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Abstract Title:
The Relationship among Competitive Criteria:
An Exploratory Study from the Perspective of Performance

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Abstract

The traditional wisdom in operations management states that some competitive criteria are incompatible each other, generating operational trade-offs. However, recent studies have used cumulative capabilities models to show that competitive criteria are interrelated. Thus, improvement of one competitive criterion simultaneously creates improvement in other competitive criteria. This result brought new insights about the existence of trade-offs. Some researches results showed trade-offs between some competitive criteria while others showed no trade-offs. Besides this controversy, the majority of researches based their results on opinion of operations managers or information inside firms, characterizing an internal perspective. This research aims to explore the relationships among competitive criteria from an external perspective. A survey was run with 243 firms using internet access services to measure their satisfaction related to operational criteria. Structural equation modeling was applied to explore the relations among competitive criteria. Results showed dependability is a key competitive criterion affecting other competitive criteria.

Key-word:
Trade-offs, survey, customer, competitive criteria
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1. INTRODUCTION

Operations management trade-offs have been studied over past years due to their importance for manufacturing strategy (Skinner, 1969; Wheelwright, 1984). Recent studies with different approaches have brought new insights related to the existence of trade-offs (Corbett & Wassenhove, 1993; Ferdows & De Meyer, 1990), increasing the debate about competitive criteria and their implications for the strategy of firms. Some results have not shown the existence of trade-offs while other results have shown their existence. Those researches were based on data collected from operations managers and production managers of several organizations. However, there are few studies in the literature that focus on the relationship among the competitive criteria from the perspective of firms’ performance according to the opinion of customers. Thus, some questions arise: What are the possible relationships among the competitive criteria of operations management based on customers’ perspective? What are the repercussions of these relations for operations management? Then, this study aims to explore the relationships among competitive criteria of operations management.

This paper is organized as follow: first, we present a literature review about the relationship among competitive criteria; second, the methodology is presented; third, we show the analysis of results; fourth, we discuss the results based on the literature review; fifth, we conclude about previous discussion, the limitations and future research.
2. LITERATURE REVIEW

2.1. The competitive criteria

The concept of operations strategy is related to the importance of manufacturing to design of firm’s strategy. In this context, operations strategy is linked to the competitive criteria of operations management. Firms must decide what competitive criteria will be emphasized by manufacturing in order to compete (Skinner, 1969; 1974). One of the advantages for firms of deciding what competitive criteria to compete is to understand its repercussions for the infra-structural decisions (Wheelwright, 1984; Miller & Roth, 1994).

Quality, flexibility, dependability and cost are the usual competitive criteria. The competitive criterion quality means provide a product with higher quality or higher performance than quality and performance of other products (Wheelwright, 1984).

The competitive criterion flexibility is related to two aspects: flexibility of product and flexibility of volume (Wheelwright, 1984). The flexibility of product emphasizes the production of customized products and the development of new products. The flexibility of volume emphasizes the lead time of production.

Dependability means that the product works according to the specifications (Wheelwright, 1984). For example, dependability in delivery time is having the product delivered in the time arranged.

The competitive criterion cost means low costs of production. The cost may be source of competitive advantage (Wheelwright, 1984; New, 1992).

2.2. The relationship among the competitive criteria

The knowledge about the relationship among the competitive criteria is debate on the literature. On the one hand, there is the tradition wisdom that the competitive criteria would
be incompatible among themselves, creating the trade-offs in operations management. On the other hand, recent studies have shown that the competitive criteria are related to each other.

The last few decades have witnessed a growing number of studies about trade-offs (Corbett & Wasenhove, 1993; Ferdows & De Meyer, 1990; Hayes & Pisano, 1996; Mapes et al., 1997; Noble, 1995; Rosenzweig & Roth, 2004; Salvador, Forza, & Rungtusanatham, 2002; Skinner, 1974). Most part of these studies deal with firms’ need of choosing the competitive criteria to be improved in order to implement their operations strategy. Some of these competitive criteria are “incompatible” to each other (Wheelwright, 1984). Skinner (1974, p.115) stated that “a factory can not have a superior performance in each competitive criterion” due to limited resources. The logic behind the trade-off can be express in an inverse function correlating two variable (Hayes & Pisano, 1996). This means that the high performance in one variable implies in the low performance of another variable.

The idea about the relationship among the competitive criteria was first developed by Nanake (apud Ferdows & De Meyer, 1990). This author conducted a research to describe the practices of Japanese factories. According to Nakane, there is a path to the simultaneously development of competitive criteria. That is, the improvement of one competitive criterion creates improvement in other competitive criteria.

In 1990, Ferdows & De Meyer (1990) explored the model developed by Nakane creating the sand cone model. According to the authors, the competitive criteria are linked to each other. The development of one competitive criterion allows the development of other competitive criterion. The development of some competitive criterion generates a high superior performance in many competitive criteria. This is called the model of cumulative capabilities.

The sand cone model showed up the relationship among the competitive criteria, purposing the following sequence of improvement in competitive criteria: first, quality;
second, dependability; third, flexibility; and forth, cost. That is, an improvement in quality create a simultaneously improvement in dependability. A subsequent improvement in quality and dependability creates a simultaneously improvement in flexibility.

Other researches have been conducted trying to reinforce or refute the model of cumulative capabilities. For example, Miller & Roth (1994) conclude about the relationship among the competitive criteria, but purposing a different model of improvement in the criteria: first, quality; second, delivery; third, scope of market; fourth, flexibility; and fifth cost. Noble (1995) also found results proving the existence of the model cumulative capabilities. This author showed evidences that support the following sequence of improvement in competitive criteria: first, quality; second, dependability; third, speed of delivery; fourth, cost; fifth, flexibility; and sixth, innovation.

The development of models of cumulative capabilities contributes to the creation of others theory and the application of related concepts to the sand cone model. Rosenzweig & Roth (2004) applied the concept of progressive competition theory to the model of competitive criteria.

However, it is important to emphasize that the traditional wisdom about trade-offs in operations management is challenged by the proposition of the model of cumulative capabilities. That is, the superior performance of one competitive criterion might not imply in the inferior performance of another competitive criterion.

Almost all studies about the relationship among competitive criteria were based on data from managers inside organizations. For example, research results were based on interviews with executives or data from manufacturing department of firms. Then, it is possible to argue that this type of research is characterized by an internal perspective about the competitive criteria of operations management.
Differently from the past studies, this study aims to explore the relationship among competitive criteria of operations management from the perspective of customers. We intend to assess possible relations among the variables based on customer satisfaction. Thus, it is possible to argue that our study is characterized by an external perspective, a performance perspective of competitive criteria.

3. METHOD

We conducted a customer satisfaction survey of internet access services in order to run a structural equation modeling to assess the relationship among the variables corresponding to the competitive criteria. Other studies in operations management have used customer satisfaction survey as methods of research (Heikkilä, 2002, Athanassopoulos & Iliakopoulos, 2003). Our intention is explore the relationship among variables based on customer satisfaction. Internet access service from a telecommunication firm was chosen because of its importance for customers operations and accessibility to the customers since the researcher had access to them. Then, the customer satisfaction survey could be designed to measure the attributes related to competitive criteria in customized services.

3.1. Sample

Data were collected through a specially designed survey instrument completed by executives from 243 firms that were using internet access services from a large Brazilian telecom company.

This sample was selected from a population designed to fit the requirements of a customer satisfaction survey (Hayes, 1997). The population was defined as all firms from the South of Brazil that had contracted internet access services in the previous six months from the application of the survey. It is important to target customers with no more than six months
of usage of a product or a service because of their limited ability to remember events from the past. The final population was composed by 2,357 firms and all population of firms was invited to participate in the survey. The rate of response was 10.31%, yielding a final sample size of 243 customers. Based on the size of population and the rate of response, the size of final sample is according to a 90% level of confidence and a 5% sample error (Hair et al., 1998).

Telecommunication services such internet access services are important for firms because of their needs related to flow of information among their units, customers and suppliers. The respondents were defined as the executives responsible for the buying process of internet access service in each firm analyzed. These executives were also responsible for managing such services in their firms, pursuing all information related to the performance of the service. Executives were informed and invited to participate in the survey through an email with a link to the webpage containing the research instrument.

Data were collected from December 12th of 2004 and January 05th of 2005. Some firms participated while others refused to do, as expected in any survey. The final sample size was composed by 39 firms in manufacturing (16%), 67 firms in commerce (27%), 107 firms in services (44%) and 30 firms characterized in other industries (13%). The average firm size was 423 employees, ranging from small firms\(^1\) (less than 50 employees) until large firms (more than 1000 employees).

\section*{3.2. Research instrument}

The survey instrument was designed to collect demographic data and satisfaction measures related to different items of services analyzed by each firm. The designing process of the survey instrument was based on an exploratory stage to identify the main attributes related to the customers’ satisfaction. Executives from 14 firms were interviewed to provide

\(^1\) The size of small and large firms is relative to Brazilian market characteristics.
information and help us to get knowledge about service attributes important for customers. Those executives were selected based on their experience with the service analyzed. A non-structured questionnaire was used as a guide for researcher to explore the theme in the interview sessions. This process yielded 6 main attributes related to the service: sales process, installation of service, technical support, reliability, price, bill account. A questionnaire with 27 questions related to the customers’ satisfaction items was based on the attributes yielded in the exploratory stage. In order to collect demographic data about the sample, four questions were added: (1) sector of firm; (2) number of employees; (3) respondents’ job in firm; (4) service main characteristics.

A pilot study was conducted to test the efficacy of the survey instrument. The objective of this stage was to evaluate the clarity of the instructions and the efficacy of the questions. Twelve executives participated in the pilot study. From their feedback, we eliminated four redundant questions and rewrote another five questions.

The final questionnaire was composed of four categorical questions about demographic data, 23 continuous questions about customers’ satisfaction items, and one continuous question about overall satisfaction. Content validity was assessed through analysis of 4 scholars and professionals with expertise on this topic (Hayes, 1997).

3.3. Variables and the model

**Independent** – The twenty three continuous questions about customers’ satisfaction items served as independent variables for analyses. These questions were designed through the use of a Likert scale, in which responses could vary from 1 (totally unsatisfied), to 5 (totally satisfied). Thus, customers could choose the point in the scale that most represent their satisfaction with each item of the service analyzed.

These independent questions were reduced to a common group of factors through an application of an exploratory factorial analysis. The purpose of this procedure was to reduce
the number of independent variables from twenty three to at most six independent variables and to aggregate questions about same issues. Thus, it would be possible to assess the importance of each independent variable accordingly to common group of questions.

**Dependent** - A final question about overall customers’ satisfaction served as a dependent variable. This was also a continuous question based on the same scale as that used in independent variables.

The model of cumulative capabilities served as a model to explore the relations among variables since other studies proved its existence. Various models of relationship among variables were tested, but only three showed significance to be presented in this paper. The three models of relations among the competitive criteria analyzed are shown in the Results section.

**4. RESULTS**

We run an exploratory factorial analysis to reduce the twenty-three independent variables from questionnaire in common groups of factors. The first test of Kaiser-Meyer-Olkin (KMO) evaluated the data adequacy for an exploratory factorial analysis. KMO was equal to 0.91, beyond the minimum value equal to 0.7 suggested by the literature (Garson, 2004; Hair et al., 1998). Table 1 presents the matrix with factor loadings of twenty-three independent variables. Independent variables with loadings below to 0.40 were dropped out of the analysis as well as independent variables with loadings in two groups of factors.

As a result, the analysis indicated five constructs related to the service analyzed (see Table 2). We described the constructs according to each group of independent variables:
- Customer service (CS) – is characterized by the quality of the contact and the services provided by the sales team and helpdesk;
- Dependability (DP) – is characterized by the certainty that the services will not present failures, and when the failures occur the maintenance services will act quickly;
- Delivery time (DT) - is characterized by the time between the service purchase and its effective installation;
- Flexibility (FX) - is characterized by the customers’ perception of the extension that the services are performing according to their needs;
- Price (PC) - is characterized by the issues related to price, contract terms and payment conditions.

Construct reliability analysis through Cronbach alpha indicated that all constructs presented values higher than 0.700, above the minimum value used as reference (Hair et al., 1998), which confirms their internal consistencies (Table 3).

Table 4 presents the means and standard deviation for each construct.

We based the first structural equation model on the model of cumulative capability and the results. In this model, delivery time is the endogenous variable (see. Fig. 1) and dependability, flexibility and price are the exogenous variables to predict the overall customer satisfaction.
Table 5 show the results of multiple fit indices to assess the model’s goodness-of-fit.

The competitive criterion dependability is the variable with the higher significant relationship with delivery time (estimated coefficients = 0.731). This result is according to previous results of the model of cumulative capabilities. While flexibility shows no significant relationship with delivery time (estimated coefficient = -0.085), price shows a low significant relationship with delivery time (estimated coefficient = 0.288).

Results also show that dependability presented the highest significant prediction power to the dependent variable (estimated coefficient = 0.414). It suggests that customers want reliable internet access services and fast responses to problems related to continuous supply of services.

Customer service also shows significance for prediction of dependent variable (estimated coefficient = 0.244). Customer service is related to the customer contacts with the firm, a common characteristic in service production. The interaction between customers and the firm occurs through employees whose main activity is support customers in their needs. According to the importance of customer service construct, it is possible to conclude that customers want points of contact in the telecommunication firm.

Price is another significant attribute for overall customer satisfaction (estimated coefficient = 0.215). This result points out to the importance of the cost and consequently its influence on the price of internet access services as one of the main attributes of service analyzed. Usually, operational costs are one the main focus of firms that want to reduce their overall costs and prices in order to improve their competitiveness.
Flexibility and delivery time show no significance relationship to predict variance in the overall customer satisfaction.

We run another model of relationship among variables. This model has the competitive criterion flexibility as the endogenous variable and dependability, price and delivery time as exogenous variables (see Fig. 2).

Table 6 show the results of multiple fit indices to assess the model’s goodness-of-fit.

The competitive criterion dependability is the variable with the higher significant relationship with flexibility (estimated coefficients = 0.357). This result is partially according to previous results of the model of cumulative capabilities since they predicted an indirect relationship between dependability and flexibility, mediate by delivery time. Price also shows a significant relationship with flexibility (estimated coefficient = 0.339), while delivery time show no significant relationship with flexibility (estimated coefficient = -0.036).

5. Discussion

5.1. Dependability and delivery time

The first model is composed by the delivery time as the endogenous variable and dependability, flexibility and price as the exogenous variable. The estimated coefficients show a strong relationship between dependability and delivery time and a weak relationship between flexibility and delivery time. However, there is no relationship between price and delivery time.
This result is consistent with the results found in others studies about the model of cumulative capabilities. There is a strong relationship between dependability and delivery time.

We speculate that this relationship between dependability and delivery time might be related to the total availability of the internet access service. The faster the maintenance support provide by the supplier, the higher is the satisfaction of customers with delivery time. That is, the total amount of time the internet access service is working influences the perception and, hence, satisfaction with delivery time. However, the delivery time event occurs before any experience with maintenance support or any other experience with the service. A possible explanation for the aforementioned conclusion resides on the influence of recent events with maintenance to the total experience of the delivery time.

Another plausible explanation is that the most recent experiences with the availability of the service or maintenance support influence the perception of the delivery time event because they are related to the dimension of time. We argue that the perception of customers about the delivery time event is influenced by their experiences with maintenance support and availability of the internet access service.

5.2. Dependability and flexibility

The second model is composed by the flexibility as the endogenous variable and dependability, delivery time and price as the exogenous variable. The estimated coefficients show a positive significant relationship between dependability and flexibility and between price and flexibility. However, there is no significant relationship between delivery time and flexibility.

This result is consistent with the results found in others studies about the model of cumulative capabilities. There is a relationship between dependability and flexibility and price/cost and flexibility as found in other studies.
We speculate that the relationship between dependability and flexibility exists because the availability of the internet access service is a measure of the service’s performance. If the internet access service is working, it is according to their needs. Then, the higher is the satisfaction with dependability, the higher is the satisfaction with flexibility. That is, customers may tend to perceive the availability of service as criterion to judge the fitness of service to their needs.

The relationship between price and flexibility might be consequence of the monthly fee payments costumers regularly make. Every month customers have to pay the fees to use the internet access service. Then, costumers regularly evaluate the cost and benefits of the service. If the service is not working according to customers’ needs, then the monthly fee may tend to become “expensive” for them. On the other hand, if the service is according to customers’ needs, then the monthly fee may tend to be seemed as fair.

5.3. Dependability and overall customer satisfaction

The dependability is the competitive criterion with the highest significant positive relationship with the overall customer satisfaction. Although this relationship was not evaluated in other studies, we want to make some comments about this result.

Telecommunication services as well as any other type of technology help firms to deal with an increasing amount flow of information coming from a variety of sources. For example, there is information coming from customers making new orders, customers asking information about products and services, suppliers asking information about product features, salesmen looking for price and quantity of products and services. All this information is an important input for firms’ operations. It is possible to argue that a failure in flowing of information can cause problems for sales, production, suppliers, customers and others. Considering this scenario and results, we assume that dependability is a central attribute to overall customer satisfaction.
6. CONCLUSION

This research aimed to explore the relationship among the competitive criteria from the perspective of performance. We conducted a customers satisfaction survey about internet access service from a telecommunication service provider from the South of Brazil.

The results showed that dependability has a high significant relationship with delivery time and a significant relationship with flexibility. Furthermore, the dependability criterion has the highest significant relationship with the overall customer satisfaction. It is possible to argue that dependability is one of the most important competitive criterion for customer satisfaction of the internet access service analyzed.

The relationship of dependability with other competitive criteria are according to conclusions from other studies about the model of cumulative capabilities. Based on an external perspective, we can conclude support for the existence of the model of cumulative capabilities. These results bring more question about the existence of trade-offs in operations management.

Managers from internet service providers must be careful about the dependability of services since it is an important criterion affecting overall customer satisfaction. Managers also must improve dependability of services in order to improve the customer satisfaction with delivery time and flexibility.

One limitation of this work is related to the nature of internet access service. Internet access service is a fundamental communication tool for firms change information to each other. That is, firms need service availability in order to avoid loses due to lack of communication. Thus, dependability may be a critical element in this type of service. For this reason, more studies must be done to evaluate the relationship among competitive criteria of products and services from other industries.
We run two models and tested some relationship among the variables. Researchers can run other models with different relationship among the competitive criteria, bringing more evidences about the nature of relations among the variables. This was also an exploratory research. Then, more research is necessary to the development of consistent knowledge about these issues.

7. REFERENCES


## TABLE 1

### Factor loadings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Sales consultant providing an individual customer service.</td>
<td>0.598</td>
</tr>
<tr>
<td>6. Quality of the service in the call center.</td>
<td>0.853</td>
</tr>
<tr>
<td>7. Quick response from the call center.</td>
<td>0.765</td>
</tr>
<tr>
<td>8. Accuracy in the information provided by the call center.</td>
<td>0.401</td>
</tr>
<tr>
<td>9. Knowledge and competence of installation technician.</td>
<td>0.596</td>
</tr>
<tr>
<td>10. Speed of service installation.</td>
<td>0.887</td>
</tr>
<tr>
<td>11. Fulfillment of the delivery time for service installation.</td>
<td>0.713</td>
</tr>
<tr>
<td>12. Service reliability after the installation.</td>
<td>0.594</td>
</tr>
<tr>
<td>13. Customer service of the maintenance team.</td>
<td>0.740</td>
</tr>
<tr>
<td>14. Quick response from maintenance services.</td>
<td>0.674</td>
</tr>
<tr>
<td>15. Available time of maintenance services.</td>
<td>0.507</td>
</tr>
<tr>
<td>16. Fulfillment of the delivery time in maintenance services.</td>
<td>0.690</td>
</tr>
<tr>
<td>17. Services with a low rate of failures.</td>
<td>0.655</td>
</tr>
<tr>
<td>18. Speed performance according to the contract.</td>
<td>0.659</td>
</tr>
<tr>
<td>19. Speed options offered by the service provider.</td>
<td>0.716</td>
</tr>
<tr>
<td>20. Service availability in different places/regions.</td>
<td>0.724</td>
</tr>
<tr>
<td>21. Service properly tailored to customer needs.</td>
<td>0.699</td>
</tr>
<tr>
<td>22. Fulfillment of technical specifications of service.</td>
<td>0.507</td>
</tr>
<tr>
<td>23. Updated equipments.</td>
<td>0.536</td>
</tr>
<tr>
<td>24. The price of the service (monthly fee).</td>
<td>0.592</td>
</tr>
<tr>
<td>25. Contract conditions as specified.</td>
<td>0.681</td>
</tr>
<tr>
<td>26. The right amount in the bill.</td>
<td>0.628</td>
</tr>
</tbody>
</table>
### TABLE 2
Constructs characteristics

<table>
<thead>
<tr>
<th>Construct</th>
<th>Abrev.</th>
<th>Variables</th>
<th>Types of variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer service</td>
<td>CS</td>
<td>5, 6 and 7</td>
<td>Independent</td>
</tr>
<tr>
<td>Dependability</td>
<td>DP</td>
<td>9, 12, 13, 14, 15 and 16</td>
<td>Independent</td>
</tr>
<tr>
<td>Delivery time</td>
<td>DT</td>
<td>10 and 11</td>
<td>Independent</td>
</tr>
<tr>
<td>Flexibility</td>
<td>FX</td>
<td>18, 19, 20, 21 and 22</td>
<td>Independent</td>
</tr>
<tr>
<td>Price</td>
<td>PC</td>
<td>24, 25 and 26</td>
<td>Independent</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>OCS</td>
<td>27</td>
<td>Dependent</td>
</tr>
</tbody>
</table>

### TABLE 3
Constructs’ validity

<table>
<thead>
<tr>
<th>Constructs</th>
<th>N</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer service</td>
<td>243</td>
<td>0.7577</td>
</tr>
<tr>
<td>Dependability</td>
<td>243</td>
<td>0.8806</td>
</tr>
<tr>
<td>Delivery time</td>
<td>243</td>
<td>0.9117</td>
</tr>
<tr>
<td>Flexibility</td>
<td>243</td>
<td>0.8406</td>
</tr>
<tr>
<td>Price</td>
<td>243</td>
<td>0.7355</td>
</tr>
</tbody>
</table>
### TABLE 4
Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>CS</th>
<th>DP</th>
<th>DT</th>
<th>FX</th>
<th>PC</th>
<th>OCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
<td>243</td>
</tr>
<tr>
<td>Mean</td>
<td>3.1684</td>
<td>3.3291</td>
<td>3.1803</td>
<td>3.7083</td>
<td>3.1382</td>
<td>3.2353</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>1.17671</td>
<td>0.95701</td>
<td>1.29944</td>
<td>0.81569</td>
<td>0.97070</td>
<td>1.09247</td>
</tr>
</tbody>
</table>

### TABLE 5
Multiple fit indices used to assess the model’s of goodness-of-fit with delivery time as endogenous variable

<table>
<thead>
<tr>
<th></th>
<th>RMR</th>
<th>GFI</th>
<th>AGFI</th>
<th>PGFI</th>
<th>NFI</th>
<th>RFI</th>
<th>IFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modelo dado</td>
<td>0.021</td>
<td>0.996</td>
<td>0.923</td>
<td>0.047</td>
<td>0.997</td>
<td>0.950</td>
<td>0.998</td>
<td>0.998</td>
</tr>
</tbody>
</table>

### TABLE 6
Multiple fit indices used to assess the model’s of goodness-of-fit with flexibility as endogenous variable

<table>
<thead>
<tr>
<th></th>
<th>RMR</th>
<th>GFI</th>
<th>AGFI</th>
<th>PGFI</th>
<th>NFI</th>
<th>RFI</th>
<th>IFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modelo dado</td>
<td>0.010</td>
<td>0.998</td>
<td>0.958</td>
<td>0.048</td>
<td>0.998</td>
<td>0.973</td>
<td>0.999</td>
<td>0.999</td>
</tr>
</tbody>
</table>
FIGURE 1
Structural equation modeling with delivery time as endogenous variable

FIGURE 2
Structural equation modeling with flexibility as endogenous variable