

DIMENSIONS OF CONSUMER PRICE KNOWLEDGE: DIFFERENCES BETWEEN GOODS AND SERVICES

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Abstract

Though the US economy is now considered to be mostly service based, marketing strategies for services, in particular pricing strategies, have not been as well developed nor as successful as those same strategies for goods. This phenomenon has led to weaker or less-developed consumer price knowledge for services, compared to goods. This study uses 187 respondents to conduct an empirical study to compare four dimensions of consumer price knowledge – accuracy, confidence, usability, specificity – between goods and services. Findings indicate consumers have less developed price knowledge, for all four types of knowledge, for services than they do for goods. In addition, product experience impacts price knowledge for services, but not for goods. Further, consumer demographics have no impact on price knowledge, suggesting the pervasive nature of the price knowledge differences between services and goods.

Key words: price knowledge; goods; services; demographic characteristics

1. Introduction

It is no revelation that the economy of the United States is service based. This development is not new. As early as 1948, services accounted for about 60% of the U.S. GDP and 55% of the U.S. labor force (U.S. Department of Labor, Bureau of Labor Statistics, *Industry at a Glance*, May 4, 2007). By 2009, services had become even more important in the U.S. economy, accounting for 76.9% of GDP and 70% of the labor force (*The CIA World Factbook* 2010). Many businesses that were once viewed as manufacturing giants have either disappeared completely or are shifting their focus toward services. For example, IBM, once on the cutting edge of computer and technology manufacturing, is now amongst the largest service businesses in the world. IBM abandoned most of its manufacturing in favor of providing services and is the global leader in information technology services and consulting, employing approximately 200,000 services professionals around the world. Despite the economic emphasis on services in the United States, consumers' perceptions of service are less positive than are their perceptions of manufactured goods. Though the output of the United States is mostly accounted for by services, goods are still more prominent in consumption, with 60% of American consumption being in foreign-produced oil (*The CIA World Factbook* 2010).

Thus, consumers may not be as familiar with strategies surrounding the marketing of services as they are with marketing strategies for goods. A major component of a marketing strategy is pricing. We have a good idea of what we will pay for a music CD is, but is our knowledge of the price of a concert as sure? We know how much we pay for a meal in a restaurant, but do we have a good idea of the cost of an hour of house-services? In addition, consumers also tend to be less satisfied with services in general. The University of Michigan's American Consumer Satisfaction Index consistently indicates lower satisfaction scores for services in all sectors when compared to other products (Fornell 2011). Given economic growth in services, their profit and competitive advantage potential, and the low levels of customer knowledge and satisfaction, the potential for establishing competitive advantages for companies that can excel in a marketing strategy designed to improve knowledge and satisfaction of services is great. This study is designed to compare consumer knowledge of the prices of good and the prices of service. Four components of price knowledge will be compared: the accuracy of the knowledge, the confidence in that price knowledge, the usability of the knowledge, and the specificity of price knowledge. Further analysis will be designed to assess whether a consumer's experience with a certain product has an impact on these price knowledge components. Additionally, the impact of demographic variables on price knowledge will be assessed.

2. Literature Review and Hypotheses

An essential component of marketing strategy is pricing. In fact, price tends to be a favored marketing tool due to its important effect on consumers (Berry 1999) and its substantial effect on the profitability of an organization (Dolan and Simon 1996). Questionable and unclear pricing strategies can result in decreased customer satisfaction and goodwill, and ultimately in lost business for organizations (Aguirre 2000; Bellville 2009; Cooper 1986; Grewal et al. 2004; Ingenbleek 2010; Kimes 2002; Kimes and Wirtz 2002). On the other hand, good pricing strategies can be beneficial for consumers and can lead to increased business and revenues for businesses, more customer satisfaction, long-term customer relationships, and even customer loyalty (Chandran and Morwitz 2005; Dreze and Nunes 2004; Gelb 2010; Gourville and Soman 2002; Kehagias et al. 2009; Maoui et al. 2009; Munnukka 2006; Pancras 2010; Parker et al. 2009; Tang and Tang 2002; Zettelmeyer 2000). Unfortunately, for both consumers and marketing organizations, this is one area where marketing efforts need improvement in services.

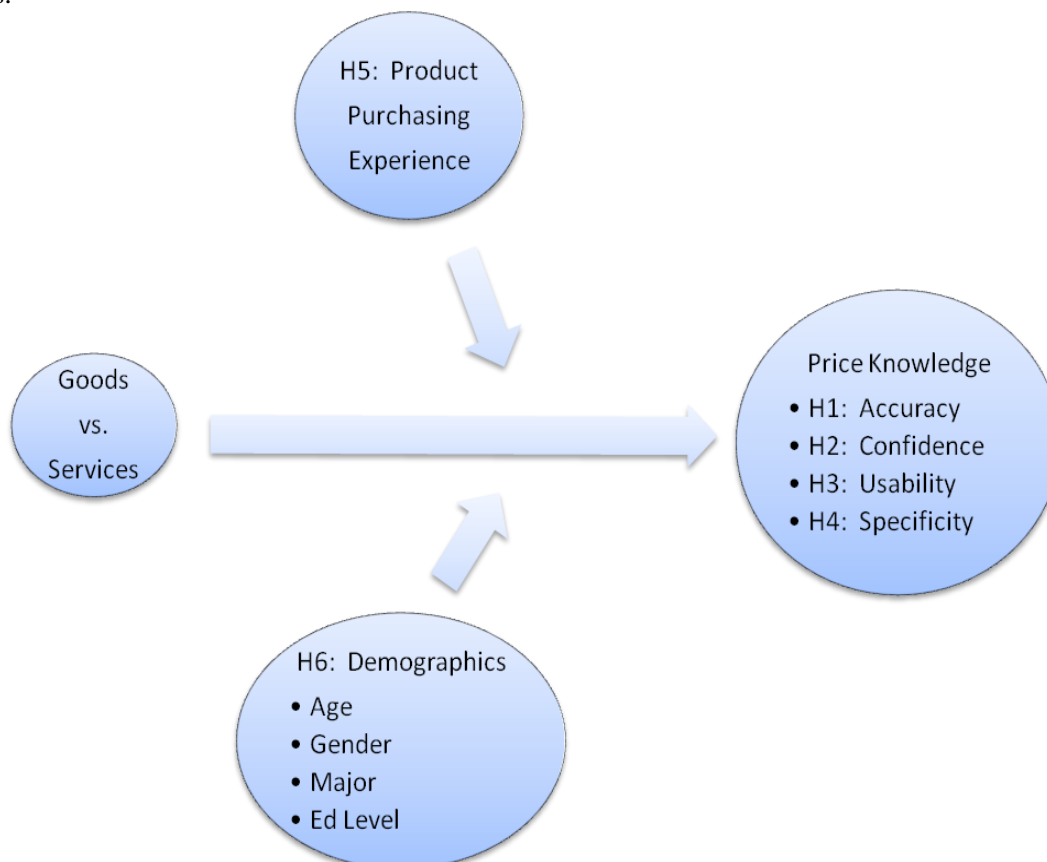


FIGURE 1: Model of Price Knowledge Differences between Goods and Services

Most service organizations use an ineffective and unsophisticated approach to pricing (Monroe 1979; Sarvary 2002), but good pricing strategies in the service industries can achieve the same benefits for both consumers and organizations selling services as pricing strategies do in the goods industries (Avlonitis and Indounas 2005; Bala and Carr 2010; Dunkerley and de Palma 2009; Ginovsky 2010; Iyengar 2007; Lympelopoulos and Chaniotakis 2008; Rothenberger 2008; Sahay 2007). Conversely, bad pricing strategies in the services industries create the same problems as they do in the good industries (Brand 2010; Naldi and Pacifici 2010; Rohlf and Kimes 2007). This line of thinking leads to the development of the model to be tested in this research (see Figure 1).

One major area of difficulty is that customers, especially consumers, often have inaccurate or limited reference prices for services. Many business use intuition to price their service and as a result, an inaccuracy price for service is higher and more attractive to consumer than product (Bundschuh and Dezvane, 2003). At the same time, a reference price is a price point in memory for a good or a service and can consist of the price last paid, the price most frequently paid, or the average of all prices customers have paid for similar offerings (Monroe 1979). Retailers are the primary source of goods for consumers. With the exception of some huge retailers that distributed catalogs, consumers once had to physically travel to a brick-and-mortar store to check prices and to make purchases. Now, many retailers have not only physical locations, but also sell their goods online. In addition, some retailers are online only. But it is so easy for most consumers to research prices online, that limiting itself to online retail operations only does little to hinder a modern consumer from researching prices. Consumers are becoming more sophisticated in processing this increasing price information to help them develop their reference prices for goods (Chen et al. 2010; Choi and Mattila 2009; Courty and Pagliero 2008; Galeotti 2010; Garbarino and Maxwell 2010; Kannan and Kopalle 2001; Knox and Eliashberg 2009; Kuksov and Ying 2010; Levin et al. 2009; Unni et al. 2010; Villas-Boas 2009; Zhang and Cooper 2008). The opportunities to establish reference prices are not as numerous for most services. We need to consider that digital business offers many services for free, for example, Graigslist and Google companies provide various of services that customers expect to receive for free (Anderson, 2008).

Furthermore, prices for many goods are more stable than are prices for services. A bottle of water in one city will cost approximately the same as a bottle of water in another city. On the other hand, the price of a night's stay in a hotel room offering the same amenities and from the same hotel chain can vary greatly even in the same city and varies depending on season of the year, day of the week, events that are happening in the city, etc. That makes these prices much more difficult to predict accurately for consumers. Thus, the following is hypothesized.

H₁: Consumers have more accurate price knowledge for goods than for services.

It has recently become clear that in any consideration of knowledge, accuracy alone is not enough (Ackerman and Goldsmith 2008; Cook et al. 2010; Forbes and Kara 2010; Mengelkamp and Bannert 2010; Pechtl 2008; Pillaj 2010; Siemsen et al. 2009; Wesson and Pulford 2009). One may speculate on an issue with minimal knowledge and by chance it is quite accurate. However, that person may have no confidence in their knowledge, despite the accuracy. When a consumer speculates on the price of a product, being accurate may be purely lucky, or it may be that the consumer actually has a good idea of the price. If the latter is the case, the consumer speculates on the price confidently. Thus, confidence is an important factor or dimension in true knowledge acquisition and maintenance (Pillaj and Min 2010). Research on product-price knowledge should not be restricted to measuring the accuracy of prices. Confidence in one's price knowledge is equally important to qualify a person's product-price knowledge as accuracy. Thus, the following hypothesis is offered.

H₂: Consumers are more confident about their price knowledge for goods than for services.

As the discussion above suggests, assessing the confidence consumers have of their "knowledge" of product prices is important because research suggests knowledge with no confidence represents nearly unusable knowledge, but accurate knowledge a consumer is also confident of represents usable knowledge (Byus and Black 2007). Quine (1987) stated, "Knowledge connotes certainty (but) what shall we count as certain? Knowledge applies only to true beliefs, and only to pretty firm ones, but just how firm or certain they have to be is the question" (p. 48). In a study of students in a classroom exam situation, Byus (2004) illustrated that merely being correct on any exam provides only one dimension of the usability of student knowledge. For knowledge to be completely usable, it is important for the learner to be both correct and confident of their correctness (Hunt and Furustig 1989; Byus 2004). For knowledge to be effectively applied to business situations, such as consumers searching for products using price as part of their search, the knowledge must be usable (Cadiz et al. 2009; Newson and Chalk 2004).

Even though a consumer is confident about his or her price knowledge, if that knowledge is not accurate, it is not usable. Conversely, if the price knowledge held by the consumer is accurate, but he or she has no confidence in the knowledge, it is also not usable. Thus, usable knowledge is clearly a function of both the accuracy of the knowledge and the confidence in that knowledge. The following is hypothesized.

H₃: Consumers' price knowledge for goods is more usable than for services.

Specificity has been identified as one of the four dimensions of market knowledge (De Luca and Atuahene-Gima 2009), suggesting that examination of any marketing knowledge, including price knowledge, should include assessment of knowledge specificity. Other research indicates the importance of knowledge specificity (Choudhury and Sampler 1997; Haake 2002; Parise and Henderson 2001; Pi-Chuan 2007; Skibniewski and Ghosh 2009). Price knowledge specificity differs from knowledge accuracy. Price knowledge accuracy is the difference in a consumer's perceived price from the average price of the product. Price knowledge specificity is manifested by the consumer stating the perceived price more specifically, such as stating a price of \$19.95 rather than \$20. The price may be inaccurate even though it is specific. Thus, the following hypothesis is proposed.

H₄: Consumers' price knowledge for goods is more specific than for services.

Recent marketing research suggests that consumer experience and knowledge are strongly related (e.g., Chakravorti 2011; Good et al. 2010; Hong and Sternthal 2010; Ratnayake et al. 2010; Schwarz and Xu 2011). Thus, a consumer's previous experience with a product should have an impact on their knowledge of the price of that product. However, this study predicts a difference in the price knowledge between goods and services. Therefore, previous experience with a product should only have an impact on consumers' price knowledge of services and not goods. Based on this reasoning, the following is hypothesized.

H₅: Consumers' experience with purchasing a product impacts all four components of price knowledge for services, but not for goods.

It has long been well documented that consumer demographics play a major role in their behavior, attitudes, etc., and recent marketing research continues to indicate the importance of demographics (e.g., Crutsinger et al. 2010; Dong et al. 2011; Schmitt et al. 2011). Recent research has also linked consumer experience with consumer knowledge (e.g., Carpenter and Baliya 2010; Gothan and Erasmus 2008; Hustvedt et al. 2008). However, this study predicts the differences between consumer knowledge of service prices versus goods prices will be universally present, suggesting consumer demographics have no impact on this product price knowledge. Therefore, the following is hypothesized.

H₆: Consumer demographics (age, gender, major, and education level) do not influence price knowledge for either goods or services.

3. Method

After a lecture clarifying the differences between goods and services, 27 undergraduate students in a Services Marketing class at a major western university were asked to generate a list of as many services as they could think of (up to 20) which they considered to be important purchases in their lives. They were also asked to do the same for goods. They were left to interpret the meaning of "important purchases" however they wished. Some students mentioned that "important" to them meant frequent purchases, while others defined "important" as expensive purchases. This process resulted in an initial list consisting of 52 goods and 37 services. Two weeks later, the same students were asked to select the ten goods and ten services they perceived to be most important in their lives. These votes were tallied and the eight services and eight goods receiving the most votes were selected for this study.

The services included in this study were as follows: a dental checkup, a general medical checkup, legal help for a DWI, one month of Netflix service, one hour of housecleaning service, an airline ticket to specific locations, a haircut, and one hour of car mechanic service. The eight goods included in this study were the following: a cheeseburger, a ski jacket, a six-pack of beer, a DVD, a broom, a helium-filled balloon, a comb, and a hammer.

Three items were included for each of the 16 products. The first item for each product asked consumers to write in what they thought was the cost for the product. To assess the accuracy of the prices respondents gave, the authors checked the actual cost of each product in the city where the research was conducted and the differences between prices given and actual prices were calculated.

The second item asked consumer to respond to a five-point semantic-differential scale asking them to assess how confident he or she was to the product price they just specified, with “5” being equivalent to “Completely sure” and “1” being equivalent to “Completely unsure.” This was used to assess consumer confidence about the prices they had given for each product. Assessing usability of the price required a combination of the accuracy of the prices given by the consumers and the confidence in those prices. The product of the accuracies (converted to percentages) and the confidence in the prices given was used as this combination variable to assess usability of the prices.

The third item asked consumers to state how many times in the last year they or someone close to them has purchased the product. These responses were used as a measure of consumer experience with the products.

Finally, price specificity was determined by consumer responses to item one asking consumers to state the prices of the products used in the study. If the prices given were even dollar amounts (e.g., \$15 for Netflix), it was determined they were not specific. On the other hand, if the prices given were not even dollar amounts (e.g., \$14.95 for Netflix), the prices were considered to be specific.

The data analyzed for this paper were collected from 187 undergraduate students majoring in business at a major university in the West. Students were considered to be an appropriate sample for this exploratory study for several reasons. First, the group of consumers who generated the list of products to be used in the research consisted of students, so to maintain consistency, consumers responding to the survey were also students. Second, a student sample is an excellent place to begin this stream of research because university students are likely to be more price sensitive than the general population because of their limited financial resources. Thus, they will be more familiar with the variables of interest (Calder, Phillips, and Tybout 1981). Third, these university students are enrolled in marketing courses and should be knowledgeable and have well-formed opinions on the issues of interest (Asher 1988; Cox 1980).

4. Results

H₁, H₂, H₃, and H₄ are designed to compare the means of the pricing dimensions between goods and services, suggesting t-tests as an appropriate statistical technique. See Table 1 for these results. H₁ is significant ($t = 5.718$, $p < .001$), suggesting that consumers have more accurate price knowledge for goods than they do for services.

Table 1: Means of the price dimension between goods and services

Hypothesis Number	Knowledge Component	Test Statistic	p-value
H1	Price Knowledge Accuracy	5.718	< .001 Supported
H2	Price Knowledge Confidence	59.374	< .001 Supported
H3	Price Knowledge Usability	5.456	< .001 Supported
H4	Price Knowledge Specificity	6.017	< .001 Supported

H₂ is also significant ($t = 59.374$, $p < .001$), suggesting that consumers are more confident about their price knowledge for goods than they are for services. Likewise, H₃ is also significant ($t = 5.456$, $p < .001$), suggesting that consumers’ price knowledge for goods is more usable than their price knowledge for services. Finally, H₄ is also significant ($t = 6.017$, $p < .001$), suggesting that consumers’ price knowledge for goods is more specific than their price knowledge for services.

H₅ is designed to assess the impact of consumer experience with purchasing the products on the dimensions of price knowledge, suggesting OLS (ordinary least square) regression as an appropriate statistical technique. See Table 2 for these results. This hypothesis, which suggests that consumers’ experience with purchasing a product impacts all four components of price knowledge for services instead of price knowledge for goods, is mostly supported. As hypothesized, experience with purchasing the product has no influence on consumer knowledge of the prices of goods. However, as also hypothesized, this purchasing experience does have an impact on three out of the four consumer price knowledge dimensions for service: price knowledge confidence ($\beta = 0.088$, $F = 33.570$, $p < .001$), price knowledge usability ($\beta = 0.324$, $F = 4.676$, $p < .05$), and price knowledge specificity ($\beta = 0.097$, $F = 12.924$, $p < .001$). Only consumer price knowledge accuracy is not affected by purchase experience.

H₆ is designed to assess the impact of consumer demographics (age, gender, education level) on the four dimensions of price knowledge.

Age and education are continuous variables, allowing the parts of this hypothesis that includes those variables to be tested using OLS regression, while gender and major are categorical variables, suggesting t-testing to test the parts of this hypothesis including those variables. See Table 3 for these results. This hypothesis suggests that these consumer demographics do not influence price knowledge for either goods or services. The hypothesis was mostly supported with non-support being negligible. However, age influences consumer price knowledge confidence for goods ($\beta = -.024$, $F = 5.614$, $p < .05$), with younger consumers being more confident in their price knowledge.

Table 2: Consumer experience with purchasing a product and price knowledge of service

Product Type	Knowledge Component	Test Statistic	p-value	
Services	Price Knowledge Accuracy	1.142	> .05	
	Price Knowledge Confidence	33.570	< .001	Supported
	Price Knowledge Usability	4.676	< .05	Supported
	Price Knowledge Specificity	12.924	< .001	Supported
Goods	Price Knowledge Accuracy	0.023	> .05	
	Price Knowledge Confidence	2.634	> .05	
	Price Knowledge Usability	0.075	> .05	
	Price Knowledge Specificity	0.312	> .05	

5. Discussions and Implications

This research presents new findings and confirms findings of previous research. It is the first study to examine four dimensions of knowledge (accuracy, confidence, usability, and specificity) in relationship to consumer knowledge of prices. It also confirms the research model indicating that consumers' knowledge of the prices of services are much weaker and/or less developed than are their knowledge of the prices of goods.

Table 3: Demographic influence of price knowledge for goods and services

Product Type	Demographic	Knowledge Component	Test Statistic	p-value
Services	Age	Price Knowledge Accuracy	0.180	> .05
		Price Knowledge Confidence	0.924	> .05
		Price Knowledge Usability	0.002	> .05
		Price Knowledge Specificity	0.208	> .05
	Gender	Price Knowledge Accuracy	0.818	> .05
		Price Knowledge Confidence	0.199	> .05
		Price Knowledge Usability	0.851	> .05
		Price Knowledge Specificity	0.038	> .05
	Ed Level	Price Knowledge Accuracy	1.717	> .05
		Price Knowledge Confidence	0.036	> .05
		Price Knowledge Usability	1.472	> .05
		Price Knowledge Specificity	0.756	> .05
Goods	Age	Price Knowledge Accuracy	0.073	> .05
		Price Knowledge Confidence	5.614	< .01 Supported
		Price Knowledge Usability	0.034	> .05
		Price Knowledge Specificity	0.013	> .05
	Gender	Price Knowledge Accuracy	0.319	> .05
		Price Knowledge Confidence	0.699	> .05
		Price Knowledge Usability	0.063	> .05
		Price Knowledge Specificity	0.304	> .05
	Ed Level	Price Knowledge Accuracy	0.370	> .05
		Price Knowledge Confidence	0.265	> .05
		Price Knowledge Usability	1.058	> .05
		Price Knowledge Specificity	0.131	> .05

One of the reasons is because a service itself is tangible and one of the most tangible aspects of the service offering is the price. We can confirm that service price is tangible for consumer more than product price. As a result of this fact, price plays more important role in service than in product.

Other significant result of our research that consumers feel more confidence about price for goods than for service (H2). This exists, because service encounters are never the same (Wirtz and Mattila, 2001). Services typically have a higher proportion of experience and credence properties than product, making service performance more difficult to evaluate than product (Boulding et al., 1993). The organization who offers services should consider to provide to consumer maximum evidence of consistency their service performance. High service evaluation leads to repeat purchasing and positive word of mouth which again it is significant factor for service than for product (Toncar et al., 2010). In addition, product experience is shown to have an impact on services price knowledge, but not on goods price knowledge. Finally, the consumer demographics (age, gender, and education level) assessed in this study have little impact on price knowledge for both types of products. Our results did not support by other research which indicates that consumer demographic effects on consumer's service price perceptions (Munnukka, 2006).

Consumer price knowledge for goods is much more developed for goods than it is for services. These finding supported by other research that customer in the field of service make their service decision first of all on price basis (Kollmann, 2000). These findings highlight the possibility that organizations marketing services have an enormous opportunity to recognize this and to develop their pricing strategies, and the promotion of these pricing strategies, to their customers. Since this weakness in price knowledge is demonstrated in several industries in this study, it appears that this knowledge about prices for services is universal. Those organizations in each service industry that can recognize this and develop stronger marketing strategies around price have a definite opportunity to gain a strategic advantage over those organizations that continue to maintain status quo.

Considering the ever-increasing levels of sophistication, today's consumers will search for as much information as is available to them. In today's uncertain economic conditions, pricing information is likely becoming even more valuable to consumers. Through better pricing strategies, if a service organization can enable price knowledge that is more definite in all four dimensions, and particularly in confidence, consumers will have more usable knowledge. It logically follows that more usable knowledge will lead to better consumer attitudes toward products and organization, thus leading to more purchase behavior, better customer satisfaction, and eventually give the organization a better chance of establishing those long-term customer relationships that will lead to loyalty. Another interesting finding of this study is that experience with a product has no impact on consumer price knowledge for goods, but does influence price knowledge for services. Pricing strategies for goods seem to be so well done in many industries by many organizations that consumers have the same level of price knowledge, regardless of their experience with the products. Once again, however, this finding indicates that better pricing strategies for service organizations may give them opportunities to create strategic advantages over their competitors.

The other significant finding of this study is that consumer demographics have no impact on price knowledge, regardless of the type of product. In our case, we tested the products, as a ski jacket, six-pack of beer, cheeseburger and other. This finding suggests that these differences in price knowledge between goods and services are present across consumer demographics, making the problem very pervasive. Like all studies, this research has a number of limitations. Students are not necessarily representative of the general population, though since students populations tend to be more homogeneous than the general population, if differences are found using students, it is likely that findings are generalizable. In addition, product knowledge was assessed for only 16 products, eight services and eight goods. Though the findings were as predicted and significant for the products used in this study, the findings are not necessarily applicable to other goods and services. However, since the particular population used in this study selected the products to be used in the study, the findings are at least important to this population, even if they are not generalizable.

Future research along these lines should include different products, but care should be taken to select products that are relevant to the population of the study. Future research should also be conducted using a more general segment of the population to assure these findings can be extended to the general population. An extension of the research could also be conducted to examine if the presence of absence of price knowledge influences consumer attitudes toward products and companies, purchase behavior, customer satisfaction, and consumer loyalty.

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