

ARCHITECTURAL DESIGN OF UNIVERSITIES AND ITS IMPACT ON STUDENT SATISFACTION: THEORY AND RESULTS OF AN EMPIRICAL STUDY

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ABSTRACT

This paper investigates the impact of the perceived architectural design of Universities on student satisfaction. We outline a theoretical framework taking student satisfaction and architectural design into account, and we demonstrate by way of an empirical study that the two are interconnected. The main result is that the perceived architectural design of Universities has a small but nevertheless significant influence on student satisfaction.

KEYWORDS design, education, student satisfaction, architectural design

1 INTRODUCTION

Customer satisfaction has become a major focus among strategy researchers and practitioners as an essential element for building and designing relationships with customers. In the last 15 years, much research identifying [1], describing [2], and analyzing [3] this topic has been carried out.

Today, also non-profit organizations focus on member- (“customer”) satisfaction and many ideas – developed for consumer goods and services – can be applied [4]. Today, numerous universities regard students as their customers and student satisfaction is treated as part of their philosophy [5] [6]. Universities face growing competition in the education market [7]. Therefore, the satisfaction of the stakeholders of a university – especially students – is of growing importance.

In order to obtain customer satisfaction, organizations like companies or universities must analyze the antecedents of customer satisfaction [8]. What we miss in existing literature and practice is a discussion of the influence of architectural design on satisfaction. Especially for intangible long-term services such as university courses we assume that a mutual influence does exist.

The objective of this paper is to investigate this influence for two schools of a university occupying different buildings.

2 CONCEPTUAL FRAMEWORK

2.1 Customer Satisfaction

Existing satisfaction research [9] [10] concludes that satisfaction with an organization is a cumulative, attitude-like construct that comprises satisfaction with specific components. Following the theories of Donabedian [11] and Bruhn [12], these components can be divided in a potential dimension (customer evaluation of seller's technical, organisational and personnel resources before using the product or service, e.g. the building), a process dimension (customer evaluation of the process during consumption of a product or a service, e.g. friendliness of the employees) and an outcome dimension (the result for the customer after consuming the product or service).

This approach can be adapted for universities: Aspects which can have an influence on student satisfaction can be divided into "potentials" (e.g. architectural design, employee dress-codes, or university infrastructure), "processes" (e.g. way of teaching, teacher friendliness, or learning conditions) and "results" (e.g. acquired knowledge, certificates, or job prospects). Existing studies focus on the last two aspects, but the first aspect – potentials, e.g. architectural design – has hitherto been neglected. So we want to concentrate on this last aspect as possible antecedent of satisfaction here.

2.2 Architectural Design

The conceptual framework including architectural design as one of the potentials furthermore embeds cognitive and environmental psychology theories and contributes to research findings based on Baker's [13] and Bitner's [14] conceptualizations of how store environment cues can influence consumer decision making. The three types of store environment cues (social, design and ambient) proposed by Baker [15] correspond to Bitner's [16] environmental dimensions in her research on what she called "servicescapes". Bitner refers to the three dimensions ambient, space/function (e.g. design) and signs/symbols/artefacts. Baker [17] argues that the conceptual foundation of her research is constituted by theories of inference, schema and affordances. These theories state that consumers draw on design, social and ambient environment cues to evaluate stores, assuming that these cues offer reliable information about product/service related attributes (quality, price, overall shopping experience) [18]. Given that marketing researchers traditionally subsume design and ambient cues/dimensions under the superior construct of store atmospherics [19] the authors limit their investigations to design aspects and ambient conditions. Though extensive research has already been performed over the past decades [20] [21] [22] to investigate the impact of the physical environment and surroundings on behavioural outcomes for service businesses such as hotels, restaurants, professional offices, banks, retail stores, and hospitals, little research exists which explores the effects of atmospherics, or physical design and decor elements on students in academic service settings.

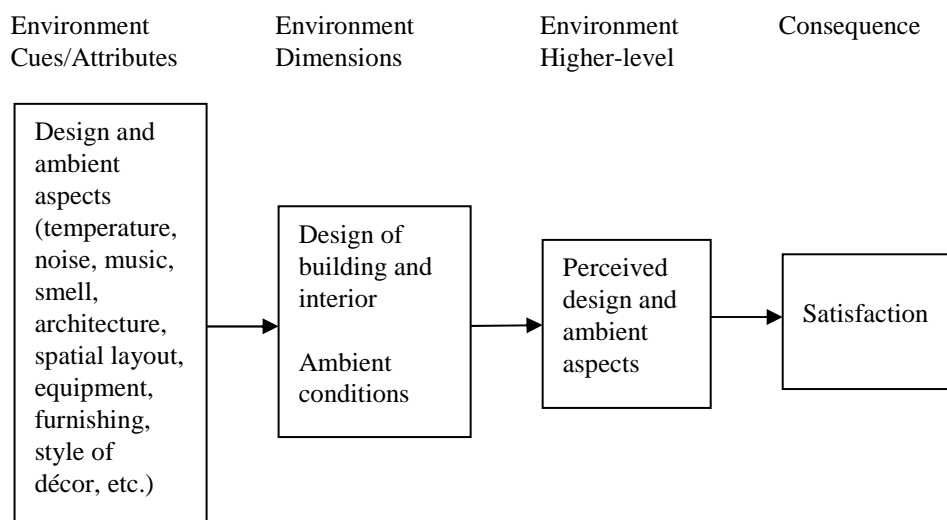
Hence the purpose of this paper is to integrate theories and empirical findings from diverse disciplines into a framework to portray how the perceived architectural design and ambient conditions influence student satisfaction in universities. In pursuing this objective we refer to research on organizational behaviour to demonstrate that environment cues or physical settings can influence employee satisfaction, productivity,

and motivation [23]. In the following a theoretical model is presented for explaining the impact of environment (architectural design, ambient conditions) cues on student satisfaction in universities. Besides, a research proposition is also stated.

2.3 Theoretical Model

Theories from diverse disciplines provide a salient theoretical framework and hence serve as a broad foundation for our investigation into environmental psychology and marketing (customer satisfaction) research tradition along with relevant literature in architecture. Figure 1 highlights the framework for illustrating the impact of environment on student satisfaction in universities.

FIGURE 1: Impact of environment on student satisfaction



On the basis of the precedent literature evidence and on the foregoing theoretical model the authors hypothesize that:

The higher students' design and ambient cue perceptions are, the higher their satisfaction with the university will be.

3 EMPIRICAL STUDY

3.1 Data Base

To test this hypothesis, an empirical study, was conducted at the University of Applied Science Salzburg in December 2005 and January 2006. One part of the sample comprises 270 business students with their classrooms located in a new building (finished in September 2005) in Puch/Urstein, a small town near Salzburg. The second part of the sample comprises 56 design and product management students whose classrooms are located in a two-year old building in Kuchl, another small town slightly

further away from Salzburg. The questionnaires for these two groups of students focused on their respective buildings. The questionnaires were dispersed in class.

3.2 Questionnaire and Method of Analysis

The questionnaire for both buildings includes one question on the overall satisfaction (“My satisfaction with the university is very high”), measured on a 5-point-scale (1= absolutely disagree, 5 = absolutely agree). The perceived design was measured by a multi-item scale: In a qualitative study made beforehand, 14 bipolar perceptions of the building design of the university (independent of the location) were identified (see Figure 2) and used in this study (each with a 5-point-scale, e.g. ugly =1/beautiful = 5; old-fashioned =1/modern = 5).

Correlation analyses were carried out to determine the impact of these building perceptions on satisfaction. In so doing, we used Spearman coefficients because the scale was not metric. This coefficient indicates the level of impact (“1” = very high, “0” = no impact) and the kind of impact (“+” = positive impact, “-“ = negative impact).

3.3 Results

The results are shown in Table 1.

Table 1: Impact of building design on student satisfaction (empirical results)

Items for building design (measured on a bipolar 5-point scale)	Correlation coefficients (Spearman) and significance (*for <,01, ** for <,00, n.s. for “no significance”) with student satisfaction	
	scale = 1 ↔ scale = 5	Puch/Urstein (n= 270)
ugly ↔ beautiful	n.s.	n.s.
old-fashioned ↔ modern	+0,174**	n.s.
dead ↔ lively	n.s.	+0,403**
dirty ↔ clean	n.s.	n.s.
provincial ↔ urban	n.s.	n.s.
dangerous ↔ safe	n.s.	n.s.
unfriendly ↔ friendly	+0,169**	n.s.
not interesting ↔ interesting	+0,166**	+0,404**
dull ↔ experience-oriented	+0,148*	n.s.
gawkish ↔ multifarious	+0,152*	+0,448**
monotonous ↔ surprising	n.s.	n.s.
confusing ↔ clearly laid out	n.s.	n.s.
unappealing ↔ appealing	+0,191**	+0,434**
cold ↔ warm	+0,149*	n.s.

We can thus assume that there is an influence of architectural design on student satisfaction.

Regarding the building in Urstein the study shows that many of the items we used indicate only a minor influence whereas for the building in Kuchl it shows that a few of the items have a stronger influence. These different results for the two locations can be a result of the different schools (interpreted as meaning: “For the design school students the architectural design is more relevant in special aspects than for business students because of their professional bias”), or the result of different buildings (“It depends on which aspects of the building effect student satisfaction and to what extent.”). Another reason why only a few coefficients are significant for Kuchl can be that the sample here was smaller than for Puch/Urstein, in which case such small correlations are harder to prove.

4 CONCLUSION

The influences of building design on student satisfaction which we identified in our studies are not very strong, which is not surprising as it seems only reasonable that other factors such as the perceived quality of teachers have a much greater effect on satisfaction. Therefore architectural design is not the main influence on student satisfaction, but it nonetheless does have a certain effect.

As an implication for university management, we see that not only processes and results are relevant categories of customer satisfaction. Potentials can also be important, and generating good perceptions of an architectural design – especially generating “lively”, “interesting”, “multifarious” and “appealing” perceptions – can enhance student satisfaction.

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