# **Consequences Of Service Quality Linkage - An Insight From An Empirical Investigation In Higher Education**

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# INTRODUCTION

In today's fiercely competitive marketplace, characterized by similarly priced, look-alike service offerings from a variety of educational institutions, clear winners will be the ones that provide excellent service quality. It is well known that service quality and customer satisfaction are becoming the most important factors of business success for service providers. Companies have become convinced of the strategic benefits of quality (Phillips et al 1983). As per Kotler & Lane (2006), "Quality is a key to value creation and customer satisfaction. Higher levels of quality result in higher levels of customer satisfaction, which supports higher prices and (often) lower costs." Lee and Hwan (2005) also think that quality is a main single factor, which influences business unit performance. Service quality too has been shown to have significant positive impact on various profitability and market-related performance measures (Silvestro & Cross, 2000; Zeithaml, Berry, & Parasuraman, 1996, Lee and Hwan 2005). Considering this, Higher Educational Institution's (HEIs) in India are also focusing on the concept of service quality. The traditional areas of judging quality of HEI's have been academic standards, accreditation and performance indicators of teaching and research. HEIs can look for alternative ways to judge quality. Quality of service in general is subjective, unlike quality of products, which can be measured objectively, and so, an appropriate way of measuring this characteristic is to assess the perception of consumers. Measuring quality from this viewpoint has seen very little consideration in higher education to date. HEI's can measure service quality on the basis of student's perception as students are considered to be the "Primary Customers" of a University (Hill, 1995). Students are also the direct recipients of the service provided and hence, students perceive service quality as an extremely important issue for universities and their management. HEI's need to be concerned with how their students feel about their educational experience and thus, modify their strategies. It is well recognized that, "universities are increasingly finding themselves in an environment that is conductive to understanding the role and importance of service quality" (Shank et al., 1995). As HEI's tussle for competitive advantage and high service quality, the evaluation of educational service quality is essential to provide motivation for and to give feedback on the effectiveness of educational plans and implementation. Educators thus need to account for the quality of service that they provide and also need to know the consequences of service quality. Undoubtedly, owing to the belief that delivery of high service quality is a must for attaining customer satisfaction and a number of other desirable behavioral outcomes, recent years have witnessed a flurry of research exploring interrelationships between service quality and customer satisfaction. This study expands the research stream in higher education sector to develop empirical understanding of the relationship between service quality, student satisfaction and behavioral responses. As Indian universities consider delivery of excellent service quality to students a key to success and survival, the findings from the study can provide them with valuable insights in ways of enhancing service quality so as to induce greater student satisfaction and positive behavioral outcomes. In the present article, the researcher first discusses relevant literature and propose hypothesis to be tested. Second, the researcher describes the methodology, results and discusses managerial implications. Last, the limitations, and implications for future research are discussed.

# LITERATURE REVIEW

Service Quality: Parasuraman, Zeithaml, & Berry (1985, 1988, and 1991) define perceived service quality as "a global judgment, or attitude, relating to the superiority of the service.". Delivery of higher levels of service quality is the strategy that is increasingly being offered as a key to service providers' efforts to position themselves more effectively in the marketplace (Parasuraman, Zeithaml, and Berry 1988). Bitner, Booms and Tetreault (1990) define service quality as the individual's general attitude towards the service firm. In general, service quality promotes

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customer satisfaction, stimulates intention to return, and encourages recommendations (Nadiri & Hussain, 2005). Abdullah, 2006 posits that measuring the quality of service in higher education is increasingly important. Similar views are expressed by many authors and as a result, numerous studies are seen in service literature addressing the diverse issues related to service quality in education (Abdulla 2006, Nadiri et al 2009, Cook 1997, Barnes 2007, Donaldson & Ruciman 1995, Mai 2005, Quinn et al 2009). With the current global transformation of educational institutes into service-oriented establishments, the institutes service must continuously improve in order to satisfy student needs (Cannon & Jagdish, 1994). Owing to the unique characteristics of services, namely intangibility, heterogeneity, inseparability and perishability, service quality cannot be measured objectively (Patterson & Johnson, 1993). Hence service quality in education is measured by "students' perception of service quality". Service quality literature shows that in most of the studies, service quality of higher education is measured either by SERVQUAL (Parasuraman et al., 1988) or SERVPERF (Cronin and Taylor, 1992) measuring instruments. However, there have been criticisms for the same as both these scales are generic and not education specific (Abdulla 2006).

- \*\*Customer Satisfaction: Extensive research into customer satisfaction has been seen in marketing literature for many years. This is because customer satisfaction has been considered by companies as a key strategy to gain competitive advantage (Woodruff and Gardial 1996). Two prominent but quite different conceptualizations of the satisfaction construct can be distinguished: transaction (or encounter) specific and brand specific. From a transaction specific perspective, satisfaction is viewed as a post choice evaluative judgment of a specific transaction or purchase occasion (Oliver, 1980; Oliver & DeSarbo, 1988). From brand specific perspective, satisfaction is an overall evaluation based on many transient experiences with organization's services over time (Westbrook & Oliver 1991). Overall service satisfaction is distinguished from encounter satisfaction in that the overall construct reflects the customers' feelings about multiple encounters or experiences (Rust & Oliver1997). Satisfaction with a service provider is perceived as being both an emotion and evaluative-based response to a service encounter (Oliver, 1997). Student satisfaction refers to the favorability of a student's subjective evaluation of the various outcomes and experiences associated with education (Oliver & DeSarbo 1989). Student satisfaction is being shaped continually by repeated experiences in campus life. Moreover, the campus environment is seemingly a web of interconnected experiences that overlap and influence student's overall satisfaction (Elliott & Shin 2002).
- **Behavioral Intentions:** As per US based service quality literature (Boulding, Kalra, and Staelin 1999; Cronin and Taylor 1992; Zeithaml, Berry, and Parasuraman 1996), service quality is directly linked with customers' behavioral intentions. Numerous empirical studies have reported that satisfaction is the predictor of behavior intentions (Cronin et al 2000; Olorunniwo et al 2006; Choi et al 2004). The indicators of behavioral intentions represent the outcome measures in this study. Zeithaml, Berry, and Parasuraman (1996) suggest that positive behavioral intentions are reflected in service providers' ability to have customers (1) Say positive things about them, (2) Recommend them to other consumers, (3) Remain loyal to them, (4) Spend more money with them, and (5) Pay price premiums. The consequences of satisfaction in higher education do not linearly correspond to the consequences of satisfaction in other services, since the education service may be a non profitable one with many specific characteristics. In terms of higher education, the main consequences found by some researchers were: loyalty, complaints (Webb & Jagun, 1997), and word of mouth actions (Athiyaman, 1997). A student loyal to his or her educational institution must have a positive cognitive-emotive attitude toward the institution, one that provides the underlying motivation for his or her behavior (Hennig-Thurau, T., et al 2001). Student loyalty is a key objective for many higher education institutions as the advantages (to the university) of student loyalty are not limited to the time that the student spends in the university; indeed, these advantages are at their greatest after the student graduates. According to Hennig-Thurau, T., et al 2001, student loyalty covers different behavioral intentions: 1) Word of mouth promotions 2) Repurchasing intention 3) Referral intentions and 4) Alumni-related intentions.
- ♦ Linkages Among Service Quality, Overall Service Quality, Satisfaction And Behavioral Intention: Literature review revealed that numerous studies are done on service quality in almost all service sectors. Several studies have shown relationship among two or more of these constructs: service quality, overall service quality, customer satisfaction and behavioral intention. Theses linkages among constructs have been empirically tested in many service

sectors like retail, banking, entertainment, healthcare etc. Some of these studies are mentioned in Table 1. However, there are very few similar studies in the higher education sector. Some of the studies in higher education show the relationships between service quality and satisfaction, but most of these studies are conducted outside India (See Table 2).

Table 1: Literature Linking Quality, Satisfaction And Behavioral Intentions In Service Sector

SI. No.	Source	Relevant Constructs and linkages	Sector/Industry
1.	Qin and Prybutok (2009)	SQ-SAT	Fast Food Restaurant
2.	Cronin, Brady, and Hult (2000)	SQ -SAT	Fast Food, Health care, Long Distance
		SQ - BI	services, Sporting events, Entertainment
		SQ -SAT - BI	
3.	Parsuraman, Zeithaml, and Berry	SQ -OSQ	Telephone Repair, Retail Banking Insurance,
	(1988, 1991)		Credit Card Company Repair and
			Maintenance Long Distance Telephone Co.
4.	Keillor, Hult, and Kandemir (2004)	SQ- BI	Fast food and Grocery
5.	Zeithml, Berry, & Parasuraman (1996)	SQ -BI	Computer Manufacturer, Retail Chain,
			Automobile Insurer
6.	Aga & Safakli (2007)	SQ-SAT	Professional Accounting firm
7.	Tian-Cole, Crompton &Wilson (2002)	OSQ-B	Wildlife Refuge
		SAT-BI	
8.	Wahyuningsih (2005)	SAT-BI	Insurance
9.	Boulding, Kalra, Staelin &Zeithaml (1993)	SAT-BI	Hotel
10.	Oliver (1980)	SAT-BI	Vaccination Program

Legend: Service quality-SQ, Satisfaction-SAT, Overall Service Quality-OSQ, Behavioral Intention-BI

Table 2: Literature Linking Quality And Satisfaction In Higher Education Context

SI. No.	Source	Relevant Constructs and linkages	Country of data collection
1.	Mai Li-Wei (2005)	SQ-SAT	US &UK
2.	Nadiri et.al (2009)	SQ-SAT	Cyprus
3.	Arambewela and Hall (2006)	SQ-SAT	Australia
4.	Alves and Raposo (2007)	SQ-SAT	Portugal
5.	Holdford and Patkar (2003)	SQ-SAT	USA

Legend: Service quality-SQ, Satisfaction-SAT

To date, the important relationships between the four constructs; *Service Quality, Overall Service Quality, Student Satisfaction And Behavior Intention* remain largely unexplored, especially in the Indian context of the education sector. The present study thus, endeavors to fill the gap in the service quality literature in higher education context by reporting insights obtained by analyzing relationship between different constructs.

### OPERATIONAL DEFINITIONS OF THE VARIABLES IN THE STUDY

- Service Quality (SQ): SQ refers to the student's general attitude and judgment about the university's overall excellence or superiority. Service quality judgments are more cognitive. In this study, SQ refers to students' perception of the quality of particular attributes of the university.
- **© Overall Service Quality (OSQ):** OSQ is the evaluation of the quality of the university in general, rather than that of particular attributes. It refers to overall rating or global assessment of service quality. This will be a direct measure of students' perception of service quality.

- **Overall Student Satisfaction (SAT):** SAT refers to the student's overall evaluation based on many transient outcomes and experiences with university's services over time. Satisfaction judgments are both affective and evaluative.
- **Behavioral Intention (BI):** BI refers to university's ability to get its students to **1)** Say positive things about the university, **2)** Recommend the university to other students. BI refers to behavioral outcomes.

#### **HYPOTHESES**

The hypotheses to be tested were established from the literature review.

- H1: Service quality is positively associated with overall student satisfaction.
- H2: Students satisfied with educational experience engage in positive behavior intentions.
- H3: Service quality is positively associated with students' behavioral intentions.
- H4: Service quality is positively associated with overall service quality.
- H5: Overall service quality is positively associated with behavioral intentions.
- H6: Overall student satisfaction is positively associated with overall service quality.

#### METHODOLOGY

**The Conceptual Model:** The conceptual model to be tested results from hypotheses previously established and illustrates the consequences of perceived service quality. The model illustrates overall student satisfaction and behavioral intention as the main consequences of service quality. The latent variables are SQ, OSAT and BI and manifest variable is OSQ. See Figure 1 for the conceptual model to be tested.

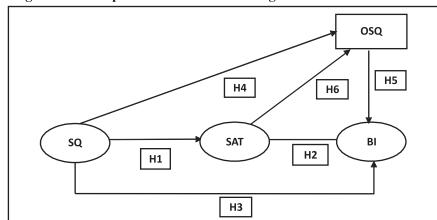


Figure 1: Conceptual Model Tested In Higher Education Institutions

Legend: SQ: Service Quality, OSAT: Overall Student Satisfaction, BI: Behavioral Intention, OSQ: Overall service quality

- **Measures:** The variables included in this study were measured using 46-item scale. A brief description of the various measures is presented below.
- \*Service Quality measures (SQ): The measurement of service quality is done through attribute (multi-item) level of measurement. An attribute level of measurement attempts to first assess a student's perception of each attribute or dimension of service and then quality assessments are summed into an overall quality score. SQ was measured using 37 item scale adopted and modified from Abdulla 2006. HEdPERF scale was developed by Firdaus Abdulla in 2005 and later refined in 2006 and named "Modified HEdPERF". Firdaus Abdulla empirically tested "Modified HEdPERF" (Higher Education PERFormance only) a new and unique measuring instrument to measure service quality in higher education. Modified HEdPERF had reliable estimations (Cronbach alpha -α range 0.81- 0.92), greater criterion and construct validity (Criterion validity 0.58, Construct validity 0.57), greater explained variance (Adjusted *R*² 0.34), Root mean squared error of approximation (RMSEA 0.07) and consequently, a better fit compared to the earlier scale-HEdPERF. Firdaus A. (2006) found that service quality in higher education can be considered as a five-factor structure with conceptually clear and distinct dimensions namely 'Non-academic aspects', 'Academic aspects', 'Reputation', 'Access' and 'Program issues'. The scale is education specific and developed to embrace different aspects of tertiary

education institution's service offering. "Modified HEdPERF" captures the authentic determinants of service quality within the higher education sector. As the 37 items were generated and validated within higher education context, no major modification was required for this study. All the items were presented as statements on the questionnaire and measured on a seven-point, Likert-type scale that varied from 1=Strongly Disagree to 7=Strongly Agree.

- **© Overall Service Quality measure (OSQ):** OSQ is measured using aggregate level of measurement. An aggregate approach assesses student's overall or global quality with a service. OSQ was measured using one-item scale. This is taken from Firdaus 2005. Cronin and Taylor 1992 have used the similar one item for direct measure of quality. The single item was presented as a statement and was measured on a seven point, Likert type scale that varied from "1= Very Poor" to "7=Excellent".
- \*Overall Student Satisfaction measures (SAT): Overall student satisfaction and not specific transaction satisfaction with the university was measured. SAT was measured using a 6 item scale adopted and modified from Westbrook and Oliver 1981. Westbrook and Oliver 1981 report reliability estimates ranging from .91 to .95 over two samples and two products. All are domain satisfaction items from the various literatures reviewed by Westbrook and Oliver. Student's emotion and evaluative-based responses were measured with 7 interval bipolar adjective scale. The six satisfaction items in bipolar format were pleased-displeased, contented-disgusted, satisfied-dissatisfied, did a good job-poor job, wise choice-poor choice (of the college), and happy-unhappy.
- Behavioral Intentions measures (BI): BI was measured using a 2 item scale adopted and modified from the behavioral-intentions battery developed by Zeithaml, Berry, and Parasuraman 1996. The first item related to whether students will say positive/good things about the university to other people. The second item related to whether the students will recommend the university to friend/someone who seeks their advice. Each item was accompanied by 7-point likelihood scale (1 = not at all likely and 7 = extremely likely). The indicators of behavioral intentions represent the outcome measures. Keillor et al (2004) used similar two items to measure behavioral intentions and they found that the two items were robust across eight samples after evaluating psychometric properties. The items were reliable and valid with composite reliability scores ranging from .76 to .96. Cronin, Brady, and Hult 2000 also used similar items to measure behavior intention.
- **\*Data Obtainment :** Descriptive type of study was undertaken to establish relationship among variables: Service quality, overall service quality, overall student satisfaction and behavioral intention.
- Students from NAAC (National Assessment and Accreditation Council) accredited higher education institution in Bangalore was considered for the study. The data was collected from 237 respondents. The data was collected from IIIrd year (Final year) undergraduate (commerce and management) students. A total of 260 questionnaires were distributed to IIIrd year undergraduate students. Out of 260 questionnaires circulated, all the questionnaires were returned, though only 237 questionnaires were found to be usable. 23 questionnaires had incomplete responses. Out of 237 students; 139 (58.6%) were Commerce students and 98(41.4%) were Business Management students. 139 Commerce students comprised of 68 female and 71 male students. The 98 Business Management students comprised of 33 female and 65 male students. The data was collected in the month of March 2010 by means of a structured questionnaire comprising of five sections namely A, B, C, D and E. Section A contained two questions pertaining to student profile (Gender and Course of study). While Sections B, C, D and E required students to evaluate service components of their educational institution in which only perception data was collected and analyzed. Specifically, section B consisted of 37 attributes (perception items) to measure service quality. In addition to multi-item scale used in Section B, a one-item scale was also used to measure overall service quality (Section C). In addition to the main scale, respondents were asked in section D and E to provide an overall rating of student satisfaction and behavioral intentions. There were a total of 46 items in all.

# RESULTS AND DISCUSSION

**Reliability:** Reliability of scales was tested. Cronbach's alpha was computed as a measure of internal consistency type of reliability for service quality, overall student satisfaction and behavioral intention. Coefficients greater than or equal to 0.70 were considered acceptable and a good indication of construct reliability (Nunnally, 1978). As shown in Table 3, the reliability coefficients (Cronbach's alpha) for all the three constructs (SQ, OSAT and BI) is above 0.70, thereby indicating high internal consistency among items within each construct. The overall reliability alpha of the

**Table 3: Summary Statistics** 

Variable Name	Item*	No. of items	Mean	Standard Deviation	Reliability Scores - Cronbach's $\alpha$
Service Quality	SQ	37	3.977	0.654	0.950
Overall Service Quality (Direct Measure)	OSQ	01	4.485	1.329	NA
Overall Student Satisfaction	SAT	06	4.300	0.170	0.934
Behavioral Intention	ВІ	02	4.388	0.089	0.898

Item\*-Abbreviations used in the article

multi-item service quality scale was found to be 0.950. This shows that the modified HEdPERF scale is a reliable measurement instrument of service quality in higher education. The overall reliability alpha of the overall students' satisfaction scale and behavioral intentions scale was 0.934 and 0.898 respectively. This was not surprising as all the three are well accepted and validated in the field of services.

Analysis: Descriptive statistical summary of the response data is reported in Table 3. The data was put in a structural model to get an integrated result. The conceptual model explaining the relationship structure of various constructs discussed is given in Figure 1. Based on this proposed model, six hypotheses testing the significance of relationship between constructs were conducted. This hypothesis testing was done after fitting a simultaneous equation model using Structural Equation Model (SEM). The analysis was performed using SPSS - AMOS (Analysis of Moment Structures) version 18.0. Maximum likelihood method was used for estimation (fitting) of the model. The model performance statistics are reported in Table 4.

Table 4: Summary of Model Fit

Model Fit assessment	Result
X 2	7741.95
Degree of freedom	1035
P-value	< 0.0001
GFI	0.831
AGFI	0.789
NFI	0.91
PCFI	0.0000
AIC	8101.95

Legend: GFI- Goodness of Fit, AGFI - Adjusted Goodness of Fit, NFI - Normed Fit Index, PCFI-Parsimony Comparative Fit Index, AIC- Akaike Information Criterion

The explanatory power of the overall model is statistically significant ( $\chi^2 = 7741.95$ , p<0.0001). Further, the goodness of fit index (GFI) is 0.831. This is calculated as GFI = 1 -  $\left[\chi^2\right]_{\text{(default model)}}/\chi^2\right]$ . Adjusted GFI (AGFI) is 0.789. Model fit measure based on Incremental fit (NFI) is also reported in Table 4. NFI reflects the proportion by which the proposed model improves fit compared to the null model. NFI in this study was found to be 0.91, which means that the proposed model improves the fit compared to null model by 91%. Two model parsimony measures PCFI and AIC are

**Table 5: Path Coefficient Estimates And Their Significance Test** 

Path	Estimate (Non-Standardized)	P value	Hypothesis supported
SQ → SAT	0.10023	<0.001	H1
SAT → BI	0.09882	<0.001	H2
SQ → BI	0.10035	<0.001	Н3
sq → osq	0.10010	<0.001	H4
OSQ → BI	0.0831	<0.001	H5
SAT → OSQ	0.10057	<0.001	Н6

Legend: SQ: Service Quality, OSAT: Overall Student Satisfaction, BI: Behavioral Intention, OSQ: Overall service quality

SQ b= .1002 b= .0988 BI b= .0988

Figure 2: Final Structural Model Of The Relationship Among SQ, OSAT, OSQ - A BI With Path Coefficients

Legend: SQ: Service Quality, OSAT: Overall Student Satisfaction, BI: Behavioral Intention, OSQ: Overall service quality

also reported in Table 4.

Table 5 gives the estimated path coefficients along with the p values of tests for their significance. The estimated path coefficients are significantly different from zero (p < 0.001). The results of the study as seen in Table 5 supports all the six Hypotheses proposed. Based on these results, a final structural model is put forward in Figure 2.

First, the results suggest a direct and significant influence of service quality on overall student satisfaction supporting H1. Service quality measured using modified HEdPERF scale positively influences overall student satisfaction suggesting that as perception of service quality improves, so too does the overall satisfaction of the students. Hypothesis 2 is supported as results suggest that overall student satisfaction influences behavioral intentions of students. Students satisfied with educational experience engage in positive word of mouth and recommend the university. H3 suggests behavioral intentions in higher education are influenced by service quality. The results show evidence to uphold this hypothesis. The result also confirms that service quality influences overall service quality; supporting H4. Overall service quality positively influences behavioral intentions supporting H5. Overall student satisfaction positively influences student's global assessment of service quality supporting H6.

# MANAGERIAL IMPLICATIONS

The results provide empirical support for the conceptualization of the Figure 1. Two aspects of the study are likely to be of special interest to policy makers of HEIs. First, it confirmed that students' perception of service quality and overall service quality can result in positive word of mouth and recommendation of university. Second, it confirmed the relationship between service quality and overall student satisfaction and found that both constructs had an independent effect on students' future behavior intentions. Overall service quality and overall student satisfaction at the global level are overall evaluations. However, the study suggests that change in overall evaluations start with changes in perception of service quality. Hence, the priority of policy makers is at the transaction level of service quality and they must try improvement in each of the service quality attributes. This is in line with Berry and Parsuraman (1991) who noted that "Service quality is the foundation of service marketing."

While the service quality attributes are under the control of educational administrators, the behavioral outcomes or intentions are not. Thus, at the transaction level, service quality is the most important for education administrators. To influence students' behavior intentions, administrators should make serious attempts to improve the service quality attributes. If students' perception of service quality enhances, then there will be positive consequences in the form of

overall student satisfaction and overall service quality perception. This in turn will result in students talking positive about the university and will also recommend the same to their friends and other people. Finally, this is what all educational institutions aim for. From a managerial perspective, the findings of the study clearly show that higher education policy makers/administrators should monitor students' perception of service quality and satisfaction. Understanding of students' perception of service quality and satisfaction will enable them to serve the students better and provide a quality experience. This will, in turn, result in improving the image, reputation and financial performance of higher educational institutions and ultimately, their profitability. The study will guide educational administrators and policy makers to chart a service-improvement strategy for their higher educational institutions. The findings from study will suggest key opportunities for educational institutions to improve their quality of service as perceived by students and thus, will provide guidelines for the strategic planning of the institution.

#### **LIMITATIONS**

This research has certain limitations, and interpretations of its findings, therefore, need to be undertaken with caution:

1. The sample in this study is limited to students studying at one university in the city of Bangalore and hence, generalization of the findings is difficult.

- **2.** Issue like how does higher education use these concepts of service quality, student satisfaction and behavioral intentions to formulate marketing strategies effectively is not explored in this study.
- **3.** Only a single model is tested. Competing alternate models with varying relation structures has not been tested and compared with the proposed model.

## SCOPE FOR FURTHER RESEARCH

This study provides higher education researchers in India with useful guidelines for future research in more rigorous theoretical and methodological process with respect to service quality, student satisfaction, and behavior intentions. There is scope for testing competing alternate models and comparing those with the proposed model. Findings of the study supported the influence of overall student satisfaction on overall service quality, which suggests that overall service quality is a higher level construct. However, this is not conclusive because SEM shows only whether relationship conceptualized in the model has support from the sample data. Although the impact of overall satisfaction on overall service quality was conceptualized based on previous study (Tian-Cole 2002), there is also evidence in the literature that there may be reciprocal effect between overall service quality and overall satisfaction (Dabholkar 1995). Further research could usefully examine this possible effect in order to determine which construct is superordinate at the global level. The purpose of this study was to test the structural model and thus, did not focus on examining the dimensions of the constructs and its linkages. Thus, another topic that awaits further research is examination of the inter-relationships among dimensions of latent constructs in the model.

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