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The effectiveness of Cialdini's principles on persuasion in digital marketing (A case study of Iran's furniture industry)

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Abstract

In order to attract customers choosing a digital marketing approach in business has become an inevitable issue. Through the persuasion principles of Cialdini psychology, many companies are trying to persuade visitors to choose and use their products or services. Despite the frequent use of customer persuasion psychology principles in this marketing approach, little information is found in the academic literature about the effectiveness of these principles on consumer response in digital marketing. The purpose of this study is to investigate whether the use of Cialdini's six principles of persuasion is effective on consumers' reactions to furniture digital marketing. The results indicate the significant effect of these principles in convincing customers of digital marketing in the furniture industry. Therefore, one of the effective ways to attract customers in digital marketing is to pay attention and apply these principles in the production and presentation of content in this marketing method. Persuading people to choose a product in the furniture industry by using persuasion principles requires observing the aspects of caution because the inappropriate and false use of these principles can have a negative and harmful consequence, especially the principle of scarcity, although it is the most effective, but in some cases suspicion It is going to have a negative impact on decision making. However, this effect was only observed for this group of participants. Therefore, to measure the effectiveness of persuasion principles in digital marketing based on Cialdini principles in different fields and to categorize more products, wider research is needed.

Keywords: Cialdini principles, digital marketing, persuasion
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1 Introduction

Today's attitude and thinking of companies towards marketing has gone through many changes and transformations compared to the past. Digital technologies have penetrated into economic processes and social development and its consequences have a significant impact on the business of companies. The basis of Internet services and emerging information technologies are able to create a kind of revolution in different dimensions in addition to business by

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interfering in daily life [27]. So that nowadays the widespread acceptance of these technologies in the world has significantly changed the ways of interaction between marketers and consumers.

By deploying various digital and information and communication platforms and tools in this area (such as smartphones, social media, mobile applications, electronic billboards and other digital interactive structures), organizations can benefit from objective, relational and interactive marketing techniques with open eyes. compete more [6].

Companies active in the commercial field continuously allocate significant costs to advertising in order to attract and convince customers. However, the results of many studies show that simply allocating significant costs for this purpose does not lead to optimal results [29].

The use of different advertising methods compared to competitors is a step to create a competitive advantage and guarantee the success of marketing strategies [28]. On the other hand, researchers investigate the reasons for the success or failure of a commercial organization, several factors such as economic, political, and social. have explored marketing and the results of these researches have also been very favorable, but especially in internal studies, since the principles of psychology, this issue has been less discussed. This is important, the present study examines Cialdini's principles of persuasion as an important part of the components of persuasion psychology.

What is clear about these shortcomings is that most of the time, designers of various digital platforms such as website designers use designs based on previous experiences, personal taste, or customer taste, and are unaware and oblivious to the undeniable influence of the principles of psychological persuasion. Therefore, there is the issue of what psychological principles can marketers use to influence visitors so that visitors choose a specific product or service from their online store?

A proposal for this purpose is Cialdini's set of principles of persuasion with six components of reciprocity, commitment and agreement, social approval, credibility, rarity and likability [3]. It is in digital marketing.

In the field of marketing, the concept of effectiveness includes various dimensions, such as evaluating the role of commercial advertising in the success of a company [20] and refers to a process that optimizes the conversion rate of various marketing funnels from the moment of entry to loyalty. Usul Cialdini in the digital marketing of the furniture industry in the direction of persuasion as an important part of the marketing funnel has made an evaluation model.

Also, this study tries to state that Cialdini's principles of persuasion are involved in the effectiveness or lack of content in digital marketing and are able to intervene in the expansion of the consumer society of products or services in digital marketing. And their application in the content of offering products or services in digital marketing. It has a considerable effect on their effectiveness. To evaluate this purpose, a questionnaire made by the researcher based on these principles was used to find the answer to these questions, how does the application of the persuasion principles of Cialdini psychology lead to greater effectiveness in persuading customers in digital marketing in the furniture industry. And this effectiveness is more obvious in which of the six principles?

2 Theoretical literature and research background

Persuasion refers to influencing people's beliefs, behavior and opinions in a specific way [10]. So far, many techniques have been proposed in the field of persuasion in order to influence people to behave in a certain way. However, research has shown that there are six universal principles of persuasion that describe how people may influence others [4]. These six principles of persuasion include: principle of reciprocity, commitment and agreement, social proof, credibility, scarcity. And there is liking. Of course, recently, Dr. Sial Dini has added the seventh principle of persuasion called unity or integrity to it. This principle is related to the common identity between the persuader and the person being persuaded [3]. Persuasion messages or techniques used by marketers or people can be related to one of these six principles stated by Dr. Cialdini. And take advantage of its advantages in digital marketing.

2.1 The first principle of reciprocity

According to this principle, people consider themselves obliged to compensate for the kindness of others, even though such work is not necessary. An example of this can be compensating an invitation, which is optional, but the psychological power of this principle makes a person to compensate the invitation in any situation. The feeling of gratitude for any favor, no matter how brief, can be so powerful that even after a long time, the "obliged" person is eager to repay the favor and host more than expected. The effect of this principle is rooted in the necessity of sharing for the survival of society.

2.2 The second principle of commitment and agreement (compatibility)

The principle of compatibility states that people want to behave in a fixed way and the probability of them being with something that they already have a commitment to is much higher, even if they have doubts about it. An example of this issue can be seen in political or religious issues [3]. usually people stick to the decisions they have already made without any reasoning. The person convinces himself that the decision he made is correct. This is directly caused by the social influence. People think that if a person permanently changes his opinion or has doubts in his decisions, it will reduce social acceptance and respect, so he supports the decision he has already made [25].

2.3 The third principle of social proof or approval

Based on this principle, people tend to do what others do, or in other words, people tend to imitate. An example of this can also be seen in the social environment. Paying attention to the opinions of others in online shopping is a clear example of this principle. This principle indicates that people look for clues about how to act, think and feel, especially in ambiguous situations. and uncertain, seriously rely on other people [4]. In other words, people tend to follow the opinions and behaviors of others who are similar. Many clues to the blind behavior of people in the social sphere can be found in this topic of psychology.

The principle of social proof can lead people in a certain direction because of what others are doing, which in turn reduces confidence among people because it emphasizes the fact that many other people have made the same choice. For example, other people's positive comments about a new movie may serve as a "clue" of social proof. Because if many others are positive about a new movie, you are more inclined to watch that movie. As a result, marketers use the principle of social proof to let people know that a product is a "best seller" or "very popular" by displaying positive product reviews [17]. Social proof and persuasive tools are used in many *e*-commerce websites and applications to persuade the online shopper to make a purchase.

2.4 The fourth principle of credit (authority)

People tend to be influenced by authorities (e.g. professors, doctors) with expert opinion on certain matters in their professional field. In other words, people trust the information of a trusted person more. The use of expert advice on products in that field is an example of this. Compliance with the advice of authority figures has always had practical and real benefits for us. It is logical to imitate people whose positions indicate superior access to information and power. In general, people are considered experts because of their knowledge and credibility, and these two aspects are not something that can be understood by just looking at the person. However, what can be paid attention to first of all is the appearance.

A title is the most difficult and yet the easiest symbol of power and prestige, because it takes years of effort and practice and success to acquire it, while it may happen to someone who has done none of these efforts with just a tag of respect. Natural is a more tangible symbol compared to the title. Whether it is the uniform of a policeman, a doctor, or a formal jacket. When a person wears this lias, authority and prestige come to him, while this prestige is elevated when it is combined with items such as a luxury car or jewelry (COOMBS-HOAR).

2.5 The fifth principle of scarcity

This principle states that the value of opportunities increases for people if they become scarce. From the psychological point of view, the more rare something or someone is, the more interest in it increases, and the more abundantly available, people's behavior is more neutral towards it [19]. The effect of the principle of scarcity becomes stronger when the object, action or information suddenly becomes unavailable, or when the competition for its acquisition is more intense. This principle can be used in many cases such as products, services, markets, and customers. For example, based on psychological preferences, when selecting a candidate for a job, priority is given to graduates of an elite university. The logic behind this is that a graduate of a top university is considered a rare candidate, while this may make him an employee. Better never change. [25]. A more concrete example related to the principle of scarcity can be seen about some food items during the outbreak of the Covid-19 disease, when items such as ginger and lemons were in high demand and their prices increased in an unusual way.

2.6 Principle of liking or (loving)

Naturally, we like people who like us. The liking principle states that people are more likely to say yes to a request from someone they like. This principle includes three components including physical attractiveness, similarity and praise. A cognitive orientation known as the hall effect causes a viewer's general feeling of a person, company, or product to affect his feelings and thoughts. For example, a person's physical attractiveness may make him seem kind and intelligent in the mind of another person who is attracted to him. to do Another reason why people are liked by others is similarity. These similarities can include mental background, common lifestyle, political views and personal characteristics.

The third component of the reasons for liking refers to praise. Research has shown that praising and being influenced by it is more of a cultural phenomenon than a cognitive orientation.

2.7 Principle of unity

Having a common sense of identity can play a major role in persuading the audience. Dr. Sial Dini added this principle to his list of principles in 2016 and explained that it does not mean simple similarities, but when people's values match and agree. That is, when the audience says to themselves, "He is also a member of us", instead of saying "He is similar to us".

2.8 Fogg

Another form of persuasion that is widely used today is PSD or persuasive system design model [8].

This model offers unique persuasive and personalized techniques to the online customer. Eleven rules have been formulated by Fogg that will enhance the customer experience on the one hand and increase sales conversion on the other hand. Reduce, adapt, personalize, self-monitor, stimulate, practice, praise, reward, remind, suggest, and social roles. This form of personalization for the customer is still used today [23]. Fogg believed that human behavior (factors, motivation, model) is the product of three specific behaviors: motivation, ability, and stimulus. This design is persuasively designed.

According to Fogg, in order to perform a target behavior, a person must (1) have sufficient motivation, (2) have the ability to perform the behavior, and (3) be stimulated to perform that behavior. These three factors must happen at the same time, otherwise the behavior will not happen. FBM is useful in analyzing and designing persuasive technologies. It also helps teams work effectively together because the model gives people a common way of thinking about behavior change.

2.9 Knowledge of persuasion

People in the society are constantly and daily exposed to a mass of persuasive messages from digital tools and media. By increasing the level of people's knowledge and people's access to information sources and trainings, people's knowledge about the principles and efforts and techniques of persuasion is developed. Therefore, the increase of this knowledge causes consumers to be suspicious about the motivation of marketers, and the result of this issue is to create doubts and doubts about advertising messages and the association of deceptive actions in the minds of consumers by marketers [9]. The increase in consumer knowledge in this field increases the resistance of individuals against persuasion efforts and reduces its effect on the mind of the audience.

2.10 Conditions of uncertainty

Uncertainty can be considered as the condition of having incomplete information about a subject. Researches have shown that conditions of uncertainty have a negative effect on consumer purchase intention [24].

Uncertainty refers to the degree to which the future conditions of the environment cannot be accurately predicted [21]. There are many factors that lead to the creation of conditions of uncertainty and can be discussed in the form of various indicators. Some of these indicators include non-economic factors such as political crises, wars and unfavorable environmental conditions, and economic factors such as current income and expected future income of individuals and changes in expected growth, predictive power and sensitivity of individuals to economic indicators [16] Uncertainty to the seller and Uncertainty to the product.

The problem of not trusting the seller shows up when the buyer is unable to monitor the seller's behavior and is not able to evaluate the seller's true characteristics and is hesitant to predict whether the seller is honest or looking for

one-sided opportunistic use. In this regard, increasing trust factors Za is an efficient lever in helping the seller. The problem of product uncertainty appears when the consumer has doubts in evaluating the features and authenticity of the product and its performance [21].

2.11 Research background

The following table 1 presents some of the studies carried out on the topic of the research:

Table 1: Research background

Results	Title	Author and year
The theory of religious fluid persuasion is universal and can be seen everywhere regardless of the economic or political situation of countries, but the cultural background determines the level of people's readiness to follow this religious fluid principle.	The effect of cultural differences on the principle of religious fluid validity	Katherine Coombs [5]
The results show that there is a significant relationship between personality traits and religious fluid persuasion strategies.	The influence of individual differences on persuasion strategies	Alkis and Tashkay Tamizhel [2]
The results of this research show that the persuasiveness of message types depends on the domain, and when studying the persuasiveness of message types, in addition to the principles of religious fluid persuasion, more detailed reasoning schemes should be considered.	Development of a scale to measure perceived persuasion	Jacob and Johnson [15]
The results of this research show that the persuasiveness of message types depends on the domain, and when studying the persuasiveness of message types, in addition to the principles of religious fluid persuasion, more detailed reasoning schemes should be considered.	The principles of persuasion in social engineering and their use in phishing	Ferreira et al. [7]
The results of this research show that: 1) Conscientious people are more prone to commitment and mutual behavior, but less prone to love. 2) High agreeableness are more prone to authority, commitment and love. 3) Low agreeableness are more prone to authority, consensus and liking.	Investigating the effect of personality traits on Cialdini's persuasive strategies	Oyobo et al. [22]
he results of this research show that while we can distinguish the criteria of perceived sensitivity between unity and social proof along with commitment, scarcity and reciprocity, we cannot obtain these criteria for liking and favoring.	Examining measures of susceptibility to persuasion	Vargis et al. [26]
The results of this study indicated that participants' sensitivity to persuasive cues can be measured and is related to their compliance.	Individual differences in susceptibility to persuasion	Kaptin et al. [18]

3 Conceptual model of research

It is desirable that research studies are presented in the form of a conceptual framework, and based on that, the explanatory structure of hypotheses is introduced. In addition, this framework can be used as a suitable method to organize research results [1]. According to the problem of this study and the proposed theoretical foundations, the conceptual model of the research is introduced in the form of the following image.

In figure 1, according to the hypothesis of the research, which believes that the application of Cialdini principles in the digital marketing of the furniture industry helps to convince the customers, the conceptual model was designed as follows.

In this model, the principles of religious fluid persuasion have been evaluated in six dimensions and two moderating variables. Among the reasons for designing a conceptual model is the ease of understanding the research problem and the design of questionnaire items. In the design and formulation of the questionnaire, which was discussed in the research method section, it is necessary to pay attention to the design of questions by considering the position of the variables in the conceptual model.

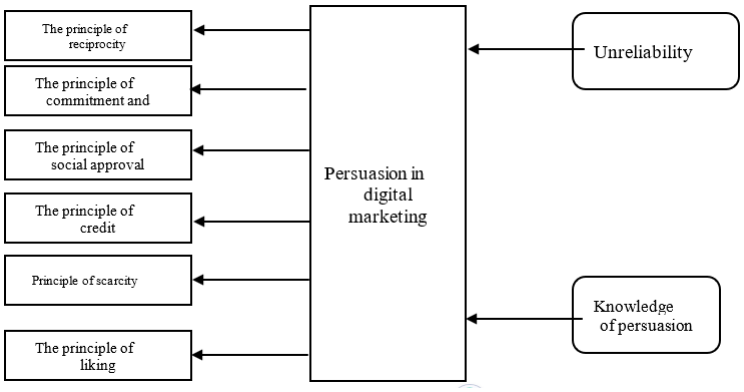

Figure 1: Research conceptual model

4 Methodology

The current research is applied from the point of view of the goal, and from the point of view of the research method, descriptive survey, and in terms of data collection, it is among field research. The major advantage of the field study is that the results represent a greater variety of situations and environments. Researchers provide detailed data analysis that can be used as initial data for many different research hypotheses and has the ability to be generalized to other communities. In addition, field research has the ability to find newer social facts that the environment or community and participants may not be aware of. Most importantly, there is usually no manipulation of data or variables because the data is collected from the natural environment (How to Conduct Field Research Study? A Complete Guide - Enago Academy, 2022).

In the first stage, the researcher made a questionnaire on the effect of Cialdini principles of persuasion (reciprocity, commitment and agreement, social approval, credibility, rarity and likability) with two modulating variables of customer persuasion knowledge and conditions of uncertainty with a total of three general items including age, level of education, Gender and eighteen items related to the variables were formulated. The questionnaire was sent in an online format to the participants who were selected based on the available sampling method and continued until the desired number of complete and perfect answers was reached. The sample size of the required participants in this study was selected according to Morgan's table, 384 people, including people who interacted with the wood furniture industry company through the digital space and were actually considered as followers of the company's web and social pages, to confirm the validity of the questionnaire. Based on the opinions of professors, experts and experts, the necessary corrections were made in order to confirm the face validity of the questionnaire. Also, in this study, in order to ensure the content validity of the questionnaire and ensure that the proposed items are sufficiently representative of the subject under study, the existing literature and research background in the subject area were carefully examined. Validity and reliability tests and other common tests were performed using SPSS, Laserl and SmartPLS software, and all the tables and results are presented in the next parts of the research.

4.1 Nonlinear structural equation model

The traditional linear structural equation model is typically made up of two parts: the measurement model describing the relationships between the observed and latent variables and the structural model describing the relationships between the latent variables. Given a vector of p observed variables Z_i for the ith individual in a sample of size n and a vector of q latent variables f_i, the linear structural equation model system can be written:

$$Z_i = \mu + \Lambda f_i + \varepsilon_i, \tag{4.1}$$

$$b_0 + B_0 f_i = \delta_{0i}, \tag{4.2}$$

where in the measurement model, the matrices $\mu(p \times 1)$ and $\Lambda(p \times q)$ contain fixed or unknown scalars describing the linear relation between the observations Z_i and the common latent factors f_i, and ε_i represents the $(p \times 1)$ vector of random measurement error independent of f_i such that $E(\varepsilon_i) = 0$ and $Var(\varepsilon_i) = \Psi$ with fixed and unknown scalars in Ψ; and in the structural model, the matrices $b_0(d \times 1)$ and $B_0(d \times q)$ contain fixed or unknown scalars defining d different additive linear simultaneous structural equations relating the factors to one another plus the $(d \times 1)$ vector of random equation errorδ_{0i}, where $E(\delta_{0i}) = 0$ and $Var(\delta_{0i}) = \Delta_0$ with fixed and unknown scalars in Δ_0.

The simultaneous linear structural model as written in (4.2) is very general. For many practical research questions which can be addressed by simultaneous structural models, it is useful to model specific variables in terms of the rest of the variables, i.e., it is useful to consider some of the latent variables as endogenous and others as exogenous, where endogenous variables are those that are functions of other endogenous and endogenous variables . Let $f_i = (\eta_i', \xi_i')'$ where η_i are the d endogenous latent variables and ξ_i are the $q - d$ structural model (4.2) becomes:

$$\eta_i = b + B_{\eta_i} + Y\xi_i + \delta_i, \tag{4.3}$$

where it is assumed the equation errorsδ_i have $E(\delta_i) = 0$, $\mathrm{Var}(\delta_i) = \Delta$ and are independent of the ξ_i as well as independent of ε_i in (4.1), and the matrices $b(d \times 1), \mathbf{B}(d \times d), \gamma(d \times (q - d))$, and $\Delta(d \times d)$ are fixed or unknown scalars. The structural model (4.3) is said to be in implicit form, implicit because it has endogenous variables on both sides of the equations, i.e., it is not "solved" for the endogenous variables. it is assumed that the diagonal of B is zero so that no element of η_i is a function of itself. A sufficient condition for solving (4.3) is that $(1 - B)$ is invertible, then (4.3) can be solved for the endogenous variables and written as

$$\eta_i = b^* + \Gamma^*\xi_i + \delta_i^*, \tag{4.4}$$

where $b^* = (1 - B)^{-1}b, Y^* = (1 - B)^{-1}Y$, and $Var(\delta_i^*) = (1 - B)^{-1}\delta(1 - B)^{-1'}$. The structural model (4.4) is said to be in reduced form as the η_i now appears only on the left-hand side of the equation. it is important to note the assumption that the equation errors δ_i were additive and independent of the ξ_i inthe implicit form (4.3) results in the equation independent of the η_i. Given p, q and d, additional restrictions must be placed on $\mu, \Lambda, \Psi, b_0, B_0$, and Δ_0 in (4.1)-(4.2) in order to make all the unknown parameters identifiable. The assumption that (4.2) can be written in reduced form (4.4) is the typical restriction placed on the structural model.

Additionally, a common restriction placed on the measurement model (4.1) is the errors-in-variables parametrization where q of the observed variables are each fixed to be equal to one of the q different latent variables plus measurement error. For a thorough discussion of identifiability in linear structural equation models see, e.g.. Finally, it should be noted that there is no inherent distributional assumptions needed for $\varepsilon_i, \delta_{0i}$, nor f_i at this point of model specification although distributional assumptions may be added eventually to perform estimation.

A mixture SEMs for a $p \times 1$ random vector y_i is defined as follows:

$$f(y_i) = \sum_{k=1}^{K} \pi_k f_k(y_i|\mu_k, \sum_k), \quad i = 1, \cdots, n, \tag{4.5}$$

where K is the number of components which can be unknown, $\mu_k' s$ are component probabilities which are nonnegative and sum to 1.0, $f_k(y|\mu_k, \sum_k)$ is a multivariate normal density function with an unknown mean vector μ_k and a covariance matrix $\sum_k$. Conditional on the kth component, suppose that y satisfies the following measurement model:

$$y = \mu_k + \Lambda_k\omega_k + \varepsilon_k, \tag{4.6}$$

where μ_k is an $p \times 1$ intercept vector, Y_k is a $p \times q$ factor loading matrix, ω_k is a $q \times 1$ random vector of latent variables, and ε_i is a $p \times 1$ random vector of error measurements with distribution $N(0, \Psi_k)$, which is independent of ω_k, and Ψ_k is a diagonal matrix. Let Ψ_k be partitioned into $((\eta_n^T, \xi_k^T)^T$, where η_k is a $q1 \times 1$ vector, ξ_k is a $q2 \times 1$ vector, and $q1 + q2 = q$. The structural equation is defined as

$$\eta_k = B_k\eta_k + \Gamma_k\xi_k + \delta_k, \tag{4.7}$$

where B_k and Y_k are $q1 \times q1$ and $q1 \times q2$ matrices of unknown parameters: and random vectors $\xi_k\Lambda_k$ are independently distributed as $N(0, \Phi_k$ and $N(0, \Phi_{\Lambda k}$, respectively: and Φ_k is a diagonal matrix.

We assume that $B_{0k} = (I_{q1} - B_k)$ is nonsingular and (I_{q1} is independent of any elements in B_k. One specific form of B_k that satisfies this assumption is the lower or upper triangular matrix.

As the mixture model defined in (4.5) is invariant with respect to permutation of labels $k = 1, \cdots, k$, adoption of an unique labeling for identifiability is important. Roeder and Wasserman (1997), and Zhu and Lee (2001) proposed

to impose the ordering $\mu_{1,1} < \cdots < \mu_{k,1}$ for eliminating the label switching (jumping between the various labeling subspace), where $\mu_{k,1}$ is the first element of the mean vector μ_k. This method works fine if $\mu_{1,1}, \cdots, \mu_{k,1}$ are well separated.

However, if $\mu_{1,1}, \cdots, \mu_{k,1}$ are close to each other, it may not be able to eliminate the label switching, and may introduce incorrect results.

Hence, it is necessary to find a sensible identifiability constraint. In this chapter, the random permutation sampler developed by Früwrirth-Schnatter (2001) will be applied for finding the suitable identifiability constraints. See the following sections for more details.

Moreover, for each $k = 1, \cdots, K$ structural parameters in the covariance matrix $\sum_k$ corresponding to the model defined by (4.6) and (4.7) are not identified. A common method in structural equation modeling for identifying the model is to fix appropriate elements in A_k, B_k and/or Y_k at preassigned values. The positions of the preassigned values of the fixed elements in these matrices of regression coefficients can be chosen on a problem-by-problem basis, as long as each $\sum_k$ is identified. In practice, most manifest variables are usually clear indicators of their corresponding latent variables. This give rather clear prior information to specify the zero values to appropriate elements in these parameter matrices. See the illustrative example in Section 5 for a more concrete example. For clear discussion of the proposed method, we let $\pi = (\pi_1, \cdots, \pi_k)$, and θ be the vector which contains all unknown parameters in the covariance matrices that defines an identified model.

5 Findings

5.1 Demographic information of the sample size

48.4% of the research sample are men. This figure has increased to 51.6 percent for women. Also, 39.6 percent of the sample is in the age group of less than 30 years, 34.9 percent are 30 to 40 years old, 20.8 percent are between 40 to 50 years old, and 4.7 percent are over 50 years old. Diploma to post-diploma, 39.1 percent post-diploma to bachelor's degree and the rest have master's degrees and higher in various fields of study.

5.2 Evaluation of the psychometric indicators of the researcher-made questionnaire

SPSS, Laserl and SmartPLS software were used for data analysis. By using SmartPLS 4 software, the validity evaluation of the questionnaire prepared by the researcher was done. The factors and dimensions of the evaluation of the principles of persuasion of religious fluid principles in digital marketing were extracted by using the theoretical literature of the subject. Finally, by using confirmatory factor analysis. It was investigated whether the identified dimensions are statistically confirmed? The result of this investigation indicates a good fit between the data and the model. In other words, all the items of the questionnaire, evaluation of religious fluid persuasion principles, constitute hidden variables, the principle of reciprocity, the principle of commitment and agreement, the principle of social approval, the principle of credibility, the principle of rarity and the principle of liking, and the hidden structures of the modulating variables of knowledge of persuasion and uncertainty.

Further, the reliability of the questionnaire after Cronbach's alpha test indicates the desired value of the indicators, which is shown in the table below. Based on the reliability of all the considered dimensions, it can be stated that the researcher-made questionnaire has good reliability and high internal consistency.

5.3 Research measurement model

5.3.1 Research measurement model (external model)

The research measurement model or external model includes Cialdini's principles of persuasion in digital marketing. Given that the research measurement model is reflective, the research tests are also chosen reflective. The reflective model expresses the position of the objects in the model and shows their relationship with the model structures. The obvious items or variables are measured in terms of reliability and validity.

5.3.2 Homogeneity test (confirmatory factor analysis)

Based on the studies of Hir et al. in [11], before conducting any test in reflective measurement models, the test of homogeneity should be performed in order to homogenize or make the questions of a variable one-dimensional. confirmed through the confirmatory factor analysis (CFA) technique, which is presented in the table below 2.

Table 2: The test of homogeneity of the questions

p-value	standard deviation	Mean	Elongation	crookedness	T Value	factor load	object	component	category
.000	1.143	4.036	-0.642	-0.839	79.430	0.925	Q1	reciprocity	**Persuasion in digital marketing**
.000	1.088	4.120	-0.134	-1.007	51.355	0.935	Q2		
.000	1.086	4.198	0.833	-1.281	35.922	0.914	Q3	Commitment and agreement	
.000	1.099	4.237	1.192	-1.439	34.362	0.916	Q4		
.000	1.053	4.260	0.644	-1.301	32.131	0.929	Q5	social approval	
.000	1.001	4.331	1.476	-1.482	35.065	0.919	Q6		
.000	1.192	4.211	0.968	-1.450	41.879	0.913	Q7	Validity	
.000	1.195	4.180	0.601	-1.324	33.402	0.942	Q8		
.000	1.078	4.487	4.397	-2.316	29.974	0.979	Q9	scarcity	
.000	1.025	4.534	5.332	-2.479	91.973	0.980	Q10		
.000	1.196	4.234	0.758	-1.424	52.873	0.933	Q11	Like	
.000	1.203	4.177	0.395	-1.290	52.286	0.933	Q12		
.000	1.116	4.229	0.453	-1.287	51.737	0.924	Q13		
.000	1.254	2.177	0.015	0.974	38.381	0.925	Q14	Knowledge of persuasion	
.000	1.209	2.258	-0.038	0.852	43.770	0.945	Q15		
.000	1.332	1.935	0.342	1.288	32.904	0.932	Q16	Unreliability	
.000	1.262	2.000	0.591	1.286	23.969	0.910	Q17		
.000	1.310	1.987	0.576	1.329	33.160	0.953	Q18		

Table 3: Reliability values

Rho-c	**composite reliability**	**Cronbach's alpha**	**component**
0.936	0.866	0.863	Validity
0.921	0.831	0.829	social approval
0.911	0.806	0.806	Commitment and agreement
0.951	0.899	0.897	Knowledge of persuasion
0.952	0.931	0.924	Unreliability
0.942	0.935	0.933	Persuasion in digital marketing
0.928	0.848	0.845	reciprocity
0.941	0.906	0.906	Like
0.979	0.957	0.957	scarcity

5.3.3 Reliability tests

Cronbach's alpha value, combined reliability and RhO-C for all variables are higher than 0.7, which indicates the satisfactory reliability of the questionnaire. The relevant numbers are presented in Table 3.

5.3.4 Validity tests are calculated in two categories

Average variance extracted (AVE) test

This index was also presented by Fornell and Larcker in 1981. Convergent validity is evaluated based on the external model and by calculating the average variance extracted. The AVE measure indicates the average variance shared between each construct with its indicators. In simpler terms, AVE shows the degree of correlation of a structure with its indicators, the higher the correlation, the better the fit. Fornell and Larker believe that convergent validity exists when the AVE is greater than 0.5. The AVE values of this study are reported in Table 4.

scarcity	Like	reciprocity	Persuasion in digital marketing	Unreliability	Knowledge of persuasion	Commitment and agreement	social approval	Validity	**component**
0.959	0.841	0.866	0.557	0.868	0.906	0.837	0.854	0.879	**AVE**

Table 4: AVE values of study

Divergent validity indicators

Fornell and Larcker test

Henseler et al. [12], based on the studies of Fornell and Larker, stated that in addition to the items of each variable, the variables themselves should also have divergence from each other (i.e., the absence of collinearity or

critical correlation). Therefore, in the table 5, the correlation between the hidden variables is placed on the main diameter instead of the number one, the square root of AVE. The root value of AVE of each variable should be a larger number than the correlation of that variable with other variables.

Table 5: Values of Fornell-Larker test

Like	reciprocity	Persuasion in digital marketing	Unreliability	Knowledge of persuasion	Commitment and agreement	social approval	Validity	
							0.938	Validity
						0.924	**0.471**	social approval
					0.915	**0.401**	**0.466**	Commitment and agreement
				0.952	**-0.468**	**-0.454**	**-0.435**	Knowledge of persuasion
			0.932	**0.626**	**-0.509**	**-0.612**	**-0.568**	Unreliability
		0.930	**-0.733**	**-0.556**	**0.516**	**0.568**	**0.604**	reciprocity
	0.917	**0.698**	**-0.700**	**-0.579**	**0.594**	**0.612**	**0.560**	Like
0.979	**0.675**	**0.532**	**-0.560**	**-0.539**	**0.513**	**0.516**	**0.524**	scarcity

5.4 Single-valued to multi-valued trait ratio (HTMT)

Henseler et al. [12] have presented a new index called the ratio of single-valued to multi-valued trait or HTMT to evaluate divergent validity. If the values of this criterion are less than 0.9, divergent validity is acceptable. The values and results of the single-valued to multi-valued trait ratio test for this research are presented in Table 6.

5.5 Quality test of reflective measurement model

To determine the quality of the reflective measurement model, the subscription index or redundancy index is used. This index measures the ability of the model to predict the observable variables through their corresponding hidden variable values. The positive values of the Com CV index indicate the appropriate quality of the reflective measurement model. If this index is positive, the quality of the reflective measurement model is confirmed.

The values of the mentioned tests related to this study are reported in Tables 7, 8.

RE=matching like CC=commitment and agreement SP=social proof AU=authority SC=scarcity $LIKE$=liking KNP=knowledge persuasion UR=uncertainty

5.6 RMR index and SRMR

The residual mean square root index is calculated using the formula $\sqrt{R2-1}$. Whenever the value of this criterion tends to zero, the model has a higher goodness of fit. If different Likert scales (5-point and 7-point) are used in a questionnaire, the RMR index is not very valid [14]. The use cases of this index have high validity, this index changes between 0 and 1, which for a model with a good fit, this value is less than 0.05 [13] and values below 0.08 can also be accepted. In this research, the value of $SRMR = 0.032$.

5.7 Prioritizing the effectiveness of religious fluid principles in persuading customers in digital marketing in the furniture industry

For this purpose, Friedman's rank test was used to extract the rank of the results from the questionnaire. The results of this test can be seen in Table 9. And the lowest average rank in this area belongs to the reciprocity component with a rank of 3.11. The four components of commitment and agreement, social approval, and credit and liking are ranked second to fifth respectively.

5.8 *T*-Tech test is a sample to measure the effectiveness of religious fluid persuasion principles in digital marketing

The result of the T-Tech test is a sample to measure the effectiveness of religious fluid persuasion principles in digital marketing. It shows that these principles are effective in persuading customers in the digital marketing of the furniture industry. These results can be seen in table no. religious fluid persuasion has a positive effect on customers' persuasion in all six dimensions "competition, commitment and agreement, social approval, credibility, rarity and likability" at the alpha level of 0.01. Also, the average size indicates the "optimal effectiveness" of the components.

Table 6: Single-Value-to-Multi-Value Ratio (HTMT)

Knowledge of persuasion x persuasion in digital marketing	Uncertaint y x persuasion in Digital Marketing	scarcity	Like	reciprocity	persuasion in digital marketing	Unreliability	Knowledge of persuasion	Commitment and agreement	sicial approval	Validity		validity
										0.557		social approval
									0.491	0.556		Commitment and aggrement
								0.549	0.526	0.49		Knowledge of
							0.686	0.558	0.696	0.633		Unreliability
						0.834	0.700	0.840	0.848	0.840		Persuasion in digital marketing
					0.925	0.826	0.638	0.625	0.676	0.700		reciprocity
				0.790	0.972	0.763	0.642	0.695	0.705	0.630		Like
			0.725	0.589	0.840	0.591	0.581	0.584	0.578	0.575		scarcity
		0.788	0.779	0.712	0.862	0.745	0.692	0.620	0.648	0.563		Uncerytainty x Persuasion in Digital Marketing
	0.848	0.762	0.743	0.667	0.809	0.693	0.663	0.579	0.632	0.567		Knowledge of persuasion x persuasion in digital

6 Discussion and conclusion

Cialdini's principles of persuasion, as one of the most well-known psychological principles and an efficient tool, play a significant role in persuading customers in digital marketing in order to better understand information by the

Table 7: Cross-construct validity - total

	SSO	SSE	$Q^2 = SSE/SSO$
Validity	768,000	396.434	0.484
social approval	768,000	413.284	0.462
Commitment and agreement	768,000	441.173	0.426
Knowledge of persuasion	768,000	768,000	0.000
Unreliability	1152.000	1152.000	0.000
Persuasion in digital marketing	4992.000	3222.095	0.355
reciprocity	768,000	307.580	0.600
Like	1152.000	372.112	0.677
scarcity	768,000	284.308	0.630

Table 8: Cross-construct-total collective validity

	SSO	SSE	$Q^2 = SSE/SSO$
Validity	768,000	363.335	0.527
social approval	768,000	403.564	0.475
Commitment and agreement	768,000	434.552	0.434
Knowledge of persuasion	768,000	317.141	0.587
Unreliability	1152.000	356.283	0.691
Persuasion in digital marketing	4992.000	2575.154	0.484
reciprocity	768,000	384.255	0.500
Like	1152.000	413.434	0.641
scarcity	768,000	229.394	0.701

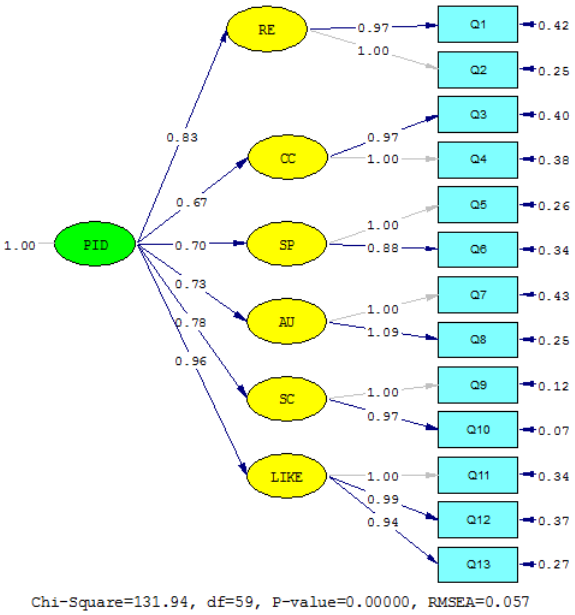

Figure 2: Second-order confirmatory factor analysis of persuasion in digital marketing

Table 9: Farid Man's rank test

Meaningful level	Degrees of freedom	K-2	Mean rank	mean	components
0.001	5	83.611	3.11	4.0781	**reciprocity**
			3.73	4.2174	**Commitment and agreement**
			3.66	4.2956	**social approval**
			3.44	4.1953	**Validity**
			4.07	4.5041	**scarcity**
			3.36	4.2135	**Like**

Table 10: The results of a sample t-tech test

Confidence interval of differences		Theoretical average				component
More	Less	mean difference	SIG	Degrees of freedom	Value T	
4.1824	3.9739	4.07813	0.000	383	76.896	reciprocity
4.3179	4.2270	4.21745	0.000	383	82.581	Commitment and agreement
4.3910	4.2002	4.29557	0.000	383	88.536	social approval
4.3078	4.0838	4.19531	0.000	383	73.333	Validity
4.6138	4.4070	4.51042	0.000	383	85.754	scarcity
4.3215	4.1056	4.21354	0.000	383	76.760	Like

human brain.

In this research, Sialdini's principles were considered as a criterion for evaluating the effectiveness of customer persuasion in the digital marketing of the furniture industry, and the results of the analysis indicate that all six principles of persuasion include the principle of reciprocity, commitment and agreement, social approval, credibility, and scarcity in marketing. Digital has more effectiveness on the audience, which in this research are the customers of the furniture industry. Meanwhile, the two modulating components of persuasion knowledge and the level of uncertainty can affect the effectiveness of these principles inversely, so that the capabilities of the principles of effectiveness are weakened as the knowledge of persuasion of customers increases and the level of uncertainty increases. which attracts digital marketers in the field of the researched society due to the importance of this issue.

The data obtained from the questionnaire showed that customer involvement from the psychological dimension (principles of religious fluid psychology) can significantly improve the efforts of marketers in persuading customers. This effectiveness was more evident in the component of scarcity and commitment and agreement, and other components with a slight decrease still had significant effectiveness. Therefore, it can be stated that the application of religious fluid persuasion psychology principles together and under the influence of two elements of customer persuasion knowledge and the level of uncertainty in providing content and advertising in digital marketing in the furniture industry is effective in the sales and profitability process. This study theoretically contributes to the effectiveness of using the principles of persuasion on customer responses in digital marketing of the furniture industry. Furthermore, the results of this study may provide valuable information for online marketers to improve the persuasiveness of their e-commerce website or marketing platforms. The findings of this study can help marketers to understand the effectiveness of Cialdini's principles of persuasion on consumer behavior and be able to use them in the development and testing of digital marketing communication strategies.

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