC), The British University in Cairo (BUE), The Arab Academy for Science, Technology and Maritime Transport (AASTMT), October University for Modern Sciences and Arts (MSA), Misr University for Science and Technology (MUST), 6th of October University (6OU), Nile University (NU), New Giza University (NGU), and Misr International University (MIU). All universities are placed in Cairo to represent well the research population and to control any other variables related to university location and variances in consumer segments.

Table (1) Research Design

Study 1		Study 2
Objective	Perceptual mapping and marketing effectiveness as identified by university decision makers.	Examine the relationship between perceptual mapping and marketing effectiveness.
Method	Qualitative design.	Questionnaire based.
Data	12 in-depth interviews with private universities decision makers and owners.	100 questionnaires were collected from decision makers of 10 private universities in Egypt.

7. Exploratory study

The researchers conducted an exploratory qualitative study that aims to understand what constitutes positioning maps and marketing effectiveness in decision maker' minds, and identify their dimensions in higher education, and finally to formulate and develop hypotheses of the suggested associations between variables understudy for further quantitative investigation afterwards.

Employing a convenience sampling technique and based on principles of theoretical saturation (Strauss & Corbin, 1998), twelve semi-structured in-depth interviews were conducted with a diverse sample of owners and decision makers in private universities in Cairo, Egypt. Open-ended questions were prepared and used during the interviews. The average time for each interview was an hour. The content of these interviews was recorded then transcribed to reserve the original meaning. Then content analysis was employed. Analysis of data resulted from interviews revealed important insights about the degree of familiarity and understanding of the perceptual mapping concepts, as well as identifying the significance and the uses of perceptual maps. In addition to determining main dimensions for perceptual maps in the underlying context, along with determining whether these universities use and apply these maps to identify their positions and take decisions and build strategies based on its findings. Also, insights were revealed regarding how these universities position themselves in the marketplace relative to their rivals, and which marketing effectiveness dimensions are used by those private universities.

Based on content analysis of qualitative data, the researchers were able to determine some preliminary findings. Several decision makers in private universities are unfamiliar and unaware of the concept of perceptual mapping. There is a lack of knowledge about perceptual mapping uses, applications, and importance. On the other hand, those who are familiar with the concept are unaware of its significance in determining competitive advantages and identifying universities' positions among rivals. Accordingly, the researchers found that several decision makers in private universities are not applying perceptual maps to determine their position and enhance their strategies that would lead to improving level of effectiveness. Besides this, decision makers and owners of private universities occasionally use dimensions of perceptual maps in determining their positions without being aware of perceptual maps concept, because they don't have a full understanding of its overall view and the procedures that must be followed to apply perceptual maps properly, this led to the generation of an incomplete perceptual maps. Regarding perceptual map dimensions, several decision makers agreed on the significance of university brand image, quality, and tuition fees in positioning universities in the higher education Egyptian market. Additionally, both financial and non-financial measures were used to define the aspects of marketing effectiveness with particular focus on both profits and customer satisfaction. This section discussed the exploratory study and highlighted the main insights generated. These findings along with what have been discussed in the previous section permit the researchers to develop the research hypotheses and the conceptual model.

8. Hypotheses development

8.1 Perceptual mapping and marketing effectiveness

Perceptual mapping assists organizations in understanding their marketplace and gaining superiority over their rivals (Gigauri, 2019). Decisions and strategies developed and implemented based on perceptual mapping help organizations to achieve high market shares, revenues, profits, increased customers' satisfaction, loyalty, and retention (Sinclair & Stalling, 1990; Sezhian et al., 2014; Gigauri, 2019). Accordingly, dimensions of marketing effectiveness can be considered the outcome of perceptual maps (Said Ghataty et al., 2023).

Sezhian et al. (2014) quantitative study evaluated customer expectations and satisfaction in public transport company, in India. The purpose of the study was to determine the position of the three bus depots and to determine the best performing depot. Dimensions used for measuring perceptual maps were as follows: seating for handicapped, bus punctuality, seat comfort, lighting and entertainment, in-time issue of ticket, seating for elderly, cleanliness, driver behavior, issue of proper change, first aid facility, backup service during breakdown, provision for luggage, new fleet addition, obey traffic rules, stopping bus at correct place, conductor behavior, issue of proper ticket, and information to passengers. The results of perceptual maps indicate that each depot performs better upon certain dimensions or attributes that meets customers' expectation and satisfaction. The findings demonstrated that there is a relationship between determining and assessing depot performance and evaluating customers' satisfaction through utilizing the perceptual mapping technique. Another study employed for consumer products, Mina (2020) study focused on identifying brand positioning of hygienic products, such as shampoo, toothpaste, and bar soap, in the Philippines. The study findings provide evidence for organizations to utilize perceptual mapping to track their customers' perceptions, preferences, and levels of satisfaction to identify market gaps and develop effective positioning and repositioning strategies. Along the same lines we suggest that using perceptual mapping techniques would increase marketing effectiveness for private universities in Egypt. Therefore, we hypothesize that;

H1: There is a significant positive relationship between perceptual mapping and marketing effectiveness in Private Universities in Egypt.

8.2 Brand image and marketing effectiveness dimensions

One of the fundamental key factors in marketing is the brand image (Chen, 2016) which is primarily the latent theory behind the concepts of positioning (Malik, Naeem, & Munawar, 2012). Brand image is defined as the major driver of brand equity, which refers to consumers' overall perceptions and feelings toward a brand, and it has an influence on consumers' purchasing decisions (Zhang, 2015). The concept represents everything that consumers connect with the brand (Isoraite, 2018).

Brand image adds value in several ways, including assisting consumers in processing information, differentiating a brand, producing reason to buy, and giving good emotions and feelings (Malik et al., 2012). Rio, Vanquez, and Iglesias (2001) described brand image as impressions of a brand as expressed by the cluster of associations customers associated with the brand name in their memories. Robert (2015) claims that customers build opinions about a brand based on their interactions and experiences with the brand. These interactions can take different forms and are not always tied to purchasing or utilizing the product or service, as different consumers may have diverse perceptions of the same brand (Robert, 2015).

Brand image is vital in distinguishing one university among other universities in competitive market (Plungpongoan et al., 2014; Handayani et al., 2014; Cat et al., 2016). Handayani et al. (2014) show that private universities can effectively position themselves in the market and influence their target customers' choice and satisfaction through university reputation (i.e., a good brand image), accreditation, good learning facilities, and graduates who can easily find job opportunities. Thus, one of the main key successes for private universities is creating a superior brand image among competitors to develop and maintain universities reputation (Cat et al., 2016; Plungpongoan et al., 2014). This superior brand image helps the university to acquire a superior competitive advantage over rivals, and to have better access to financial sources to increase universities profits (Azoury et al., 2014; Cat et al., 2016). Few studies were employed in the higher education sector. While according to Prasad & Verma (2019) findings indicate that customers' satisfaction is a key factor of having a positive brand image, word-of-mouth.

H1a: There is a significant positive relationship between brand image and profit.

H1b: There is a significant positive relationship between brand image and satisfaction.

8.3 Quality and marketing effectiveness dimensions

Quality of a product or a service is vital for any business as one of the key benefits that consumers receive (Mina, 2020). Quality can be defined as the extent to which a product or service either meets or exceeds the expectations of the consumer (Ashraf, Ibrahim, & Joarder, 2009). Also, it is viewed as the value or the benefit that the consumer perceives in contrast to the money paid for a product or a service (Kundu, 2017). Different factors are used to assess the quality in higher education such as facilities available for teaching, teaching quality, and teaching content (Ashraf, Osman, and Ratan, 2016). Narang (2012) described characteristics of quality in universities based on physical facilities, academics, responsiveness, learning outcomes, and personality development which includes encouragement in sports and cultural activities. Whereas according to Lagrosen, Seyyed-Hashemi, & Leitner (2004) corporate collaboration, information and responsiveness, courses offered, computer facilities, campus facilities, teaching practices, evaluation of courses,

available library resources, and postgraduate studies are some determinants that reflect quality in higher education. Recently Kundu (2017) suggests administrative services, academic staff, library services, location, career prospects, infrastructure, curriculum structure, and web-based learning system as quality elements in universities. In their quantitative study applied on Cihan university, Raewf and Thabit (2015) provide evidence that there is a positive relationship between university's quality attributes and the level of customer satisfaction. Along the same lines we propose that higher university quality attributes would lead to higher marketing effectiveness (i.e. higher satisfaction and profits).

H1c: There is a significant positive relationship between quality and profit.

H1d: There is a significant positive relationship between quality and satisfaction.

8.4 Tuition fees and marketing effectiveness dimensions

The tuition fee is the price paid for education service received at universities (Mohd Amir et al., 2016). Typically refers to an obligatory charge that is collected from students to cover some parts of the overall fundamental costs of education (Maelah et al., 2012; Mohd Amir et al., 2016). Tuition fees are a primary factor that is considered when taking decisions related to university selection, because tuition fees provide insights about universities' positions and quality (Maelah et al., 2012; Shahini & Azemi, 2013). Our exploratory study revealed that tuition fees are an important attribute that determines the university's marketing effectiveness and to what extent customers (particularly parents) will be satisfied. Tuition fees are the main source of educational institutions' revenues and in turn profits. Therefore, we hypothesize that;

H1e: There is a significant positive relationship between tuition fees and profits.

H1f: There is a significant positive relationship between tuition fees and satisfaction.

9. Research Model

Based on the literature review and the results of the exploratory study, the researchers proposed this conceptual model that demonstrates the relationship between perceptual mapping as the independent variable and marketing effectiveness as the dependent variable. Also, this model illustrates the relationship between the three dimensions of perceptual mapping (brand image, quality, and tuition fees), and the two dimensions of marketing effectiveness (profits, and satisfaction).

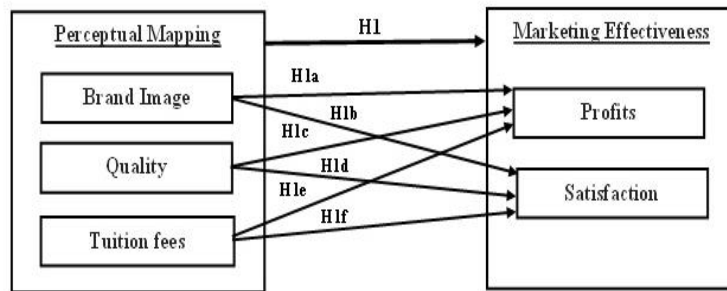


Figure (1) The Proposed Research Model.

10. Quantitative study methods

The researchers employed non-probability convenience sampling. In this study, the questionnaire was utilized as a tool for data collection and the researchers developed the items or scales included in the questionnaire list based on previous studies and the exploratory study. The questionnaire included a list of items that measure the research variables under study; where the perceptual mapping and its three dimensions were measured with (14) items, as for the first dimension brand image was measured with (6) items (Jonathan, 2001; Kayombo & Carter, 2017; Gutiérrez-Villar, Alcaide-Pulido & Carbonero-Ruz, 2022), the second dimension (quality) was measured by (5) items (Jonathan, 2001; Ashraf et al, 2009; Kundu, 2017; Kayombo & Carter, 2017; Najimdeen, Amzat, & Ali, 2021), and then third dimension (tuition fees) was measured with (3) items (Ashraf et al, 2009). Marketing effectiveness and its two dimensions were measured with (12) items, as for the first dimension (profits) was measured with (8) items (Ahmed Zebal & Goodwin, 2012) and other developed by the researchers, and then the second dimension (satisfaction) was measured with (4) items (Adikaram, Khatibi & Yajid, 2016; Najimdeen, Amzat, & Ali, 2021); these items were measured using five-point Likert scale which ranges between strongly disagree, disagree, neutral, agree and strongly agree.

The total number of distributed questionnaires was (150) questionnaire to decision makers in the Egyptian private universities under study. The number of respondents was (111), including (11) invalid questionnaires that were excluded. Therefore, the total valid sample size in our study is (100) questionnaires. Data was collected both online and offline. Questionnaires were distributed utilizing two methods: the first method is electronically through designing the questionnaire on Google forms, and then a QR code was generated for the questionnaire link. The second method was paper based through face-to-face communication with respondents.

To verify the face validity and the content validity of the measurement scale for this study, the questionnaire list was presented to five academic experts specialized in the marketing research field to review the questionnaire in terms of the relevance and

bonding of the items for the research topic, also the extent of its clarity, wording, and structure. Few comments were received and were taken into consideration in the final version of the survey.

11. Data analysis and results

11.1 Descriptive statistics of the sample characteristics

The frequency distribution tables and percentages were used to derive the number and percentage of responses from the respondents (decision makers) according to their demographic characteristics (gender, age, job position and private university name working in), and table (2) shows the results of this analysis of (100) questionnaires collected for the purpose of this study.

Table (2) Description of sample characteristics

Demographic Characteristics		Frequency	Percentage
1. Gender	Male	55	55%
	Female	45	45%
2. Age	Less than 25 years	0	0%
	25 to less than 35 years	5	5.0%
	35 to less than 45 years	53	53.0%
	45 to less than 55 years	32	32%
	55 years and more	10	10%
3. Private University name	The American University in Cairo (AUC)	10	10%
	German University in Cairo (GUC)	10	10%
	The British University in Cairo (BUE)	10	10%
	October University for Modern Sciences and Arts (MSA)	10	10%
	6th of October University (6OU)	10	10%
	Misr University for Science and Technology (MUST)	10	10%
	The Arab Academy for Science, Technology and Maritime Transport (AASTMT)	10	10%
	New Giza University (NGU)	10	10%
	Nile University (NU)	10	10%
	Misr International University (MIU)	10	10%
4. Job position	Top Management (University President – Vice Presidents – Deans)	0	0
	Middle Management (Vice Deans - Head of Departments)	45	45%
	Managers	53	53%
	Other	2	2%

11.2 Descriptive statistics of the study variables

Table (3) shows the descriptive statistical measures that were used to evaluate the independent variable (Perceptual Mapping) and its three dimensions (brand image, quality, tuition fees) and the dependent variable (Marketing Effectiveness) and its two dimensions (profits, satisfaction), to measure perceptions of decision makers in private universities understudy, and this was done as follows:

Table (3) Descriptive statistics for study variables

Variables	N	Min.	Max.	Mean	Std. deviation	Skewness	Kurtosis	P. Value
Perceptual Mapping	100	1	5	3.832	0.693	-1.773	2.794	0.009
Brand image	100	1	5	3.855	0.747	-1.678	2.426	0.028
Quality	100	1	5	3.850	0.776	-1.247	1.451	0.028
Tuition fees	100	1	5	3.793	0.748	-0.962	0.880	0.003
Marketing Effectiveness	100	2	5	3.901	0.739	-1.862	2.999	0.014
Profits	100	2	5	3.918	0.724	-1.826	2.992	0.032
Satisfaction	100	2	5	3.885	0.837	-1.442	1.983	0.035

The previous table (3) shows the following:

The mean value of independent variable (Perceptual Mapping) and its three dimensions (brand image, quality, tuition fees) is equal (3.832), against to standard deviation which is equal (0.693) and these are moderate values. Besides, the mean value for the three dimensions (brand image, quality, tuition fees) are equal (3.855, 3.850, 3.793) respectively, and the standard deviation is equal (0.747, 0.776, 0.748) respectively, which are also moderate values. These findings indicate moderate perceived values by decision makers for the independent variable and its three dimensions. Additionally, the importance of these findings was also proven in population through the P value which is equal (0.009) for the independent variable, and the P value for the three dimensions are equal (0.028, 0.028, 0.003) respectively, where all values are less than (0.05) and this confirms the validity and significance of the results.

The mean value of dependent variable (Marketing Effectiveness) and its two dimensions (profits, satisfaction) is equal to (3.901), against to standard deviation which is equal (0.693) and these are moderate values. Besides this, the mean value for the two dimensions (profits, satisfaction) are equal (3.918, 3.885) respectively, and the standard deviation is equal (0.724, 0.837) respectively, these are also moderate values. These findings indicate moderate perceived values by decision makers for the dependent variable and its two dimensions. Additionally, the importance of these results was also proven in population through the P value which is equal (0.014) for the independent variable, and the P value for the two dimensions

are equal (0.032, 0.035) respectively, where all values are less than (0.05) and this confirms the validity and significance of the results.

The data tend to be moderate as the skewness value for all dimensions of the independent and dependent variables ranged between (± 3) and the values of kurtosis ranged between (± 10); which means the data have a normal distribution.

11.3 Testing the validity and reliability

The validity was tested through the face validity, the convergent validity, and the discriminant validity. Additionally, this study relied on using Cronbach's Alpha and Composite Reliability to assess the internal consistency reliability. Besides, the value of both Cronbach's Alpha and Composite Reliability must be higher than (0.70) to determine and evaluate the quality of internal consistency of the study variable. Then, using Confirmatory Factor Analysis (CFA) to test the validity and reliability of constructs.

11.3.1 Measurement Model Assessment

To evaluate the measurement model, there are three main criteria which are Convergent Validity using the Average Variance Extracted (AVE), in addition to Cronbach's Alpha and Composite Reliability (CR) to measure the internal consistency reliability. As shown in Table (4) the three main criteria used and their results are as follows:

Table (4) the evaluation of measurement model assessment

Construct	No. of items	Validity	Internal Consistency Reliability	
		Average Variance Extracted (AVE)	Cronbach's Alpha	Composite Reliability (CR)
Perceptual Maps	14	0,571	0.909	0,831
Brand Image	6	0,527	0.796	0,768
Quality	5	0,511	0.808	0,802
Tuition Fees	3	0,568	0.740	0,773
Marketing Effectiveness	13	0,591	0.899	0,782
Profit	8	0,582	0.849	0,734
Satisfaction	4	0,549	0.776	0,779

The findings revealed that the Average Variance Extracted (AVE) utilized to test Convergent Validity of all research variables and dimensions had a value higher than (0.50) (Hair et al., 2017) indicating a high convergent validity for all items of the dimensions of the study. Additionally, the findings revealed that the reliability of all the constructs for all the variables and dimensions in this study was measured by Cronbach's alphas, and its value ranged between (0.740, 0.849), which is higher than

(0.7), indicating high consistency of answers. Besides, composite reliability (CR) had value ranged between (0.734, 0.830), which is higher than (0.70), confirming the internal consistency reliability of the construct.

11.3.2 Discriminant validity

The discriminant validity of the elements of the construct measures was confirmed by using the Fornell and Larcker method, as shown in table (5), where the numbers in grey highlight on the diagonal line represents the square root of the (AVE) for each construct and the numbers below the diagonal represents the correlations between each construct and the other constructs. It was found that the square root of (AVE) is greater than its' highest correlation value of any other constructs or dimensions, confirming the discriminant validity and the high consistency of the scale used in the study (Fornell and Larcker, 1981; Hair et al., 2017).

Table (5) The Correlation Matrix using the square root of AVE

Construct	Brand Image	Quality	Tuition Fees	Profit	Satisfaction
Brand Image	0.726				
Quality	0.613	0.715			
Tuition Fees	0.649	0.711	0.754		
Profit	0.664	0.710	0.735	0.763	
Satisfaction	0.713	0.676	0.742	0.698	0.741

11.3.3 Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) of the model was carried out using Structural Equation Modeling (SEM), utilizing the statistical analysis software program AMOS 25 on all items in the measurement model. The confirmatory factor analysis is used to test hypotheses related to the existence or absence of a relationship between dimensions and variables of the study and their underlying latent elements or constructs. In the light of the assumption of equivalence between covariance matrix of variables included in the analysis and the matrix assumed by the model, several indicators of the goodness of this fit are produced. Considering which the assumed model of the data is accepted or rejected, which is known as Goodness of Fit Model Indices, where this study had applied (6) measurements as shown in table (6).

Table (6) Goodness of Fit Model indices

Measure	Estimate	Threshold	Reference
CMIN	531.450	--	
DF	480	--	
CMIN/DF	1.107	Between 1 and 5	(Bollen, 1989)
CFI	0.967	>0.90	(Hu & Bentler, 1999)
GFI	0.982	>0.90	(Hu & Bentler, 1999)
RMR	0.057	<0.08	(Hu & Bentler, 1999)
RMSEA	0.033	<0.08	(Hu & Bentler, 1999)
PCLOSE	0.966	>0.05	(Hu & Bentler, 1999)

As shown in the previous table (6), the value of the CMIN/DF is equal (1.107), which is less than (3), and this indicates that the model has a good and acceptable fit. Besides this, the value of both GFI and CFI are equal (0.982, 0.97) respectively, which are both greater than (0.90), and this indicates that the quality of the model is acceptable. Moreover, the value of both RMR and RMSEA are equal (0.057, 0.033) respectively, which are both less than (0.08) indicating a good fit the whole entire model. Furthermore, the value of PCLOSE is equal (0.966), which is greater than (0.05) indicating a perfect fit. Thus, the finding revealed that there is a relationship between the variables and dimensions (Brand image, quality, tuition fees, profit, satisfaction) of the study and its latent components; and this means that the Model Fit Indicators have achieved the acceptable level.

11.4 Testing research hypotheses

11.4.1 Testing first main hypothesis

To prove the correctness of first main hypothesis (H1), which states that “There is a significant positive relationship between perceptual mapping and marketing effectiveness in Private Universities in Egypt”, and this is confirmed and validated by proving the correctness of six sub-hypotheses originating from it. Therefore, the researchers have calculated Pearson correlation coefficient between independent variable (Perceptual Mapping) and its three dimensions (brand image, quality, tuition fees) and dependent variable (Marketing Effectiveness) and its two dimensions (profits, satisfaction), additionally utilizing simple and multiple regressions models between them. The results are as follows:

11.4.1.1 Pearson correlation between independent and dependent variables

Table (7) shows that results of Pearson correlation coefficients, which revealed that there is a strong and positive relationship between independent variable (Perceptual Mapping) and dependent variable (Marketing Effectiveness) in Private Universities understudy in Egypt, which is equal (0.909) at the level of significance

equal (0.05). In addition to this, there is a strong and positive relationship between the three dimensions (brand image, quality, tuition fees) of the independent variable (Perceptual Mapping) with the first dimension (profits) of the dependent variable (Marketing Effectiveness) which are equal to (0.864, 0.810, 0.735) respectively, at the level of significance (0.05); and with the second dimension (satisfaction) of the dependent variable (Marketing Effectiveness) which are equal to (0.813, 0.776, 0.742) respectively, at the level of significance equal (0.05).

Table (7) Pearson Correlation Coefficient between Perceptual Mapping and Marketing Effectiveness and their dimensions.

Ser.	Perceptual Mapping dimensions	Marketing Effectiveness dimensions			
		Profit		Satisfaction	
		Correlation Coefficient	(P value)	Correlation Coefficient	(P value)
1	Brand Image	0.864	0.000	0.813	0.000
2	Quality	0.810	0.000	0.776	0.000
	Tuition fees	0.735	0.000	0.742	0.000
Perceptual Mapping		Correlation coefficient= 0.909		P value= 0.000	

11.4.1.2 Simple Regression between independent and dependent variables

To confirm and validate the positive strong relationship between independent variable (Perceptual Mapping) and dependent variable (Marketing Effectiveness) in Private Universities understudy in Egypt, through utilizing simple regression model between them. The results in table (8) revealed that the simple regression model between the independent and dependent variables are significant through the (P value) equal (0.000), which less than (0.05), and this is confirmed and validated by (F-Calculated) which is equal (465.31), which is greater than (F-Tabulated) equal (3.983), and this effect is assessed through coefficient of determination ($R^2 = 0.826$), which means that (82.6%) of the changes in dependent variable (Marketing Effectiveness) in Private Universities understudy in Egypt, returned to the changes in the independent variable (Perceptual Mapping) and these results proves the first main hypothesis.

Table (8) Regression Model between Perceptual Mapping and Marketing Effectiveness

Variable	Source	DF	SS	MS	F Calculated	P value
Perceptual Mapping	Treatment	1	44.646	44.646	465.31	0.000
	Error	98	9.403	0.096		
	Total	99	54.049			

11.4.1.3 Testing six sub-hypotheses emanating from the first main hypotheses

Additionally, to prove the correctness of the six sub-hypotheses (H1a, H1b, H1c, H1d, H1e, and H1f), originating from the first main hypothesis this can be done through applying (6) simple regression models between the independent variable (Perceptual Mapping) and its three dimensions (brand image, quality, tuition fees), and the dependent variable (Marketing Effectiveness) and its two dimensions (profit, satisfaction) as follows:

First, through applying (3) simple regression models between each one of the three dimensions (brand image, quality, tuition fees) of independent variable (Perceptual Mapping) with the first dimension (profits) of dependent variable (Marketing Effectiveness) in Private Universities understudy in Egypt. The results in table (9) revealed that the simple regression model between them is significant through the (P value) equal (0.000), which is less than (0.05), and this is confirmed and validated by (F-Calculated) which is equal (289.83, 187.54, 115.39) respectively, which is greater than (F-Tabulated) equal to (3.938), and the level of influence of these dimensions on the first dimension of the dependent variable was assessed through the coefficient of determination (R²) for the three dimensions are equal (0.747, 0.656, 0.540) respectively, and these results prove those three sub hypotheses (H1a, H1c and H1e).

Table (9) Regression Model between dimensions of Perceptual mapping and first dimension (Profits) of Marketing Effectiveness

Variable	Source	DF	SS	MS	F Calculated	P value
Brand Image	Treatment	1	38.822	38.822	289.83	0.000
	Error	98	13.127	0.134		
	Total	99	51.949			
Quality	Treatment	1	34.120	34.120	187.54	0.000
	Error	98	17.829	0.181		
	Total	99	51.949			
Tuition fees	Treatment	1	28.091	28.091	115.39	0.000
	Error	98	23.858	0.243		
	Total	99	51.949			

Second, through applying (3) simple regression models between each one of the three dimensions (brand image, quality, tuition fees) of independent variable (Perceptual Mapping) with the second dimension (satisfaction) of dependent variables (Marketing Effectiveness) in Private Universities understudy in Egypt. The results in table (10) revealed that the simple regression model between them is significant through the (P value) equal (0.000), which is less than (0.05), and this is confirmed and validated by (F-Calculated) which is equal (191.68, 147.90, 120.27) respectively, which is greater than (F-Tabulated) equal to (3.938), and the level of

influence of these dimensions on the second dimension of the dependent variable was assessed through coefficient of determination (R^2) for the three dimensions are equal (0.661, 0.601, 0.546) respectively, and these results proves those three sub hypotheses (H1b, H1d and H1f).

Table (10) Regression Model between dimensions of Perceptual mapping and second dimension (Satisfaction) of Marketing Effectiveness

Variable	Source	DF	SS	MS	F Calculated	P value
Brand Image	Treatment	1	45.527	45.527	191.68	0.000
	Error	98	23.276	0.237		
	Total	99	68.802			
Quality	Treatment	1	41.38	41.381	147.90	0.000
	Error	98	27.42	0.279		
	Total	99	68.80			
Tuition fees	Treatment	1	37.91	37.911	120.27	0.000
	Error	98	30.89	0.315		
	Total	99	68.80			

11.4.4.4 Relative importance of dimensions of perceptual mapping

From the above analysis of the six sub-hypotheses, the relationship between independent variable and dependent variable can be extracted according to the importance. As shown in table (11) the different influences of the three dimensions (Brand image, Quality and Tuition fees) of independent variable (Perceptual Mapping) on the two dimensions (Profits, satisfaction) of dependent variable (Marketing Effectiveness), as this can be determined through Standard Beta (β), coefficient of determination (R^2) and level of significance (P value), and the results were as follows:

Table (11) Standard Beta and coefficient of determination for the sub-hypotheses

Three dimensions of perceptual mapping and the first dimension (profits) of marketing effectiveness				
Independent Variable	Standard Beta (β)	P Value	Coefficient of Determination (R^2)	Rank
Brand image	0.837	0.000	0.747	1
Quality	0.756	0.000	0.656	2
Tuition fees	0.711	0.000	0.540	3
Three dimensions of perceptual mapping and the second dimension (satisfaction) of marketing effectiveness				
Independent Variable	Standard Beta (β)	P Value	Coefficient of Determination (R^2)	Rank
Brand image	0.907	0.000	0.661	1
Quality	0.833	0.000	0.601	2
Tuition fees	0.826	0.000	0.546	3

The previous table shows that the first dimension (Brand image) of the independent variable has the highest effect on the two dimensions (profits, satisfaction) of the dependent variable with (R2) equal (0.747, 0.661) respectively, followed by the effect of the second dimension (Quality) of the independent variable on the two dimensions (profits, satisfaction) of dependent variable with (R2) equal (0.656, 0.601) respectively, while the third dimension (Tuition Fees) of independent variable has the lowest effect on the two dimensions (profits, satisfaction) of the dependent variable with (R2) equal (0.540, 0.546) respectively.

11.4.1.3 Multiple Regression between dimensions of independent and dependent variables

Through applying the multiple regression model between three dimensions (brand image, quality, and tuition fees) of (Perceptual Mapping) as an independent variable, and (Marketing Effectiveness) as a dependent variable. Table (12) showed that multiple regression model between them is significant through the (P value) equal (0.000) which is less than (0.05) and this is confirmed and validated by (F-Calculated) equal (163.61) which is greater than (F-Tabulated) equal to (2.699). Additionally, the three dimensions of the independent variable have an effect on the dependent variable, this is because the (P value) equal (0.000, 0.000, 0.002) respectively, which is less than (0.05) and this is confirmed and validated by (F-Calculated) equal (40.96, 14.92, 9.93) respectively which is greater than (F-Tabulated) equal to (3.940), and this effect is assessed using the coefficient of determination ($R^2 = 0.836$), which means that (83.6%) of the changes in dependent variable in Private Universities understudy in Egypt returned to the changes in the three dimensions of independent variable and these result confirms and prove the main hypothesis and its six sub-hypotheses.

Table (12) Regression between three dimensions of Perceptual Mapping and Marketing Effectiveness

Source	DF	SS	MS	F Calculated	P value
Treatment	3	45.207	15.069	163.61	0.000
Brand Image	1	3.772	3.772	40.96	0.000
Quality	1	1.375	1.375	14.92	0.000
Tuition	1	0.914	0.914	9.93	0.002
Error	96	8.842	0.092		

12. Discussion

The purpose of the current study is to investigate the relationship between perceptual mapping and marketing effectiveness in Private Universities in Egypt. Our results confirm that there is positive impact for perceptual maps on university's marketing effectiveness. The three dimensions of perceptual mapping (brand image,

quality, tuition fees) have a positive and significant impact on the two dimensions (profits, satisfaction) of marketing effectiveness for private universities Egypt. The results of the current study are in line with previous research findings by Sezhian et al. (2014) that indicate there is a relationship between performance and evaluating customer satisfaction through perceptual mapping. As Mina (2020) argues that organizations should use perceptual mapping to help them in identifying market opportunities and gaps, as developing positioning or repositioning strategies, and tracking customers preferences and satisfaction levels. Additionally, the current study results are supported by literature that tactics based on perceptual mapping influence organizations' success in terms of gaining competitive edge, boosting profits, and improving consumers' perception and satisfaction (Hauser & Koppelman, 1979; Sinclair & Stalling, 1990; Sezhian et al., 2014; Gigauri, 2019).

As presented in the theoretical background, perceptual mapping is contextual: different contexts, different countries, different consumers' preferences and different products and service types. Therefore, there's no consensus about the dimensions used to measure perceptual mapping. The analysis of the sub hypotheses indicated that the first dimension of perceptual mapping which is the brand image has the highest impact on the two dimensions (profits, satisfaction) of marketing effectiveness followed by quality which has a moderate impact. Tuition fees have the lowest impact on the two dimensions of marketing effectiveness in private universities under study.

13. Research Implications

13.1 Theoretical Implications

The findings of this study contribute theoretically to marketing literature, particularly perceptual mapping, and marketing effectiveness research. The theoretical and scientific importance of this study was represented by proposing a conceptual model based on the findings of the exploratory study and literature review, which highlighted a scarcity of studies that determined the relationship between perceptual maps and marketing effectiveness upon the researcher's knowledge (Said Ghataty et al., 2023), as typically few studies had determined perceptual maps and its relation with the dimensions of marketing effectiveness without using the key term (Sezhian et al., 2014; Raewf and Thabit, 2015). Our study uniquely contributes through suggesting a proposed conceptual model that investigates the direct relationship between perceptual maps and its three dimensions (brand image, quality, and tuition fees) as an independent variable, and marketing effectiveness and its two dimensions (profits, and satisfaction) as a dependent variable. Accordingly, the findings of the current study make a unique contribution to bridging research gaps that were previously identified through proposing a theoretical framework for perceptual mapping and provides evidence for its significant role in

enhancing marketing effectiveness for organizations and particularly private universities.

Also most previous studies have applied perceptual maps in contexts such as mobile devices (Yumusak et al., 2016; Baran, 2016; Iacobucci et al., 2017; Malonda & Pangemanan, 2018), cosmetics and hygiene products (Najafizadeh et al., 2012; Mina, 2020), automobile (Rekettie & Liu, 2001; Choudhury et al., 2019), hotels (Ugurlu, 2019), transportation (Sezhian et al., 2014), where a limited number of studies were applied in higher education sector (Handayani et al., 2014; Yousafzai et al., 2017). Our study contributes to bridging this gap through the application of perceptual mapping in ten accredited private universities in the context of Egypt.

13.2 Managerial implications

Our findings provide a clear understanding of the concept of perceptual maps, its dimensions, and its significant impact on marketing effectiveness. Our findings provide decision makers and owners of private universities with clear understanding for how to utilize perceptual maps for effective positioning strategies. Also, using this technique can help decision makers to identify key attributes of their services and effectively position their universities among competitors, which in turn determines the most appropriate marketing strategies that may help them to differentiate themselves from competitors in such competitive market and achieve high level of marketing effectiveness. This may lead to acquiring a distinctive competitive advantage over rivals as well as an increase in market shares, which in turn leads to an increase in profits and revenues of universities. Therefore, decision makers need to be trained on how to use and apply this marketing technique because of its great advantages for the success of institutions and achieving a high level of marketing effectiveness.

14. Research Limitations and future research

The current study was restricted to studying the relationship between perceptual maps and marketing effectiveness. Further, this study was exclusively applied to only ten accredited private universities in Great Cairo in Egyptian. This research field of perceptual mapping in higher education needs further comparative studies in public and private universities that account for regional differences and compare the findings with each other; to assure whether the perceptual mapping dimensions used in this study and other applied studies are appropriate for use in these contexts. As a result, these studies can provide more valuable conceptual and empirical insights in the field of marketing research. We also suggest more marketing research studies to be conducted on different contexts, businesses, institutions, and organizations using perceptual mapping to determine key attributes of different products, and services, and to understand the perception of customers, to increase competitiveness.

A further limitation, the sample unit of this study was limited only to decision makers' which includes the owners of private universities, top managers, middle managers, and managers in the context under study. As, the current study relied on using non-probability convenience sampling technique. We suggest future research to include different perspectives of consumers and policy makers.

Furthermore, the assessment of marketing effectiveness for the first-dimension profits, in the current study was limited to using questionnaire forms, because it was difficult to obtain financial statements and data from Egyptian private universities under study. We suggest future studies to include real financial figures representing revenues and profits.

References

- Adikaram, C. A. N. K., Khatibi, A., & Yajid, M. (2016). The relationship between customer relationship management and customer satisfaction: A study on private higher education institutions in Sri Lanka. *International Journal of arts and Commerce*, 5(2), pp. 69-95.
- Ahmed Zebal, M., & Goodwin, D. R. (2012). Market orientation and performance in private universities. *Marketing Intelligence & Planning*, 30(3), pp. 339-357.
- Alhakimi, W. & Qasem A. (2014), An analysis of the use of marketing strategies by private universities in less developed world: the case of Yemen. *Intssemational Journal of Marketing Principals and Practices*, 1(1), pp.46-55.
- Ambler, T., Kokkinaki, F., Puntoni, S. & Riley, D. (2001), Assessing market performance: the current state of metrics. *London Business School*.
- Appiah-Adu, K. (1999) Marketing Effectiveness and Customer Retention in the Service Sector. *The Service Industries Journal*, 19(3), pp. 26-41.
- Ashraf, M., Osman, A. & Ratan, S. (2016), Determinants of quality education in private universities from student perspectives: a case study in Bangladesh. *Quality Assurance in Education*, 24(1), pp. 123-138
- Ashraf, M., Ibrahim, Y. & Joarder, M. (2009). Quality Education Management at Private Universities in Bangladesh: An Exploratory. *Journal of Educators & Education/Jurnal Pendidik dan Pendidikan*, 24, pp. 24-32.
- Azoury, N., Daou, L., & Khoury, C. E. (2014), University image and its relationship to student satisfaction-case of the Middle Eastern private business schools. *International strategic management review*, 2(1), 1-8.
- Baran, T. (2016). Positions of Mobile Phone Brands on University Students' Mind. *International Journal of Sustainable Economies Management (IJSEM)*, 5(1), pp. 18-28.
- Bollen, K. A. (1989). A new incremental fit index for general structural equation models. *Sociological methods & research*, 17(3), pp. 303-316.
- Cat, K., Kethuda, O. & Bilgin, Y. (2016). Positioning Strategies of Universities: An Investigation on Universities in Istanbul. *Education & Science/Egitim Ve Bilim*, 41(185), pp. 219-234.
- Chen, C. (2016), The Investigation on Brand Image of University Education and Students' Word-of-Mouth Behavior. *Higher Education Studies*, 6(4), pp. 23-33.
- Choudhury, M., Mishra, B. B., & Mohanty, P. K. (2019). Perceptual Mapping of SED and Brand Choice to Purchase Car. *Pacific Business Review International*, 12 (1), pp. 94-107.
- Daukševičiūte, I., Valainis, A. & Vilkaite, N. (2011), Conceptualization of the effectiveness of Marketing Tools. *Intellectual Economics*, 5(2), pp. 200-211.

- Faridyahyaie, R., Faryabi, M. & Bodaghi Khajeh Noubar, H. (2012), Identifying Marketing Effectiveness Metrics (Case study: East Azerbaijan`s industrial units). *Poslovna Izurnost Zagreb*.
- Fornell, C. & Larcker, D. (1981), Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, 18(1), pp. 39-50.
- Gigauri, I. (2019), Applying Perceptual Mapping Method for Successful Positioning Strategy. *International Journal of Management and Business Sciences*, 1(1), pp.14-23.
- Gower, J., Groenen, P. J., Van de Velden, M., & Vines, K. (2010). Perceptual maps: the good, the bad and the ugly.
- Gutiérrez-Villar, B., Alcaide-Pulido, P. & Carbonero-Ruz, M. (2022). Measuring a University's Image: Is Reputation an Influential Factor?. *Education Sciences*, 12(1).
- Hair, Jr., Matthews, L., Matthews, R. & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), pp. 107-123.
- Handayani, T., Bernadindwi, M. & Argo, J. (2014), Positioning in selecting private university in Jakarta. *International Journal of Business and Commerce*, 5(6), pp. 79-90.
- Hauser, J. & Koppelman, F. (1979), Alternative perceptual mapping techniques: Relative accuracy and usefulness. *Journal of marketing Research*, 16(4), pp. 495-506.
- Hoffman, K. D. & Bateson, J. E. (2016). *Services marketing: concepts, strategies, & cases*. Cengage learning.
- Hu, L & Bentler, P. (1999), Cutoff criteria for fit indexed in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), pp. 1-55.
- Iacobucci, D., Grisaffe, D. & DeSarbo, W. (2017), Statistical perceptual maps: using confidence region ellipses to enhance the interpretations of brand positions in multidimensional scaling. *Journal of Market Analysis*, 5, pp.81-98.
- Isoraite, M. (2018), Brand Image Theoretical Aspects. *Integrated Journal of Business and Economics*, pp. 116-122.
- Jonathan I., (2001), Higher education institution image: a correspondence analysis approach. *International Journal of Educational Management*, 15(6), pp.276-282.
- Kayabasi, A. & Mtetwa, T. (2016), Impact of marketing effectiveness and capabilities, and export market orientation on export performance: evidence from Turkey. *European Business Review*, 28(5).
- Kayombo, K. & Carter, S. (2017), Competitive Positioning of a Higher Education Institution in Zambia: The Case of ZCAS, *Journal of Education and Vocational Research*, 8(2), pp. 6-21.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of marketing*, 57(1), pp. 1-22.
- King, N. (2013), The Influence of Marketing on Profitability of an Organization. *International Journal of Marketing, Financial Services & Management Research*, 2(8), pp. 36-45.
- Kohli, C. & Leuthesser, L. (1993), Product Positioning: A Comparison of Perceptual Mapping Techniques. *Journal of Product & Brand Management*, 2(4), pp. 10-19.
- Kotler, P. (1977), from sales to marketing effectiveness. *In Harvard Business Review*, 55(6): pp. 67-75.
- Kotler, P. & Armstrong, G. (2005), *Principles of Marketing*, 11th Edition, Pearson Prentice Hall.
- Kotler, P. & Keller, K. (2012), *Marketing Management*, 14th Edition, Pearson Education.
- Kundu, G. (2017). Quality In Higher Education From Different Perspectives: A Literature Review. *International journal for quality research*, 11(1), pp. 17–34.
- Lagrosen, S., Seyyed-Hashemi, R. & Leitner, M. (2004). Examination of the dimensions of quality in higher education. *Quality assurance in education*, 12(2), pp. 61-69.

- Malik, M., Naeem, B. & Munawar, M. (2012), Brand Image: Past, Present and Future. *Journal of Basic and Applied Scientific Research*, 2(12), pp. 13069-13075.
- Malonda, A. & Pangemanan, S. (2018), Perceptual mapping of mid end smartphone using multidimensional scaling analysis (case: oppo, Samsung, xiamomi, and asus). *Journal EMBA*, 6(3).
- Maelah, R., Amir, A., Ahmad, A. & Auzair, S. (2012). Pricing for educational programmes at institutes of higher learning. *International Journal of Education Economics and Development*, 3(3), pp. 264-287.
- Mavondo, F. (2004), Learning orientation and market orientation. *European Journal of Marketing*, 39(11): pp. 1235–1263.
- Milichovsky, F. & Simberova I. (2015), Marketing Effectiveness: Metrics for Effective Strategic Marketing. *Inzinerine Ekonomika -Engineering Economics*, 26(2), pp. 211-219.
- Mina, C. (2020), Brand Positioning of Hygienic Products Using Perceptual Mapping Technique. *SSRG International Journal of Economics and Management Studies (SSRG-IJEMS)*, 7(2), pp. 150-158.
- Mohd Amir , A., Md Auzair, S., Maelah, R. & Ahmad, A. (2016), Pricing for higher education institutions: a value-based approach. *International Journal of Educational Management*, 30(6), pp. 929-940.
- Najimdeen, A., Amzat, H. & Ali H. (2021). The impact of service quality dimensions on students' satisfaction: A study of International students in Malaysian Public universities. *IIUM Journal of Educational Studies*, 9(2), pp. 89-108.
- Najafizadeh, N. S., Elahi, M., Moemeni, A., & Lotfi, Z. (2012). A model for brand positioning of hygienic products using the most effective factors on competitive position and perceptual map technique. *African Journal of Business Management*, 6(27), pp. 8102- 8117.
- Narang, R. (2012), How do management students perceive the quality of education in public institutions?. *Quality Assurance in Education*, 20(4), pp. 357-371.
- Nestrud, M. & Lawless, H. (2010). Perceptual mapping of apples and cheeses using projective mapping and sorting. *Journal of Sensory Studies*, 25(3), pp. 390-405.
- Nwokah, N. & Ahiauzu, A. (2008), Managerial competencies and marketing effectiveness in corporate organizations in Nigeria. *Journal of Management Development*, 27(8), pp. 858-878.
- Nwokah, N. & Briggs, J. (2017), Internal Marketing and Marketing Effectiveness of Hotel Industry in Rivers State. *Journal of Human Resource and Sustainability Studies*, 5, pp. 238-257.
- Okechukwu, A. & Adiele, K. (2019), Psychic distance and international marketing effectiveness of fast-moving consumer goods of multinational companies in Nigeria. *African Journal of Hospitality, Tourism and Leisure*, 8(1), pp. 1-20.
- Plungpongoan, J., Tiangsoongern, L. & Speece, M. (2014), University Social Responsibility and Brand Image of Private Universities in Bangkok. *12th EBES Conference – Singapore*, pp. 1668-1690.
- Prasad, R. & Verma, S. (2019), Industry - Institute Perceptual Map (PM) and Management Students' Satisfaction Index (MSSI): A Road Map for Academic Excellence. *Indian Journal of Management*, pp. 21-30.
- Rachim, T. (2016). Higher Education Strategic Analysis based on Perceptual Mapping of Prospective students in Bandung. 8th Widyatama *International Seminar on Sustainability (WISS 2016)*, Widyatama University, pp. 5-8.
- Raewf, M. & Thabit, T. (2015), The Student's Satisfaction Influential Factors at Cihan University, *International Journal of Advanced Research in Engineering and Management (IJAREM)*, 1(2), pp. 63-72.
- Rekettye G. and Liu J. (2001), Segmenting the Hungarian automobile market brand using perceptual and value mapping. *Journal of Targeting, Measurement and Analysis for Marketing*, 9, pp. 241–253.

- Rio, A., Vazquez, R. & Iglesias, R. (2001). The effects of brand associations on consumer response. *Journal of consumer marketing*, (18)5, pp. 410-425.
- Robert, B. E. (2015). Consumer Response to Negative Publicity: The Moderating Role of Commitment. *Journal of Marketing Research*, 3(7), pp. 13-21.
- Said Ghataty, N., Sayed Abdelaziz, G., & Fathy Abdelgawad, D. (2023). Studying the relationship between Perceptual Mapping and Marketing Effectiveness. *المجلة العلمية للدراسات التجارية والبيئية*, 14(1), pp. 443-471.
- Sezhian, V., Muralidharan, C., Nambirajan, T. & Deshmukh, S. (2014), Attribute-based perceptual mapping using discriminant analysis in a public sector passenger bus transport company: A case study. *Journal of advanced transportation*, 48, pp.32–47.
- Shahini, B. & Azemi, Y. (2013). Challenges of Tuition fee's decision: Private Universities case in Kosovo. *Romanian Economic Journal*, 16(50), pp. 87-100.
- Sinclair, S. & Stalling, E. (1990), Perceptual Mapping: a Tool for Industrial Marketing: a Case study, *Journal of Business & Industrial Marketing*, 5(1), pp. 55-66.
- Solcansky, M. & Simberiova, I. (2010), Measurement of marketing effectiveness. *Economics and Management*, 15, pp.755–759.
- Strauss, A., & Corbin, J.M. (1998). *Grounded theory in practice*. London: SAGE Publications Inc.
- Tuan, L. (2012), Marketing effectiveness and its precursors. *Asia Pacific Journal of Marketing and Logistics*, 24(1), pp. 125-15.
- Ugurlu, K. (2019), Use of Perceptual Maps in the positioning strategies of the accommodation facilities. *Journal of Social And Humanities Sciences Research (JSHSR)*, 6(33), pp. 495-509.
- Wali, A. (2018). Customer Relationship Management and Marketing Effectiveness: A Comparative Consumer Study. *Paradigm*, 22(2), pp. 101-124.
- Webster, C. (1995), Marketing culture and marketing effectiveness in service firms. *Journal of Services Marketing*, 9(2), pp. 6-21.
- Wei, C. & Ramalu, S. (2011), Students satisfaction towards the university: does service quality matters?. *International Journal of Education*, 3(2), pp. 1-15.
- Yousafzai, M., Khan, M. & Khan, U. (2017), Positioning of Private Sector Business Schools in Khyber Pakhtunkhwa: A Multidimensional Positioning Study. *Journal of Managerial Sciences*, 11(1), pp.51-69.
- Yumusak, T., Yilmaz, K. & Gungordu, A. (2016), Perceptual Maps of Smart Phones with Multi-dimensional Scaling Analysis. *International Journal of Research In Social Sciences*, 6(5), pp.40-44.
- Zhang, Y. (2015). The Impact of Brand Image on Consumer Behavior: A Literature Review. *Open Journal of Business and Management*, 3, pp. 58-62.
- Zhou, L. & Wang, W. (2010), Local University Students' Perceptual Map of a Destination Brand Shaoxing City in China. *Journal of Chinese marketing*, 3(2), pp. 72-78.
- Central Agency for Public Mobilization And Statistics (CAPMAS), 2013, <https://www.capmas.gov.eg/>
- Supreme Council of Universities (SCU), 2023, <https://scu.eg/>